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A Nuanced Perspective of Sexual Orientation and its Relationship with Well-being: Differentiating Sexual and Non-sexual Attractions in Heterosexual and Sexual Minority Women and Men

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Abstract of the Dissertation

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Research has demonstrated that violating the norm of heterosexuality by endorsing a sexual minority identity is associated with poorer psychological well-being. Such studies have failed to take into account the multifaceted nature of sexual orientation, looking primarily at identity, and failing to examine other components, namely same-sex attractions. The present study examined same-sex and other-sex sexual and non-sexual (emotional, romantic) attractions in an Internet sample of 532 adults ($n = 244$ heterosexual, $n = 288$ sexual minority). Findings established preliminary support for a measure of sexual and non-sexual attractions, and demonstrate that sexual and non-sexual attractions can be differentiated in heterosexual, gay, and lesbian individuals. The prediction that women would endorse greater emotional attraction than men was supported. The prediction that greater same-sex attractions, particularly sexual, would be

associated with poorer well-being was partially supported, with greater same-sex sexual attraction associated with greater loneliness. Contrary to predictions, same-sex attractions were not associated with poorer well-being for men more so than for women. Results from this study highlight the importance of assessing same-sex and other-sex sexual and non-sexual attractions in men and women of different sexual orientations, and provide further support that people experience attractions contradictory to their sexual orientation identity. Further, not all aspects of same-sex sexual orientation (i.e., same-sex attractions) are related to poorer well-being.

To Boba and RGA

Thank you for your unwavering love and support

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I. INTRODUCTION

Older paradigms of sexual orientation have viewed sexual behavior and self-identifying labels as the defining features of sexual orientation (e.g., see Garnets, 2002; Rothblum, 2000; Sell, 1997). More recent research, however, has found that sexual orientation encompasses a broader range of dimensions (e.g., Diamond, 2003a; Garnets, 2002; Narring, Huwiler, & Michaud, 2003). Indeed, sexual orientation is a multifaceted construct; it goes beyond labels and behaviors, and includes sexual and non-sexual attractions (Diamond, 2003a, 2004; Narring et al., 2003). Moreover, although people may endorse a particular personal identity, incongruities may exist within individuals (e.g., Deaux, 1996; Diamond 2003b, 2004; Mashek, Stuewig, Furukawa, & Tangney, 2006; Roccas & Brewer, 2002). For example, it is possible for a self-identified heterosexual individual to endorse same-sex attractions or behaviors, just as it is possible for a self-identified homosexual person to endorse other-sex attractions or behaviors. Given the complex nature of sexual orientation, it is important to go beyond labels and to examine other aspects as well. As such, the present study aimed to take a more comprehensive examination of sexual orientation by examining whether sexual and non-sexual (e.g., romantic, emotional) attractions can be differentiated between women and men who endorse different sexual orientation labels (gay, heterosexual, lesbian), and by examining the association between attractions that are consistent or inconsistent with norms related to sex and heterosexuality and indicators of psychological well-being.

Attractions

A paucity of research exists on attractions, yet there is growing reason to believe that different types (e.g., sexual and non-sexual) exist and are distinguishable, and that people experience varying levels of each (e.g., Diamond, 2002, 2003a; Klein, Sepekoff, & Wolf, 1985; Laumann, Gagnon, Michael, & Michaels, 1994; Yoneda & Davila, 2006). For example, Fisher and

colleagues (Fisher, 1998, 2000; Fisher, Aron, Mashek, Li, & Brown, 2002) found that there are three interrelated yet distinct emotion-motivation systems: lust, romantic attraction, and male-female attachment. These three emotion-motivation systems can operate together or separately (Fisher, 1998, 2000), and each system is associated with a specific constellation of neural correlates and a distinct behavioral repertoire (Fisher et al, 2002). Each system evolved for different reasons: lust, or sexual attraction, for the purpose of mating; romantic attraction to discriminate among potential mating partners; and male-female attachment to form a bond in order to fulfill reproduction needs. In present time, these three systems can be manifested as sexual (lust) and non-sexual (romantic attraction, attachment) types of attractions.

Similarly, Diamond's (2003a) biobehavioral model of love and desire suggests that the evolved processes underlying sexual desire and affectional bonding are functionally independent, governed by distinct social-behavioral systems, and involve different neurochemical substrates. In line with this, her work has shown that the processes underlying affectional bonding are not necessarily oriented toward other-sex or same-sex partners, that women can endorse romantic attractions to an individual yet endorse no sexual attractions and vice-versa (Diamond, 2000a, 2004), and that the line between friendships and romantic relationships can be blurred (Diamond, 2000b). Other work also suggests that it is possible to develop passionate infatuations with same-sex partners without same-sex sexual desire (Daly, 1996; Faderman, 1981), and conversely, to experience same-sex sexual desires and fantasies without romantic passion or emotional attachment (Whisman, 1996).

In line with existing theory and research, the present study assessed three types of attractions: sexual, romantic, and emotional (the latter two being non-sexual in nature). Building on Diamond's (2003a) and Fisher's (1998, 2000) models, attractions were defined as follows: *Sexual attraction* was conceptualized as physiological arousal, sexual fantasies, and/or a desire to have sexual contact with a person; *romantic attraction* was conceptualized as a sense of longing, yearning, or desire to be with a person; and *emotional*

attraction as a desire for a sense of mutual understanding, support, intimacy, and connectedness with a person. All attractions were conceptualized as more than a desire for friendship. Emotional attraction and friendship do share similarities, the latter of which often encompasses trust, confidence, and providing support, among other things (Argyle & Henderson, 1984). Unlike friendship, which can vary greatly in terms of the nature of interactions (e.g., doing activities together, providing emotional support) (e.g., Duck & Wright, 1993; Walker, 1994), emotional attraction emphasizes a sense of understanding, connectedness, and depth. In order to examine if emotional attraction is indeed more than desire for friendship, friendship desire was also assessed. Because these three types of attractions are relatively new and unstudied constructs, the present study also aimed to provide preliminary validation of these definitions and distinctions.

(Sexual) Identity: A Multifaceted Construct

Just as sexual orientation is a multifaceted construct, so is one's identity (e.g., Deaux, 1996; Frable, 1997). The importance of individual's possessing multiple identities has been underscored by numerous theories, including social psychological theories (e.g. Social Identity Theory, Taifjel & Turner, 1979; Identity Theory, Stryker & Serpe, 1982) and Queer theory (e.g., Seidman, 1996). How people negotiate their multiple, sometimes conflicting, identities, however, has been less studied (e.g. Frable, 1997).

Prominent social psychological theories of identity all agree that people possess multiple identities (e.g., Reid & Deaux, 1996; Stets & Burke, 2000)¹. Both Social Identity Theory (Taifjel & Turner, 1979) and Identity Theory (Stryker & Serpe, 1982) assert that a person has not a single personal self or identity, but rather, multiple selves and identities that correspond to widening circles of group membership and social identities (Stets & Burke, 2000). For example, a person might have the social identities of male, bisexual, attorney, atheist, American, and so on. Related to social identities are personal identities (also called

¹ For a comparison between Social Identity Theory and Identity Theory that highlights differences between these two theories, see "A tale of two theories: A critical comparison of Identity Theory with Social Identity Theory" (Hogg, Terry, & White, 1995).

personal attributes) (Reid & Deaux, 1996). As Reid and Deaux's (1996) integration model highlights, personal identities/attributes are not a separate form of identity from social identities, but rather, personal identities provide the content and meaning of social categories for a specific individual. Belonging to the social group male, for example, can include the personal identities/attributes of being strong, independent, and stoic for one male, and the personal identities/attributes of being assertive, sexual, and outspoken for another male. For both, the social identity of male may be inseparable from their respective personal identities/attributes.

For identities that are very visible, such as sex and race, people are automatically categorized and derive associated roles, norms, and expectations from them (Hogg & Abrams, 1988; Stets & Burke, 2000). Most people assume, for example, that people are born either male or female²; from birth and on, people are placed into either social group and learn what it means and is expected from one of their respective sex in their society. Sex, or perhaps more correctly gender, given its visibility and early categorization, is a social identity thought to be very accessible and salient (e.g., Frable, 1997; Mackie, Hamilton, Susskind, & Rosselli, 1996), thus dictating acceptable thoughts, feelings, and behaviors for its members from an early age. Indeed, "gendering"—remembering gender and acting on gender—starts at a very young age (Martin & Ruble, 2009). Most children develop the ability to label gender groups and to use gender labels in their speech between 18 and 24 months and start to develop gender stereotypes (e.g., hardness as male, softness as female; men wear ties, women wear dresses) around 36 months. Around 3 – 5 years of age, children show negative responses (i.e., correction, ridicule, identity negation) to gender norm violations, such as witnessing a boy playing with dolls or a girl playing with toy soldiers (for review, see Martin & Ruble, 2009).

Gender carries strong and salient norms beyond childhood, continuously influencing one's personal identity/attributes and prescribing behaviors, thoughts,

² Intersex conditions are often overlooked or understudied in terms of identity research (e.g., Frable, 1997).

and feelings that are consistent with being either male or female (e.g. Banaji, Hardin, & Rothman, 1993; Christensen, Rothgerber, & Wood, 2004; Hogg & Reid, 2006; Jetten, Postmes, & McAuliffe, 2002; Levant & Philpot, 2002; Shih, Pittinsky, & Ambady, 1999). Indeed, gender is such a prominent identity in our society that if one's gender identity differs from their biological sex, it is currently considered a psychiatric illness, as stated in the DSM-IV-TR. In addition to prescribing a sex-gender consistency, heterosexuality is also wrapped into male/female identity. Although homosexuality is no longer considered a psychiatric illness, heterosexuality is the overall norm, implying that all behavior and attractions should be consistent with this (and this is particularly true for men; e.g. Franklin, 1998; Renold, 2000; Tomsen & Mason, 2001). To be anything other than heterosexual, then, is a violation of sex norms. This raises important questions about the implications for those individuals (both heterosexual and sexual minority) who break the sex norms of heterosexuality.

Queer theory takes a critical examination of the sex norm of heterosexuality. Like social psychological theories of identity, it also views identities as multiple and views the intersection of identities as significant. The focus of Queer theory is not necessarily on people who identify as sexual minorities, but rather on those who break the sex norms of heterosexuality in some way (e.g., gender presentation, same-sex behaviors, sadomasochism, etc.), and it also aims to deconstruct and challenge these norms (Stein & Plummer, 1994). Queer theory goes a step further than social psychological identity theories, challenging the use of sexual and gender identity categories and labels due to their multifaceted, complex, fluid, and dynamic natures (e.g., Seidman, 1996; Stein & Plummer, 1994). Further, Queer theory argues against heterosexual/homosexual and male/female binaries, claiming that such binaries are inaccurately simplistic, exaggerate differences, and promote heteronormativity (e.g., Butler, 1990; Rich, 1994; Sedgwick, 1990).

Although Queer Theory argues against the use of sex (male/female) and sexual orientation identity categories, for better or worse, these identities do provide norms about permissible behavior and thus are important to study. As

such, the present study utilized sex (male/female) and sexual orientation (heterosexual/lesbian/gay) identity labels in order to examine if and how heterosexual and sexual minority women and men violate the norm of heterosexuality by endorsing different types of same-sex attractions, as well what the consequences are for those who do violate such norms.

Consequences of Violating Sex Norms

Little is known about what the consequences are for endorsing or engaging in non-normative (i.e., homosexual or non-heterosexual) experiences. Research has, however, demonstrated a relationship between endorsing a non-normative identity (e.g., sexual minority identity) and psychological distress (e.g., Meyer, 2003). For example, having a concealable stigma, such as a sexual minority identity, is associated with more negative affect and lower self-esteem than having a visible stigma or no stigmatized identity at all (Frable, Platt, & Hoey, 1998). Thus, we know that violating the norm of heterosexuality at the identity level is associated with negative consequences (e.g., additional stressors, lack of visibility) which can in turn lead to poorer psychological well-being (Meyer, 2003). However, as was previously discussed, sexual orientation encompasses more than one's identity, and thus different components of sexual orientation (e.g., label, different types of attractions, behaviors) may be uniquely associated with indicators of psychological well-being and distress.

Although existing research provides important information on the relationship between sexual minority status and psychological well-being, it does not speak to components of sexual orientation beyond one's identity (e.g., same-sex sexual and non-sexual attractions). That is, what are the relationships between other components of sexual orientation (e.g., same-sex sexual attractions, same-sex romantic attractions, same-sex emotional attractions) with indicators of psychological well-being? Previous theory and research suggest that gender norms prescribe heterosexuality, and thus proscribe against same-sex attractions (e.g. Franklin, 1998; Renold, 2000; Tomsen & Mason, 2001), which would suggest that all same-sex attractions are associated with poorer psychological well-being. However, more recent research suggests that this norm

may be more complex than a simple interdiction against all same-sex attractions for all people. Rather, this research points to the possibility that sexual and non-sexual attractions might violate sex norms to different degrees (e.g., Diamond, 2000a; Diamond & Savin-Williams, 2000; Yoneda & Davila, 2006). The present study examined the relationship between other components of sexual orientation (e.g., sexual and non-sexual attractions) and psychological well-being. The consequences of violating what is permissible by sex or heterosexuality norms are likely to vary by type of violation (sexual minority label, same-sex sexual attractions, same-sex non-sexual attractions, etc.), as well as by sex. Anecdotally (e.g., current movies and television shows), as well as through research (e.g., Diamond, 2002), the line between lesbian and heterosexual is somewhat blurred for women (Daly, 1996; Rust, 2000), whereas for men, the same is not true. Certain types of same-sex attraction and behavior may be more normative and therefore more acceptable and less stigmatizing among females (e.g., Diamond, 2002; Kite & Whitley, 1996, 1998; Whitley, 2001). In the present study, I predicted that the nature of the associations between the different types of attraction and indicators of psychological distress and well-being would be consistent with what is socially normative for participants' sex and sexual orientation.

To assess psychological well-being and distress, I choose to look at the following indicators: depressive symptoms, loneliness, self-esteem, and social anxiety. These particular dimensions of psychological well-being and distress were chosen as previous research has demonstrated their importance (e.g., Cochran & Mays, 2000; Frable et al., 1998; Hatzenbuehler, 2009; Mays & Cochran, 2001; Pachankis & Goldfried, 2006). Anxiety and mood are thought to be sensitive to the effects of social factors, and sexual minorities face more daily social stressors than their heterosexual counterparts (Mays & Cochran, 2001). In addition to anxiety and depression, exposure to such negative experiences may negatively impact one's self-esteem and social support (e.g., Frable, 1998). Furthermore, research has demonstrated that sexual minorities (gay men in particular) are more likely than heterosexuals to experience symptoms of social

anxiety (e.g., Pachankis & Goldfried, 2006; Safren & Pantalone, 2006), and a breadth of research has shown that sexual minority individuals are more likely to feel depressed and lonely than heterosexuals (e.g., Hatzenbuehler, 2009). Additionally, self-esteem is an essential part of social psychological identity theories (e.g., Stets & Burke, 2000). For example, when a person endorses behaviors, feelings, or thoughts consistent with the norms prescribed by their social group, this should be reflected in higher self-esteem, and conversely, when a person goes against the norms of their social group, this should be reflected in lower self-esteem.

The Present Study

In appreciation of the multidimensionality of sexual orientation, the present study took a more comprehensive look at sexual orientation, one that examined sexual identity (self-labeled sexual orientation) and same-sex and other-sex sexual and non-sexual attractions (sexual, romantic, emotional). The main aim of the study was to investigate how endorsement of same- and other-sex attractions varies for heterosexual and sexual minority men and women and by the kind of attraction, and whether endorsing non-normative attractions (i.e., attractions that go against one's sex) is associated with greater psychological distress (poorer well-being). Additionally, as no such measures that differentiate between non-sexual (e.g., romantic and emotional) attractions currently exist, the study also served as a way to validate a measure of sexual, romantic, and emotional attractions, and to see if emotional attraction and friendship are tapping different constructs despite some similarities (e.g., Argyle & Henderson, 1984). Studying different types of attractions among people of different self-identified sexual orientations allows for a better understanding of experiences that may or may not be congruent with identities and, thus, has the potential to provide a fuller understanding of sexual identity.

Research questions and predictions. In line with the ideas above, I examined the following:

1. To what degree do males and females of different sexual orientations report same-sex and other-sex sexual, romantic, and emotional attractions?

a) Comparisons between heterosexual men and women:

i. I predicted that women would have higher scores on all types of same-sex attractions. I made this prediction because gender norms are more restrictive for men than for women, making it more permissible for women to express same-sex attractions (Green, 1998; Herek, 1984; Levant, 1992; Levant & Pollack, 1995; McCreary 1994; Rothblum & Brehony, 1993; Sirin, McCreary, & Mahalik, 2004). Anecdotally and as can be seen in the media, women are often encouraged to endorse same-sex attractions and desires (e.g., Diamond, 2005), whereas for men this topic remains taboo. Additionally, research suggests that there is greater fluidity in women's sexuality than in men's (Baumeister, 2000; Diamond, 2007; Kinnish, Strassberg, & Turner, 2005). For example, both heterosexual and sexual minority women show genital and subjective arousal to both male and female sexual stimuli, whereas heterosexual men are more aroused by female than male sexual stimuli, and homosexual men show the opposite pattern (Chivers, Rieger, Latty, & Bailey, 2004). As such, I expected women's fluidity to be expressed by endorsing more same-sex attractions than men.

ii. I predicted that their scores would not differ on other-sex attractions, with the exception of emotional attraction, which may be lower for men given that it is less permissible for men to express emotional attraction than it is for women. In addition, one noted stereotype of masculinity is that of nonrelational attitudes toward sexuality (Levant, 1992). Nonrelational sexuality refers to a constellation of attitudes and behaviors characterized by an experience of sexuality as lust, oriented towards physical attraction and an objectification of sexual partners (Korobov, 2006; Levant, 1997). Women, instead, are thought to place greater importance on the role of emotions in relationships (e.g., Fisher et al, 2002; Brody & Hall, 1993). As such, men may be less likely than women to endorse attractions that are emotional in nature.

b) Comparisons between gay men and lesbian women:

i. For gay men and lesbian women, I predicted that their scores on same-sex sexual and romantic attractions would not differ, and that men would endorse

lower emotional attraction than women, as gender norms dictate that same-sex emotional attraction is less permissible for men than women. As stated above, men are, stereotypically, less emotionally expressive and have nonrelational attitudes when it comes to relationships (Levant, 1992). In addition, sexual minority women have been found to place greater emphasis on emotional components of attraction (Diamond, 2000b).

ii. No predictions were made for other-sex attractions; these differences were examined in an exploratory fashion as there is little theory or research upon which to base predictions.

c) Comparisons between heterosexual and lesbian women:

i. I predicted that heterosexual women would have lower scores than lesbian women on all same-sex attractions, particularly sexual and romantic attractions. For emotional attraction, I predicted that heterosexual women would score lower, but that this attraction would be the most similar (as indicated by a smaller effect size than for those of sexual and romantic attractions), as women are taught to have emotionally close relationships with other women (e.g., Feingold 1994; Walker, 1994). Anecdotally, young women often endorse “girl crushes,” which refer to feelings of admiration/adoration in a non-sexual context (www.urbandictionary.com/define.php?term=girl+crush). An article in the New York Times (Rosenbloom, 2005) highlighted the popularity of such non-sexual attractions among women in their twenties and thirties. As such, same-sex emotional attraction was predicted to be the most similar attraction between heterosexual and lesbian women.

ii. Consistent with sex and sexual orientation norms, I predicted that heterosexual women would have higher scores on other-sex attractions, particularly sexual and romantic attractions. As above, I explored differences on emotional attraction because of women’s fluidity, particularly in regarding non-sexual attractions (Diamond, 2002; 2007; Laumann et al., 1994). I hypothesized that heterosexual and lesbian women would both endorse other-sex emotional attraction, and that this would be the most similar score in terms of other-sex

attractions, but that heterosexual women would endorse slightly greater other-sex emotional attraction than lesbian women.

d) Comparisons between heterosexual and gay men:

i. I predicted that heterosexual men would have lower scores than gay men on all types of same-sex attractions. I made this prediction because it is socially unacceptable for men to endorse same-sex attractions of any kind (Levant, 1992; Levant & Pollack, 1995), particularly those that are sexual or romantic in nature. Indeed, some researchers have said that to be male is to be homophobic (Herek, 1986). Given the stigma of endorsing same-sex attractions, it was expected that only gay men would endorse same-sex attractions. Additionally, given the de-emphasis on emotionality for men (e.g., Levant, 1992), I predicted that heterosexual men would be consistent with such male norms and not endorse same-sex emotional attraction. For gay men, however, I predicted that they would endorse same-sex attractions of all types, consistent with norms for their sexual minority identity.

ii. In terms of other-sex attractions, I predicted that heterosexual men would have higher scores on other-sex sexual and romantic attractions, consistent with sex and sexual orientation norms. For emotional attraction, I explored differences. Because nonrelational attitudes toward relationships with women may be less strong among sexual minority men, gay men may endorse other-sex emotional attraction at a similar level to heterosexual men. Anecdotal evidence demonstrates the strong relationships between gay men and heterosexual women (Kleinberg, 1988). Given this, sexual minority men may exhibit emotional attractions to women similar to those experienced by heterosexual men.

2. How and for whom are the different types of attractions associated with psychological distress?

Among all participants, I predicted that, on average, greater same-sex sexual attraction would be associated with greater distress, compared to same-sex emotional and romantic attractions. Furthermore, I expected sex differences, such that same-sex attractions would be associated with psychological distress

for men to a greater extent than they are for women. I predicted such differences because violating sex norms is less tolerable and has more severe consequences for men than women (Kite & Whitley, 1996; Levant, 1992; Levant & Pollack, 1995).

Specifically, for men, I predicted that same-sex attractions (particularly sexual) would be associated with psychological distress because gender role transgressions are not well tolerated in males (Herek, 1984, 1994; Sirin et al., 2004). As Levant (1996) has noted, men have been socialized to be emotionally stoic and to reject or even fear homosexuality (among men). As such, endorsing any same-sex attraction is considered taboo. In line with this, as O'Neil, Good, & Holmes (1995) note restrictive emotionality and restrictive affectionate behavior between men are key domains of male gender role conflict. Gender role conflict is associated with poorer psychological well-being (e.g., depression, anxiety; Cournoyer & Mahalik, 1995; Zamarripa, Wampold, & Gregory, 2003). Indeed, according to Pleck's (1995) gender role strain paradigm, violating male gender role norms can lead to condemnation and negative psychological consequences (Levant, 1996). Therefore, I hypothesized that greater same-sex attractions of all types in men would be associated with greater distress.

For women, I predicted that same-sex sexual attractions would be associated with greater distress, although to a lesser degree than for males. I also predicted that same-sex romantic attractions would be associated with psychological distress (but to a lesser extent than same-sex sexual attractions), and that same-sex emotional attractions would not be associated with psychological distress. The rationale is that same-sex sexual attraction is the least permissible behavior from the perspective of sex norms and the norm of heterosexuality, whereas romantic attraction, and emotional attraction in particular, may be more permissible for women. Emotional attraction may even have benefits for women. For example, based on a prior study (Yoneda & Davila, 2006), we found that greater same-sex emotional attraction was associated with greater psychological well-being for adolescent girls. Additionally, as previously

mentioned, “girl crushes” are becoming socially normative, which may reduce the stigma and related consequences.

3. Moderators of same-sex sexual attraction and psychological well-being

Additionally, I also examined three moderators of the relationship between same-sex sexual attraction and psychological well-being: age, race, and gendered traits (masculinity and femininity). No predictions were made for age or race. Age was examined as a possible moderator given that people may place more or less emphasis on sexual (versus non-sexual) attractions at different ages (e.g., DeLamater & Sill, 2005; Levine, 1987), and as such it may be more stigmatizing for older individuals, for example, to endorse greater same-sex attractions than for younger individuals. Furthermore, the few studies that have looked at different types of same- and other-sex attractions have focused on adolescent and young adult populations (e.g., Narring et al., 2003). Race was examined as a possible moderator as it is an important, often salient, social identity (e.g., Frable, 1997). Researchers have highlighted the importance of examining the intersection of identities, rather than looking at one identity (e.g., sexual orientation) while ignoring others (e.g., Blackwood, 2000; Frable, 1997). As such, looking at the possible moderating effect of race may shed light onto the intersection of race and same-sex attractions on psychological well-being. Lastly, I looked at femininity and masculinity as moderators. Given that masculinity is associated with being male, and thus prohibitive of homosexuality (e.g., Levant, 1992; 1996), I predicted that among those who were higher in masculinity, endorsement of greater same-sex sexual attractions would predict poorer psychological well-being. Conversely, femininity is associated with being female, which is more permissible in terms of non-heterosexuality (e.g., Rust, 2000). Thus, among those with greater femininity, greater same-sex sexual attractions would predict better psychological well-being. These predictions were made for both men and women, as no sex differences were expected.

II. METHOD

Participants and Procedure

The university's Committee on Research Involving Human Subjects approved this research project. A total of 673 men and women completed the online survey. For the purposes of this study, 141 participants were excluded from analyses, leaving a total sample of 532 participants. Participants who identified their sexual orientation as "bisexual" ($n = 60$) and "other" ($n = 29$; e.g., queer, pansexual, asexual, unsure, questioning) were excluded from data analyses³, leaving 584 participants who identified as heterosexual, lesbian, or gay. Of these 584 participants, those whose biological sex differed from the sex they most strongly identified with were also excluded from analyses ($n = 21$ heterosexual men, $n = 5$ heterosexual women, $n = 4$ gay men, $n = 19$ lesbian women, $n = 3$ participants who had missing data for biological sex or sex they identified with), leaving a total of 532 lesbian, gay, and heterosexual participants. In terms of sexual orientation, 244 participants identified as heterosexual (109 men, 135 women), 163 as lesbian, and 125 as gay (male). Ages ranged from 18 to 68 years ($M = 32$, $SD = 11.07$). At the time of survey completion, 57.9% ($n = 308$) were in a romantic relationship. Seventy percent ($n = 373$) of participants identified as Caucasian/White, 7.7% ($n = 41$) as Latino/Hispanic, 5.1% ($n = 27$) as African American/Black, 4.3% ($n = 23$) as Asian American/Pacific Islander, 3.9% ($n = 21$) as bi/multiracial, about 1% ($n = 9$) as East Indian, 0.6% as Native American, and 5.6% ($n = 30$) as other. For further information on participant demographics (broken down by sex and sexual orientation), please see Table 1.

All participants were recruited from email (19.5%) and online advertisements (80.5%). For email recruitment, the investigator emailed friends and colleagues asking for individuals aged 18 years and older to participate in an anonymous online dissertation study offering free (optional) individualized

³7 of the 60 individuals who identified as bisexual and 4 individuals who identified as "other" indicated a biological sex/ID sex mismatch.

feedback; the email also asked that people forward it to help with recruitment (see Appendix A for email example). For online recruitment, 55% were recruited through Facebook.com. This included personal posts by the investigator (visible to her friends) asking for individuals 18 years and older to participate, as well as posts by friends of the investigator (visible to anyone who could see the respective friends' profiles), and paid advertisements on Facebook.com. Personal Facebook posts and paid Facebook advertisements could not be differentiated, as participants indicated that they were recruited from "Facebook" and did not specify further (i.e., Facebook advertisement vs. friend's post). Additionally, 7.7% were recruited through Craigslist.org, 7.5% through listservs (e.g., Lesbian Life, Oasis, NJ gay dads, Mahu network), 3.9% through the University of Rochester's couples research website, 3.6% from Google AdWords, and 2.7% did not indicate the source of referral. Announcements for the study specified that researchers at Stony Brook University were seeking individuals 18 years of age or older to participate in a study on dimensions of attraction. Advertisements included general ads that did not specify sexual orientation, as well as advertisements targeting lesbian women and gay men (see Appendix B for examples). All questionnaires were completed online. As incentive to complete the survey, participants were offered individualized feedback on self-esteem, extraversion, openness to new experiences, and romantic attachment security. Participants had the option to receive or decline feedback at the end of the survey. They also had the option to provide the researchers with feedback and comments about their experience of completing the survey and thoughts about the feedback.

Measures

Attractions. Same-sex and other-sex emotional, romantic, and sexual attractions were assessed with two questionnaires designed by the investigators, as no standard measures currently exist. One questionnaire (Attractions I) served as the primary measure of attractions, and the second questionnaire (Attractions II) was used to validate the first measure. See Appendix C for Attractions I and II. Correlations between attractions questionnaires (specific items and subscales)

are presented in Tables 2 – 5. All tables include correlations across all participants, as well as correlations as a function of sexual orientation identity by sex.

Attractions I. The Attractions I questionnaire was developed based on theory (e.g., Diamond’s (2003a) biobehavioral model, Fisher’s (1998) three emotion-motivation systems) and pilot work conducted by the author. The pilot work consisted of two informal studies. In the first pilot study, graduate students and advanced undergraduates ($n = 16$) were asked in open-ended questions to define emotional, romantic, and sexual attractions. All students (males and females of mixed sexual orientations) consistently defined emotional attraction as a desire to confide in and feel “connected to” a person, romantic attraction as a “yearning” or longing to be with a person, and sexual attraction as a physiological attraction. Based on this pilot study and the aforementioned theories, a preliminary Attractions I questionnaire was developed. Due to concern that the wording was too “feminine,” or that heterosexual men might not relate to some of the words, a second pilot study was conducted with heterosexual men ($n = 14$) who were friends and acquaintances of the author. Heterosexual men were instructed to complete the Attractions I questionnaire and then asked open-ended questions, including what they thought about the items and specific wording, and if they could relate to the questions. Pilot participants said that they could relate to the questions, different types of attractions, and the majority of the words with two exceptions—about half of the participants objected to the word “connectedness” used in the emotional attraction question, and the word “yearning” used in the romantic attraction question. Based on this feedback, “connectedness” was replaced with “closeness” and the word “yearning” was removed.

The final Attractions I questionnaire, used in the present study, consisted of three items assessing attractions to women and three items assessing attractions to men. Items were rated on a 7-point Likert scale (1 = *not at all* to 7 = *very strongly*) separately for attractions to men and women. Participants were instructed to answer all of the questions regardless of their sex or sexual

orientation. Emotional attraction was assessed with the following item: Rate the degree to which you currently feel emotionally attracted (e.g., a sense of mutual understanding, support, intimacy, and closeness) to (men/women); romantic attraction was assessed with the item: Rate the degree to which you currently feel romantically attracted (e.g., a sense of longing or desire to be with) to (men/women); and sexual attraction was assessed with the item: Rate the degree to which you currently feel sexually attracted (e.g., feeling physiologically aroused, having sexual fantasies) to (men/women). Each item was then converted to a same-sex or other-sex attractions item, based on each participant's biological sex. Correlations among all Attractions I items are presented in Table 2; means and standard deviations for each item are presented in Table 6.

Attractions II. Attractions II consisted of 10-items. Items were rated on a 9-point scale (1 = *not at all true of me* to 9 = *extremely true of me*). Participants completed the 10-item questionnaire twice, once answering in regards to women and once in regards to men. Participants were asked to think of all of their relationships with women/men, including romantic relationships, friendships, and acquaintanceships, and then instructed to answer the questions considering present and past relationships towards the respective sex. Five of the ten items were intended to assess emotional attraction (Attractions II—Emotional), and five to assess romantic attraction (Attractions II—Romantic). Example emotional attraction questions include “I want to confide virtually everything in her/him” and “I want us to really understand each other.” Example romantic attraction items include “S/he always seems to be on my mind,” and “When I can't be with him/her, I really miss him/her.” Items were converted into same-sex or other-sex variables, consistent with each participant's biological sex. Same-sex and other-sex Attractions II—Emotional and Romantic subscale scores were computed by taking the total score for the five same-sex and other-sex items, respectively. Scores ranged from 5 to 45, with greater scores indicating greater attraction. Cronbach's alphas were as follows: Attractions II—Emotional $\alpha = .97$ for same-sex and $\alpha = .97$ for other-sex, and Attractions II—Romantic $\alpha = .98$ for same-sex

and $\alpha = .98$ for other-sex, respectively. Correlations for same-sex Attractions II items and subscales are presented in Table 3, and correlations for other-sex Attractions II items and subscales are presented in Table 4 (same-sex and other-sex correlations were not presented together due to the large number of items). Means and standard deviations for Attractions II subscales (same-sex and other-sex) are presented in Table 6.

Composite scores. Same-sex and other-sex Attractions I—Emotional and Romantic items were significantly related to same-sex and other-sex Attractions II—Emotional and Romantic subscale scores (see Table 5). As such, composites were created for same-sex and other-sex emotional and romantic attractions. To create composite variables, scores for the two measures were standardized and their respective means were computed. All analyses were conducted, separately, for Attractions I, Attractions II, and the composite variables (of Attractions I and II). Because Attractions II did not assess sexual attraction, it was always measured with Attractions I.

Psychological distress. As described in the introduction, four indicators of psychological distress were chosen: depressive symptoms, loneliness, self-esteem, and social anxiety.

Depressive symptoms were assessed with the widely used Beck Depression Inventory-IA (BDI-IA⁴; Beck & Steer, 1993). The BDI-IA consists of 21 questions assessing cognitive, somatic, and affective aspects of depression for the past two weeks. Items are rated on a 0 – 3 scale with total scores ranging from 0 to 63, with higher scores reflecting greater severity of depression. The BDI-IA has demonstrated strong psychometric properties (e.g., Beck, Steer, Ball, & Ranieri, 1996). In the present sample, Cronbach's $\alpha = .91$.

Loneliness was measured with the Revised UCLA Loneliness Scale-Version 3 short-form (Russell, 1996). It is a 10-item self-report questionnaire that has good validity properties and high internal consistency (Russell, 1996). Items

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are rated on a four-point Likert scale ranging from 1 = *never* to 4 = *always*, with greater scores indicating more loneliness. Example items include “How often do you feel left out?” and “How often do you feel that there are people who really understand you?” (reverse-scored). In the present study, Cronbach’s $\alpha = .90$.

Global self-esteem was assessed using the well-established 10-item Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965). Respondents were asked to rate themselves using a four-point scale (1 = *strongly agree* to 4 = *strongly disagree*) on questions such as, “On the whole, I am satisfied with myself.” For the purposes of this study, scores were reverse-coded such that higher scores indicated greater self-esteem. Cronbach’s α for the present sample was .89.

The Brief Fear of Negative Evaluation scale-revised (Carleton, McCreary, Norton, & Asmundson, 2006; Leary, 1983; BFNE-II) was used to assess social anxiety. The BFNE-II is a 12-item self-report questionnaire. Items are rated on a 5-point Likert scale (0 = *not at all characteristic of me* to 4 = *extremely characteristic of me*). Example items include “I worry about what kind of impression I make on people” and “Sometimes I think I am too concerned with what other people think of me.” Cronbach’s α for the present sample was .97.

Demographics. Participants reported their biological sex (male/female), the sex they most strongly identify with (male/female), their self-identified sexual orientation, ethnicity/race, highest level of education completed, income, number of children, employment status, current relationship status, and relationship history. Additionally, participants completed information about the average amount of time they spend online each day/week, their geographic location, area of habitation, and profession. Demographics (broken down by sex and sexual orientation) are presented in Table 1.

Additional variables. In addition to the attractions questionnaires, indicators of psychological distress, and basic demographics, the following were also assessed: gendered traits and friendship desire.

Gendered traits. Gendered traits were assessed via the Bem Sex Role Inventory (BSRI; Bem, 1974), a widely used, reliable and valid measure (e.g.

Antill, 1983; Gaunt, 2006). The BSRI consists of 60 personality characteristics. For each characteristic, participants are asked to rate themselves using a 7-point Likert scale ranging from 1 (*never or almost never true*) to 7 (*always or almost always true*). Twenty of the characteristics are stereotypically feminine (e.g., affectionate, sympathetic), 20 are stereotypically masculine (e.g., independent, dominant), and 20 are gender-neutral filter items (e.g., truthful, conscientious). The 20 neutral items are used to constitute a measure of Social Desirability—10 items are considered desirable for both sexes (e.g., adaptable), and 10 items are considered undesirable for both sexes (e.g., jealous). Only masculine and feminine items and scores were utilized in the present study. The mean for each scale is taken; scores range from 1 to 7, with greater scores indicating greater femininity and masculinity, respectively. Cronbach's $\alpha = .89$ for masculinity and $.83$ for femininity.

Friendship desire. Desire for friendships was assessed with a questionnaire designed by the investigators, as no established measure could be found (see Appendix C for questionnaire). The Friendship Desire Questionnaire consists of five items. Participants completed the questionnaire twice, once about male friends and once about female friends. Items were rated on a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*); scores ranged from 5 to 25, with higher scores indicating greater friendship desire. Participants were instructed to answer questions about how they typically feel/act towards male/female friends in general. Items included: "I want my male/female friends to be independent and not need me" (reverse coded); "Truthfully, friendships with men/women are just not that important me" (reverse coded); "I want to be emotionally close with male/female friends;" "I like to spend time doing things (e.g., activities) with male/female friends;" and "I want to confide in my male/female friends and have them confide in me." Cronbach's $\alpha = .85$ for male friendship desire, and $.80$ for female friendship desire.

Feedback measures. As incentive to complete the survey, participants were offered optional feedback on romantic attachment, personality characteristics, and self-esteem. Self-esteem was assessed with the Rosenberg

Self-esteem Scale (RSE; Rosenberg, 1965); this measure was previously described in the section on psychological distress variables. As the other variables were not a central part of the present study, these measures are described below. Examples of feedback are presented in Appendix D.

Romantic attachment styles. Participants completed the 18-item Revised Adult Attachment Scale (RAAS; Collins & Read, 1990; Collins, 1996), a well-known and commonly used measure with good psychometric properties (e.g., Collins & Feeney, 2004). Participants were asked to rate their feelings about romantic relationships in general. Sample items include “I find it relatively easy to get close to others,” “I often wonder whether my partner really cares about me,” and “I find that people are never there when you need them.” Items are rated on a 5-point Likert scale ranging from 1 = *not at all characteristic of me* to 5 = *very characteristic of me*. The RAAS includes three subscales: Close, which measures the extent to which people feel comfortable being close to others; Depend, which measures the extent to which people are comfortable relying on others, and believe that others are dependable; and Anxiety, which assesses fears about abandonment and of being unloved. The close and depend subscales tap aspects of avoidance of intimacy. As such, their mean was computed as a measure of comfort with intimacy (low scores = avoidance of intimacy). The anxiety subscale was reverse coded such that lower scores equal higher attachment anxiety (or lower confidence that others will be there). Cronbach’s $\alpha = .83$ for comfort with intimacy subscale and $.81$ for anxiety subscale. Participants were provided with feedback on romantic attachment anxiety and avoidance.

Personality traits. Extraversion, agreeableness, conscientiousness, emotional stability (neuroticism), and openness to experiences were measured with the Ten-item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003), a 10-item scale containing two descriptors per item designed to measure each pole of the Big Five Personality model. Items are preceded by the statement, “I see myself as...” with extraversion items “extraverted, enthusiastic” and “reserved, quiet” (reverse coded), agreeableness items “critical,

quarrelsome” (reverse coded) and “sympathetic, warm,” conscientiousness items “dependable, self-disciplined” and “disorganized, careless” (reverse coded), emotional stability items “anxious, easily upset” (reverse coded) and “calm, emotionally stable,” and openness to experience items “open to new experiences, complex” and “conventional, uncreative” (reverse coded). Each item is scored on a Likert scale ranging from 1 = *disagree strongly* to 7 = *agree strongly*; the mean from each pair provides the respective scale score. In the present sample, Cronbach’s α s for each scale are as follows: extraversion = .70; agreeableness = .35; conscientiousness = .60; emotional stability = .60; and openness to new experiences = .41. These are similar to Cronbach’s alphas from other samples (e.g, Gosling et al., 2003). Participants were provided with feedback on openness to new experiences and extraversion.

III. RESULTS

Validation of Attractions I Questionnaire

To examine the validity of the Attractions I questionnaire, I first looked at the zero-order correlations among Attractions I items, Attractions II items, and the correlations between Attractions I items and Attractions II subscales. As can be seen in Tables 2 - 5, all same-sex and other-sex items, respectively, were significantly related, as were the subscale scores.

Next, I compared the correlations between Attractions I—Emotional and Romantic items with Attractions II—Emotional and Romantic subscale scores, respectively. Comparisons were made using the approach recommended by Meng, Rosenthal, and Rubin (1992) for comparing the difference between two correlations drawn from the same sample, sharing one variable. For same-sex emotional attractions, the correlation between Attractions I—Emotional and Attractions II—Emotional was significantly stronger than the correlation between Attractions I—Emotional and Attractions II—Romantic ($Z = 4.03, p < .001$). For same-sex romantic attractions, the correlation between Attractions I—Romantic and Attractions II—Romantic was significantly stronger than the correlation

between Attractions I—Romantic and Attractions II—Emotional ($Z = -9.59, p < .001$). These results support the convergent validity of the same-sex Attractions I questionnaire, suggesting emotional and romantic attractions are tapping the intended constructs as assessed by Attractions II. They also provide support for discriminant validity, as Attractions I—Emotional was more strongly associated with Attractions II—Emotional than it was to Attractions II—Romantic, and vice versa, Attractions I—Romantic was more strongly associated with Attractions II—Romantic than it was to Attractions II—Emotional. For other-sex attractions, there was no significant difference between the Attractions I—Emotional and Attractions II—Emotional correlation, and the Attractions I—Emotional and Attractions II—Romantic correlation ($Z = 1.50, p = .13$). However, for other-sex romantic attractions, the relationship between Attractions I—Romantic and Attractions II—Romantic was significantly stronger than the relationship between Attractions I—Romantic and Attractions II—Emotional ($Z = -6.10, p < .001$). Thus, for other-sex attractions, there was mixed support for the Attractions I questionnaire. It appears that Attractions I—Romantic is tapping the intended domain (as measured by Attractions II), but Attractions I—Emotional is related to both romantic and emotional attractions as measured by Attractions II, and is thus not discriminating between the two types of attractions. Possible reasons as to why will be addressed in the discussion section.

I further examined validity as related to friendship desire. To do this, I examined the strength of the zero-order correlations between friendship desire and emotional and romantic attractions, respectively, with the strength of the emotional and romantic attractions correlation. To demonstrate convergent validity, emotional and romantic attractions should be highly correlated to one another, and to demonstrate discriminant validity, emotional and romantic attractions should be more highly correlated than friendship desire is correlated to either type of attraction. Although same-sex friendship desire was significantly related to same-sex Attractions I—Emotional ($r = .43, p < .001$) and Romantic ($r = .25, p < .001$) attractions, it was related to a lesser extent than same-sex Attractions I—Emotional and Romantic attractions were related ($r = .73, p <$

.001). Other-sex friendship desire was significantly related to other-sex Attractions I—Emotional ($r = .45, p < .001$) and Romantic ($r = .34, p < .001$) attractions, but to a lesser extent than other-sex Attractions I—Emotional and Romantic attractions are related ($r = .69, p < .001$). Thus, in support of convergent and discriminant validities, emotional and romantic attractions were strongly correlated, more so than either attraction was related to friendship desire.

Lastly, because friendship desire was significantly related to Attractions I—Emotional and Romantic attractions, I looked at the correlations between Attraction I items and the Attractions II subscales, controlling for friendship desire. For same-sex and other-sex emotional attractions, the relationship between the Attractions I—Emotional item and Attractions II—Emotional subscale was significant even after controlling for same-sex friendship desire ($pr = .93, p < .001, n = 499$ for same-sex and $pr = .90, p < .001, n = 497$ for other-sex). For same-sex and other-sex romantic attractions, the relationship between the Attractions I item and Attractions II—Romantic subscale was also significant after controlling for friendship desire ($pr = .96, p < .001, n = 499$ for same-sex and $pr = .94, p < .001, n = 498$ for other-sex). These partial correlations were stronger than the respective zero-order correlations between Attraction I items and Attraction II subscales (please see Table 5 for zero-order correlations), and provide support that the Attractions I—Emotional and Romantic items were tapping the intended constructs (as assessed by Attractions II subscales) above and beyond the related construct of friendship desire.

Research Question 1: To what degree do males and females of different sexual orientations report same-sex and other-sex emotional, romantic, and sexual attractions?

To examine the first research question, I first conducted a two-way between-groups multivariate analysis of variance (MANOVA) to investigate sex and sexual orientation differences in same-sex and other-sex attractions. A MANOVA was chosen as all of the dependent variables were significantly related (see Table 4). Six dependent variables were used: same-sex emotional

attraction, other-sex emotional attraction, same-sex romantic attraction, other-sex romantic attraction, same-sex sexual attraction, and other-sex sexual attraction. The independent variables were sex (male vs. female) and sexual orientation (heterosexual vs. sexual minority). Although the Attractions I questionnaire was the primary measure of same-sex and other-sex attractions, analyses were also conducted using the Attractions II questionnaire, as well as with the composite attraction scores as dependent variables. Results are presented for the primary analyses using Attractions Questionnaire I as the dependent variables. Given that the majority of findings using the Attractions II questionnaire and the composite scores as dependent variables paralleled the primary analyses, only results that differed will be reported.

Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with two violations noted. First, Box's test of equality of covariance matrices was significant (Box's $M = 9.53$, $p < .01$), implying that the assumption of equal covariances was not met. However, given that the groups were approximately of equal size (i.e., largest group size/smallest group size < 1.5), this violation should have minimal impact (Hair, Black, Babin, Anderson, & Tatham, 2006). Further, Pillai's Trace was used rather than the more common Wilks' Lambda, as Pillai's Trace is more conservative and should be used when assumptions are violated (Cohen, 2008). Second, for several of the dependent variables (same-sex emotional attraction, other-sex emotional attraction, other-sex romantic attraction, and same-sex sexual attraction, respectively), Levene's Test of Equality of Error Variances was significant ($p < .05$), suggesting that these dependent variables violated the assumption of equality of variance. As recommended by Tabachnick and Fidell (2007), a more stringent alpha level ($p = .025$) was used for univariate F-tests for the respective dependent variables. When there were significant multivariate effects (Pillai's Trace criterion), separate analyses of variance (ANOVA) were conducted on each dependent variable to determine the source of the effect. Post hoc tests could not be performed as the independent variables each had fewer than three

groups. Given this constraint, a follow-up series of independent samples *t*-tests were conducted for dependent variables. Cohen's *d* is also reported to further examine the difference between group means.

Results of the MANOVA showed significant main effects for sex (Pillai's Trace = .249, $F(6, 519) = .28.65$, $p < .001$) and sexual orientation, (Pillai's Trace = .927, $F(6, 519) = 1094.68$, $p < .001$), as well as a significant interaction between sex and sexual orientation (Pillai's Trace = .154, $F(6, 519) = 15.69$, $p < .001$). Analyses using Attractions II and the composite scores as the dependent variables were consistent with these findings.

Analyses of Variance (ANOVA) for each significant dependent variable were conducted as follow-up tests to the MANOVA. Using the Bonferroni method of adjusting Type I error for multiple comparisons, each ANOVA was tested at the .01 level. Sex (male vs. female) and sexual orientation (heterosexual vs. sexual minority) were again entered as fixed level independent variables. Results for each ANOVA are presented in Table 7.

As can be seen in Table 7, the sexual orientation main effect was significant for all same-sex and other-sex attractions. Analyses using Attractions II and the composite scores as the dependent variables (not presented in Table 7) were consistent with these findings.

Looking at the main effect of sex, results across ANOVAs were mixed. There was a significant main effect of sex for same-sex and other-sex emotional attractions and same-sex romantic attractions. There was no main effect of sex for other-sex romantic and same-sex and other-sex sexual attractions. Analyses using the Attractions II subscales and the composite scores as the dependent variables were consistent with these findings, with one exception. For other-sex emotional attraction, the main effect of sex was not significant when the Attractions II—Emotional subscale was used as the dependent variable.

Turning now to the Sex x Sexual Orientation interaction, a significant interaction emerged for same-sex and other-sex emotional attractions and same-sex sexual attractions; the interaction was not significant for same- and other-sex romantic and other-sex sexual attractions. Interestingly, although the Sex x

Sexual Orientation interaction was not significant for same-sex and other-sex romantic attractions as measured by the Attractions I questionnaire, the interaction was significant for both same-sex romantic $F(1, 513) = 30.83, p < .001$), and other-sex romantic attractions, $F(1, 109) = 24.77, p < .001$), when Attractions II and the composite scores ($F(1, 513) = 23.86, p < .001$) and $F(1, 507) = 22.66, p < .001$), for same-sex and other-sex romantic attractions, respectively) were used as dependent variables.

Next, a series of independent samples *t*-tests were conducted as post hoc analyses in order to examine significant findings from the ANOVAs. In order to do this, the output file was split first by sexual orientation, to examine differences between heterosexual men and women, and differences between sexual minority men and women, and then split by sex to examine differences between heterosexual and lesbian women, and gay and heterosexual men. The Bonferroni method was again applied; each *t*-test was set at the .008 level. Means and standard deviations for each attraction are presented in Table 6; effect sizes are presented in text. Results are presented by sex and sexual orientation, rather than for each dependent variable, as this is consistent with the research questions.

For heterosexual individuals, I predicted that heterosexual women would score higher than heterosexual men on all same-sex attractions. Consistent with the prediction, heterosexual women reported greater same-sex emotional ($t(2, 242) = -8.98, p < .008$; Cohen's $d = -1.15$), romantic ($t(2, 235.75) = -2.92, p < .008$; Cohen's $d = -0.38$), and sexual ($t(2, 240.55) = -3.61, p < .008$; Cohen's $d = -0.47$) attractions, with the largest effect size for same-sex emotional attractions. For other-sex attractions, I predicted that no differences would exist for other-sex romantic and sexual attractions, and that heterosexual women would report slightly greater other-sex emotional attraction than heterosexual men. In support of this, there were no significant differences between heterosexual men and women on other-sex romantic ($t(2, 194.77) = -.573, p > .008$; Cohen's $d = -0.08$) or sexual ($t(2, 243) = 1.04, p > .008$; Cohen's $d = 0.13$) attractions. There was also no significant difference for other-sex emotional attraction as measured by

the Attractions I questionnaire ($t(2, 243) = 2.59, p > .008$; Cohen's $d = 0.33$), nor when measured by the composite other-sex emotional attraction score ($t(2, 241) = -.036, p > .008$; Cohen's $d = 0.005$). However, when other-sex emotional attraction was assessed with the Attractions II questionnaire, a significant difference emerged such that women endorsed slightly greater other-sex emotional attraction than men ($t(2, 181.136) = -3.28, p < .008$; Cohen's $d = -0.49$). Overall, the predictions for heterosexual men and women were supported; women endorsed significantly more same-sex attractions than men did, and there were no significant differences between men and women for other-sex attractions, with the exception of other-sex emotional attraction (as measured by Attractions II).

For sexual minority men and women, I predicted that no differences would exist for same-sex romantic and same-sex sexual attractions. There was no significant difference between sexual minority men and women on same-sex romantic attraction ($t(2, 285) = -.427, p > .008$; Cohen's $d = -0.05$). However, gay men endorsed significantly more same-sex sexual attraction than lesbian women endorsed ($t(2, 265.30) = 2.67, p = .008$; Cohen's $d = 0.33$). For same-sex emotional attraction, I predicted that lesbian women would endorse slightly greater same-sex emotional attraction than gay men would endorse. Lesbian women endorsed significantly more same-sex emotional attraction than gay men endorsed when the Attractions I—Emotional item ($t(2, 180.211) = -5.92, p < .008$; Cohen's $d = -0.88$) and the same-sex emotional attraction composite score ($t(2, 232.027) = -3.92, p < .008$; Cohen's $d = -0.51$) were used. However, when the Attractions II—Emotional subscale was used, this difference was not significant ($t(2, 277) = -.599, p > .008$; Cohen's $d = -0.07$). Turning next to other-sex attractions, no predictions were made. Sexual minority men endorsed greater other-sex emotional attraction ($t(2, 200.66) = 7.98, p < .008$; Cohen's $d = 1.127$), and greater other-sex romantic attraction ($t(2, 199.75) = 2.67, p = .008$; Cohen's $d = 0.38$) than sexual minority women endorsed. There was not a significant difference for other-sex sexual attractions ($t(2, 283.76) = -1.99, p > .08$; Cohen's $d = -0.24$). In sum, the predictions for sexual minority men and women received

mixed support. As predicted, no difference emerged for same-sex romantic attraction, and lesbian women endorsed greater same-sex emotional attraction than men, according to the primary measure of attractions. Contrary to predictions, gay men endorsed greater same-sex sexual attraction than lesbian women endorsed.

Lastly, I examined differences between heterosexual and lesbian women, and heterosexual and gay men. Two independent samples *t*-tests were conducted (lesbian women vs. heterosexual women and gay men vs. heterosexual men). I predicted that lesbian women and gay men would endorse significantly greater same-sex emotional, romantic, and sexual attractions than heterosexual women and heterosexual men, respectively, and conversely, that heterosexual women and heterosexual men would endorse significantly greater other-sex emotional, romantic, and sexual attractions than lesbian women and heterosexual men. Additionally for women, I predicted that lesbian and heterosexual women would be most similar in terms of their endorsement of same-sex and other-sex emotional attractions (i.e., smallest effect size of the three types of attractions). All predictions were supported. Lesbian women endorsed significantly greater same-sex emotional ($t(2, 156.97) = -13.07, p < .008$; Cohen's $d = -2.07$), same-sex romantic ($t(2, 296) = -44.96, p < .008$; Cohen's $d = -5.23$), and same-sex sexual attractions ($t(2, 219.82) = -35.41, p < .008$; Cohen's $d = -4.78$) than heterosexual women endorsed; and heterosexual women endorsed significantly greater other-sex emotional ($t(2, 296) = 23.89, p < .008$; Cohen's $d = 2.78$), other-sex romantic ($t(2, 253.83) = 46.79, p < .008$; Cohen's $d = 5.87$), and other-sex sexual attractions ($t(2, 296) = 37.32, p < .008$; Cohen's $d = 4.34$) than lesbian women. In both comparisons, the smallest effect size was for emotional attractions, which was consistent with predictions, but it was still a very large effect. For men, gay men endorsed significantly greater same-sex emotional ($t(2, 175.67) = -19.28, p < .008$; Cohen's $d = -2.91$), same-sex romantic ($t(2, 232) = -46.69, p < .008$; Cohen's $d = -6.13$), and same-sex sexual ($t(2, 139.36) = -45.14, p < .008$; Cohen's $d = -7.65$) attractions than heterosexual men, and heterosexual men endorsed greater other-sex emotional

($t(2, 227.44) = 10.75, p < .008$; Cohen's $d = 1.43256$), other-sex romantic ($t(2, 231) = 27.11, p < .008$); Cohen's $d = 4.76$), and other-sex sexual ($t(2, 232) = 36.67, p < .008$; Cohen's $d = 4.82$) attractions than gay men.

Research Question 2: How and for whom are the different types of attractions associated with psychological distress?

All participants. I predicted that for all participants—women and men, sexual minorities and heterosexuals—greater same-sex sexual attraction would be associated with greater distress, and this relationship would be stronger for same-sex sexual attractions than same-sex romantic and same-sex emotional attractions. Depressive symptoms, loneliness, self-esteem, and social anxiety were used as indicators of psychological distress. I first examined zero-order correlations, and then looked at correlation comparisons using the approach recommended by Meng et al. (1992) for comparing the difference between two correlations drawn from the same sample, sharing one variable.

Zero-order correlations between attractions variables and indicators of psychological distress are presented in Table 8. Correlations are presented across all participants, as well as separately for heterosexual men and women, and sexual minority men and women, respectively. Only correlations across all participants are discussed in this section. As can be seen in Table 8, the prediction that greater same-sex attractions would be associated with greater psychological distress (across all participants) was partially supported. Greater same-sex sexual attraction was associated with more loneliness, and greater same-sex romantic attraction was associated with more loneliness and more social anxiety. Greater same-sex emotional attraction, as measured by the Attractions II—Emotional subscale and the attractions composite score, was associated with more social anxiety. There were no significant associations between same-sex attractions and depressive symptoms or self-esteem. Interestingly, greater other-sex attractions were associated with less psychological distress, namely depressive symptoms and loneliness. Greater other-sex emotional attraction was associated with significantly less depressive symptoms and less loneliness; greater other-sex romantic and sexual attraction

was associated with significantly less loneliness, and greater other-sex emotional attraction was associated with greater self-esteem.

Next, I examined correlation comparisons for different types of same-sex attractions and indicators of psychological distress. Although the zero-order correlations between same-sex attractions and depressive symptoms and self-esteem were not statistically significant, I still examined the strength of the different types of same-sex attractions and these indicators of psychological distress to see if such differences existed despite the lack of significance; limitations of this will be addressed in the discussion. First, comparing same-sex sexual attraction to same-sex emotional attraction, there was a significant difference for depressive symptoms ($Z = -3.36$, $p < .001$) and loneliness ($Z = -3.59$, $p < .001$); these findings were consistent across Attractions I, Attractions II, and composite scores. For social anxiety, there was no significant difference when Attractions I was used to assess attractions ($Z = .15$, $p = .88$), but there was a significant difference when Attractions II ($Z = -1.95$, $p < .05$) and the composite scores ($Z = -2.21$, $p < .05$) were used to assess attractions. There was no significant difference for self-esteem ($Z = 1.56$, $p > .05$); results were consistent across attractions measures. In partial support of the hypothesis, the association between same-sex sexual attraction and depressive symptoms, loneliness, and social anxiety was stronger than the association between same-sex emotional attraction and these variables. For self-esteem, however, the associations with same-sex sexual and same-sex emotional attractions did not differ. Next, I compared same-sex sexual attraction to same-sex romantic attraction. When Attractions I was used to assess attractions, no significant differences emerged (depressive symptoms $Z = -.89$, $p > .05$; loneliness $Z = -1.34$, $p > .05$; social anxiety $Z = .43$, $p > .05$; self-esteem $Z = .60$, $p > .05$). However, when the Attractions II—Romantic subscale and the composite romantic scores were used, there was a significant difference for loneliness ($Z = -3.02$, $p < .05$ for Attractions II, and $Z = -2.54$, $p < .05$ for composite, respectively), such that the association between same-sex sexual attraction and loneliness was significantly stronger than the association between same-sex romantic attraction

and loneliness. Given the high correlation between same-sex romantic and same-sex sexual attractions, it is not surprising that the majority of relationships were not significant.

In addition to comparing the differences between correlations, I also examined partial correlations in order to explore the relationship between same-sex sexual attraction and indicators of psychological distress, while controlling for same-sex emotional and same-sex romantic attractions, separately and together. Results are similar to those of the correlation comparisons described above. For depressive symptoms, there was a significant positive, partial correlation between same-sex sexual attraction and depressive symptoms, controlling for same-sex emotional attraction ($pr = .15$, $n = 492$, $p < .01$), but not when controlling for same-sex romantic attraction ($pr = .06$, $n = 494$, $p = .22$) or when controlling simultaneously for both same-sex emotional and romantic attractions ($pr = .06$, $n = 488$, $p = .18$). Results using the Attractions II questionnaire and composite scores were consistent with these findings. This is consistent with the results of the correlation comparisons, suggesting that the relationship between same-sex sexual attraction and depressive symptoms is stronger than the relationship between same-sex emotional attraction and depressive symptoms, and the relationship between same-sex sexual attraction and depressive symptoms exists (and is stronger than the zero-order correlation) when same-sex emotional attraction is partialled out. When same-sex romantic attraction is taken into consideration, however, there does not appear to be anything unique about the association between same-sex sexual attraction and depressive symptoms. Turning next to loneliness, there was a significant positive, partial correlation between same-sex sexual attraction and loneliness, controlling for same-sex emotional attraction ($pr = .18$, $n = 512$, $p < .001$), marginal significance when controlling for same-sex romantic attraction ($pr = .09$, $n = 513$, $p = .05$), and, when both same-sex emotional and same-sex romantic attractions were controlled for, the partial correlation between same-sex sexual attraction and loneliness was significant ($pr = .09$, $n = 512$, $p < .05$). Results were consistent when Attractions—II and the composite scores were used, with one minor

difference. Controlling for same-sex romantic attraction (as measured by Attractions I), the significance between same-sex sexual attraction and loneliness was marginally significant, whereas when the Attractions—II Romantic subscale and the romantic composite scores were used, the partial correlation between same-sex sexual attraction and loneliness was statistically significant ($pr = .168$, $p < .001$ and $pr = .145$, $p < .01$, for Attractions II—Romantic and composite score, respectively). Findings from the partial correlations are consistent with the results of the correlation comparisons, suggesting that the relationship between same-sex sexual attraction and loneliness is stronger than the relationship between same-sex emotional attraction and depressive symptoms, and the relationship between same-sex sexual attraction and loneliness exists (and is stronger than the zero-order correlation) when same-sex emotional attraction is partialled out. When same-sex romantic attraction is taken into consideration (as measured by the Attractions II questionnaire and the composite score), there still seems to be a unique relationship between same-sex sexual attraction and loneliness.

For social anxiety and self-esteem, there were no significant relationships between either of these indicators of psychological distress and same-sex sexual attractions after same-sex emotional and same-sex romantic attractions (separately and together) were partialled out of the relationships. This was consistent when the other measures of attractions were used. Overall, these findings are consistent with the correlation comparisons, as same-sex sexual attraction does not appear to be uniquely associated with social anxiety or self-esteem.

Sex differences. Next, I examined differences between the sexes. I predicted that greater same-sex attractions, particularly sexual, would be associated with greater psychological distress for men more so than for women (across sexual orientations). Since these correlations were from independent samples, I used Fisher's Z transformation (Fisher, 1970).

First, I examined sex differences in the associations between same-sex emotional attraction and indicators of psychological distress. The association

between same-sex emotional attraction and loneliness was significantly different for men and women ($Z = 2.68, p < .05$), but contrary to the prediction, greater same-sex emotional attraction was associated with greater loneliness for women more so than men. This finding was consistent when the other attractions measures were used. For social anxiety, the association between same-sex emotional attraction and social anxiety was also significantly different for men and women ($Z = 2.28, p < .05$), in the predicted direction. However, this finding did not hold when Attractions II ($Z = .59, p > .05$) or the composite score ($Z = 1.44, p > .05$) were used. No sex differences were found in the associations between same-sex emotional attraction and depressive symptoms ($Z = .591, p > .05$) or self-esteem ($Z = .66, p > .05$); these findings were consistent across attractions measures.

Next, I examined sex differences in the associations between same-sex romantic attraction and psychological distress. For loneliness ($Z = 2.94, p < .05$), depressive symptoms ($Z = 1.93, p < .05$), and social anxiety ($Z = 2.65, p < .05$), the association between same-sex romantic attraction and each indicator was significantly different for men and women. Contrary to the prediction, greater same-sex romantic attraction was associated with greater loneliness and depressive symptoms for women more strongly than it was for men. The sex difference in the relationship between same-sex romantic attraction and social anxiety was as predicted, with the association stronger for men than women. No sex differences were found in the associations between same-sex romantic attraction self-esteem ($Z = .57, p > .05$). Overall, results were consistent across attractions measures, with the exception of social anxiety. For social anxiety, no sex differences were significant when Attractions II ($Z = 1.60, p > .05$) and the composite score ($Z = 1.83, p > .05$) were used to assess same-sex romantic attraction.

Lastly, I examined sex differences in the strength of the associations between same-sex sexual attraction and indicators of psychological distress. The results mirrored those of same-sex romantic attraction. For loneliness ($Z = 2.67, p < .05$), depressive symptoms ($Z = 1.81, p < .05$), and social anxiety ($Z = 2.76, p$

< .05), the association between same-sex sexual attraction and each indicator was significantly different for men and women, all in the same directions as for same-sex romantic attraction and each of the indicators. There was again no sex difference for self-esteem ($Z = .32, p > .05$). Results were consistent across attractions measures.

Moderators. For the next set of analyses, I examined age, race, and gendered traits (masculinity and femininity, separately) as possible moderators of the relationship between same-sex sexual attraction and indicators of psychological distress. To do this I conducted a series of hierarchical linear regression analyses. On the first step of each analysis, other-sex emotional, romantic, and sexual attractions were entered as controls, as other-sex attractions were significantly related to same-sex attractions (see Table 2 for correlations of same-sex and other-sex Attractions I items). Same-sex romantic and emotional attractions were entered on the second step of each analysis, same-sex sexual attraction and the moderator variable were entered on the third step, and the interaction between same-sex sexual attraction and the respective moderator was entered on the fourth step. All predictor variables were centered.

I first looked at age as a moderator; no predictions were made. The Age x Same-sex Sexual Attraction interaction effect was not significant for loneliness ($\beta = -.04, t(509) = -.28, p = .779$), depressive symptoms ($\beta = .04, t(489) = .28, p = .783$), self-esteem ($\beta = -.094, t(509) = -.65, p = .516$), or social anxiety ($\beta = -.012, t(514) = -.08, p = .933$).

I next looked at race as a moderator; no predictions were made. Because 70% of the sample was White, race was looked at as a dichotomous variable (White vs. minority). The Race x Same-sex Sexual Attraction interaction effect was not significant for loneliness ($\beta = .05, t(503) = .614, p = .54$), depressive symptoms ($\beta = .08, t(485) = .957, p = .339$), self-esteem ($\beta = -.07, t(501) = -.906, p = .365$), or social anxiety ($\beta = -.04, t(508) = -.515, p = .607$).

Lastly, I looked at the moderating effects of masculinity and femininity. I predicted that masculinity would moderate the relationship between same-sex sexual attraction and psychological distress, such that among people with greater

masculinity same-sex sexual attractions would predict more distress. For femininity, I predicted that among people with greater femininity greater same-sex sexual attractions would predict less distress. Looking first at masculinity, the interaction between masculinity and same-sex sexual attraction was not significant for loneliness ($\beta = .02$, $t(473) = .344$, $p = .731$), depressive symptoms ($\beta = -.07$, $t(456) = -1.531$, $p = .127$), self-esteem ($\beta = .08$, $t(469) = 1.831$, $p = .068$), or social anxiety ($\beta = .03$, $t(469) = 1.831$, $p = .068$). Looking next at femininity, the Same-sex Sexual Attraction x Femininity interaction was not significant for loneliness ($\beta = -.02$, $t(484) = -.488$, $p = .626$), depressive symptoms ($\beta = .04$, $t(467) = .829$, $p = .408$), self-esteem ($\beta = .08$, $t(480) = 1.744$, $p = .082$), or social anxiety ($\beta = -.08$, $t(489) = -1.83$, $p = .068$).

Supplementary Analyses

Although not part of the original research questions or predictions, I also examined psychological well-being differences between heterosexuals and sexual minorities. Research has demonstrated that people who identify as sexual minorities report poorer well-being and greater distress than people who identify as heterosexual, which is likely due to additional stressors and stigma faced by sexual minorities (e.g., Mays & Cochran, 2001; Meyer, 2003). As such, I looked at differences in psychological distress between self-identified heterosexual and sexual minority individuals, as well as differences in the relationships among same-sex attractions and indicators of psychological distress.

I first conducted a two-way between-groups MANOVA to investigate sex and sexual orientation differences in psychological well-being. A MANOVA was chosen as all of the dependent variables were significantly related. Four dependent variables were used: loneliness, depressive symptoms, social anxiety, and self-esteem. The independent variables were sex (male vs. female) and sexual orientation (heterosexual vs. sexual minority).

Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with two violations noted. First, Box's test of equality of covariance matrices was significant (Box's $M = 44.95$, $p < .05$),

implying that the assumption of equal covariances was not met. However, given that the groups were approximately of equal size (i.e., largest group size/smallest group size < 1.5), this violation should have minimal impact (Hair et al., 2006). Further, Pillai's Trace was used rather than the more common Wilks' Lambda (Cohen, 2008). Second, for social anxiety, Levene's Test of Equality of Error Variances was significant ($p < .05$), suggesting that this dependent variable violated the assumption of equality of variance. As recommended by Tabachnick and Fidell (2007), a more stringent alpha level ($p = .025$) was used for univariate F-tests for social anxiety. When there were significant multivariate effects (Pillai's Trace criterion), separate analyses of variance (ANOVA) were conducted on each dependent variable to determine the source of the effect. Post hoc tests could not be performed as the independent variables each had fewer than three groups. Given this constraint, a follow-up series of independent samples *t*-tests were conducted for significant dependent variables. Cohen's *d* is also reported to further examine the difference between group means.

Results of the MANOVA showed a significant main effect for sex (Pillai's Trace = .023, $F(4, 449) = 2.69$, $p < .05$) but not for sexual orientation, (Pillai's Trace = .018, $F(4, 449) = 2.07$, $p = .084$). The interaction between sex and sexual orientation was significant (Pillai's Trace = .057, $F(4, 449) = 6.81$, $p < .001$).

Analyses of Variance (ANOVA) for each dependent variable were conducted as follow-up tests to the MANOVA. Using the Bonferroni method of adjusting Type I error for multiple comparisons, each ANOVA was tested at the .01 level. Sex (male vs. female) and sexual orientation (heterosexual vs. sexual minority) were again entered as fixed level independent variables. The sex main effect was significant only for loneliness ($F(1, 513) = 6.61$, $p < .01$), as was the sexual orientation main effect ($F(1, 513) = 11.65$, $p < .01$). The Sex x Sexual Orientation interaction was significant for loneliness ($F(1, 513) = 8.17$, $p < .01$) and social anxiety ($F(1, 517) = 8.47$, $p < .01$).

Next, I conducted a series of independent *t*-tests to examine sex and sexual orientation differences for loneliness and social anxiety. For loneliness,

the main effect of sexual orientation ($t(2, 511) = -3.68, p < .001$; Cohen's $d = -.33$) was such that sexual minorities ($M = 22.92, SD = 5.64$) endorsed significantly greater loneliness than heterosexuals ($M = 21.03, SD = 5.96$). The main effect of sex approached significance ($t(2, 511) = 2.28, p = .02$; Cohen's $d = .20$), with men ($M = 22.71, SD = .39$) reporting slightly more loneliness than women ($M = 21.53, SD = 5.82$). In order to examine the interaction between sex and sexual orientation, I split the file by sex and then sexual orientation. Between heterosexuals, heterosexual men ($M = 22.55, SD = 6.25$) reported more loneliness than heterosexual women ($M = 19.79, SD = 5.41$) ($t(2, 235) = 3.65, p < .001$; Cohen's $d = .48$). There was no difference between sexual minority men and women ($t(2, 274) = -.213, p = .83$; Cohen's $d = .02$). Comparing heterosexual and gay men, no differences between loneliness emerged ($t(2, 226) = -.364, p = .716$; Cohen's $d = -.05$). However, a significant difference was found between lesbian and heterosexual women ($t(2, 283) = -4.79, p < .001$; Cohen's $d = -.57$) such that lesbian women ($M = 22.98, SD = 5.77$) endorsed greater loneliness than heterosexual women ($M = 19.78, SD = 5.41$). The interaction between sex and sexual orientation is such that between heterosexuals, men report more loneliness than women, and between women, sexual minority women report more loneliness than heterosexual women.

I next examined the significant Sex x Sexual Orientation interaction for social anxiety. Between heterosexuals, heterosexual women ($M = 23.40, SD = 11.92$) reported more social anxiety than heterosexual men ($M = 18.95, SD = 12.99$), ($t(2, 235) = -2.74, p < .01$; Cohen's $d = -.36$). There was no difference between sexual minority men and women ($t(2, 279) = 1.50, p = .14$; Cohen's $d = .18$). There was a significant difference between men ($t(2, 228) = -3.18, p < .01$; Cohen's $d = -.42$), such that gay men ($M = 24.54, SD = 13.50$) reported more social anxiety than heterosexual men ($M = 18.95, SD = 12.99$). No differences were found between heterosexual and sexual minority women ($t(2, 286) = .878, p = .381$; Cohen's $d = .10$). The interaction between sex and sexual orientation is such that between heterosexuals, women report more social anxiety than men, and sexual minority men report more social anxiety than heterosexual men.

Next, I examined the moderating effect of same-sex sexual attractions on the relationship between sexual orientation and psychological well-being and the relationship between sex and psychological well-being, and the three-way interaction among sex, sexual orientation, and same-sex sexual attraction. To do this I conducted a series of hierarchical linear regression analyses. On the first step of each analysis, other-sex emotional, romantic, and sexual attractions were entered as controls, as other-sex attractions were significantly related to same-sex attractions. Same-sex romantic and emotional attractions were entered on the second step of each analysis, same-sex sexual attraction, sexual orientation identity, and sex were entered on the third step, and the 2-way interactions between sex and sexual orientation, sex and same-sex sexual attraction, and same-sex sexual attraction and sexual orientation were entered on the fourth step. Lastly, the three-way interaction among sex, sexual orientation, and same-sex sexual attraction was entered on the fourth step. All predictor variables were centered.

Same-sex sexual attractions did not moderate the relationship between sexual orientation or sex and psychological distress. The three-way interaction among sex, sexual orientation, and same-sex sexual attractions was not significant in predicting psychological distress.

IV. DISCUSSION

This research adds to a growing body of literature that emphasizes the importance of assessing aspects of sexual orientation beyond labels and behaviors, in this case sexual and non-sexual attractions (e.g., Diamond, 2003a; Garnets, 2002; Rust, 2000). Additionally, it demonstrates that inconsistencies can exist between one's self-identified sexual orientation and the attractions one experiences—heterosexual people endorse same-sex attractions and sexual minority individuals (i.e., gay men, lesbian women) endorse other-sex attractions. This underscores the importance of assessing both same-sex and other-sex sexual and non-sexual attractions in people of all sexual orientations. This study

also provides insight about how endorsing attractions that are consistent or inconsistent with sex norms is related (or not) to various aspects of psychological well-being. Lastly, it extends the literature in an important way by providing preliminary validation for a measure of sexual, romantic, and emotional attractions.

Overall, the study hypotheses received mixed support. The Attractions I questionnaire received preliminary support and validation. The predictions regarding endorsement of same-sex and other-sex emotional, romantic, and sexual attractions were predominantly supported, with sex and sexual orientation differences in the expected directions. Predictions regarding same-sex attractions and psychological distress received the least support. Research questions are discussed in further detail below.

Assessing Attractions

In order to examine the attractions component of sexual orientation, I first developed a measure for examining same-sex and other-sex sexual and non-sexual attractions. To date, most research on attraction involves person-specific attractions (e.g., see Sprecher, Wenzel, & Harvey, 2008). When more general, non-person specific attractions are assessed, it is often overly general, combining sexual and non-sexual attractions (Narring et al., 2003). However, more recent theories and research (e.g., Diamond, 2003a; Fisher, 1998; Fisher et al, 2002; Garnets, 2002; Yoneda & Davila, 2006) demonstrate that (non-person specific) attractions are both sexual and non-sexual, with non-sexual attractions likely encompassing a romantic type of attraction as well as an emotional type (e.g., Diamond 200a; 2000b; 2002). The pilot work conducted prior to this study provided further support for assessing these three types of attractions.

The scale developed here appears to tap both sexual and non-sexual attractions, and demonstrates preliminary convergent and discriminant validity when compared with other measures (i.e., Attractions II questionnaire, friendship desire questionnaire), suggesting that sexual and non-sexual attractions, as assessed by the current measure, represent related yet distinct constructs not

already captured by other measures. Further, despite the similarities between friendship and emotional attraction (e.g., Argyle & Henderson, 1984), the Attractions I measure appears to tap more than just desire for friendship.

Across all participants, same-sex and other-sex emotional attractions were moderately-to-strongly related to both same-sex and other-sex romantic and sexual attractions, respectively. These moderately strong relationships suggest that emotional attraction is related to but distinct from romantic and sexual attractions. This finding is consistent with previous research that has distinguished emotional attraction from sexual attraction (e.g., Diamond, 2004; Yoneda & Davila, 2006). There is less research on the distinction between emotional and romantic attractions, but theory (e.g., Fisher, Diamond) and pilot study findings suggest that these two attractions can be differentiated. However, more research is needed to refine questions assessing these two constructs. For example, the other-sex emotional attraction item was equally related to the Attractions II—Emotional and Romantic subscales. And some items chosen for the Attractions II—Emotional subscale were more related to romantic attraction than emotional attraction. Despite the need for further refinement, overall findings do suggest that emotional and romantic attractions should be assessed separately. They appear to tap related but distinct constructs and thus should not be collapsed into one “non-sexual attraction” category.

Turning now to sexual and romantic attractions. Same-sex and other-sex sexual and same-sex and other-sex romantic attractions, respectively, were very highly correlated when examined across all participants. Romantic attraction was conceptualized as a non-sexual attraction (e.g., Fisher, 1998), but was more strongly related to sexual attraction than to emotional attraction. This brings into question whether or not romantic attraction really is a non-sexual attraction. The sexual and romantic attractions items were based partly on Fisher’s (1998, 2000) model of emotion-motivation systems, in which she distinguishes the sex drive, or lust, from the attraction system, or romantic attraction, and states that they can act in concert or independently. Calling romantic attraction a non-sexual attraction may be misleading, as it may in part be sexual, and the extent to which

it is may differ by sex and sexual orientation. Men, for example, typically place greater emphasis on sex and less emphasis on relational and emotional components of relationships (e.g., Korobov, 2006; Levant, 1997), and thus may not differentiate amongst romantic and sexual attractions. However, when these attractions were examined separately by sex and sexual orientation, they were in the moderate range for each group of participants, with the exception of gay men, for which the same-sex sexual and romantic attractions were weakly (but significantly) related. These findings suggest that they are related but distinct constructs and that the relationship between these attractions can differ by sex and sexual orientation. Future research should examine both the potential overlap and the unique aspects of romantic versus sexual attraction for men and women of different sexual orientations.

In sum, the Attractions I measure appears to assess sexual and non-sexual same-sex and other-sex attractions. However, more research is needed in order to validate and better discriminate among the attractions, particularly emotional vs. romantic and romantic vs. sexual attractions. A notable weakness is that neither the Attractions II nor the friendship desire measure is an established measure. Both were created for the purposes of this study, as no existing measures on emotional and romantic attractions, or desire for friendship (for adults) could be found in the literature. Although the lack of established measures makes it more challenging to establish validity for the Attractions I measure, these findings provide a good first step in providing preliminary validation for a measure of same-sex and other-sex emotional, romantic, and sexual attractions.

Differentiating Same-Sex and Other-Sex Emotional, Romantic, and Sexual Attractions

Predictions for the first set of research questions were largely supported. Overall, participants endorsed attractions consistent with their sexual orientation identity, women endorsed more emotional attractions than men, and heterosexual women endorsed more same-sex attractions than heterosexual men.

Heterosexual women and men. Heterosexual women endorsed significantly greater same-sex emotional, romantic, and sexual attractions than heterosexual men, with the largest difference for emotional attractions. This finding is consistent with previous research, which contends that women's sexuality is more fluid than men's (e.g., Diamond, 2003a; Peplau, 2003). It is important to note, however, that this finding may not reflect a genuine fluidity *per se*, but rather, it may reflect the greater societal acceptability for women to endorse a range of same-sex attractions than men (Erickson-Schroth, 2010). Another possible explanation for this difference is that women are more likely than men to endorse greater attractions in general. However, this appears unlikely as heterosexual women and men did not differ in terms of other-sex attractions endorsed (with the exception of the Attractions II—Emotional subscale). Overall, the prediction that women's sexuality is more fluid than men's was supported, but the prediction that it is not permissible for men to endorse emotional attractions (Korobov, 2006; Levant 1992) did not receive full support.

Sexual minority women and men. The prediction that sexual minority men and women would not differ in terms of same-sex romantic and sexual attractions received mixed support. They did not differ in terms of same-sex romantic attractions, but gay men endorsed greater same-sex sexual attraction than lesbian women. This difference may reflect the greater emphasis that men place on sex, compared to women (Levant, 1992; Peplau, 2003) and speak to the non-relational aspect of masculinity (Korobov, 2006). Alternatively, it may suggest that lesbian women place less of an emphasis on sex and more of an emphasis on emotional aspects (e.g., Peplau & Garnets, 2000). Indeed, lesbian women did endorse greater same-sex emotional attractions than gay men. These differences are particularly interesting given that they were not found for heterosexual men and women. This may speak to the argument that women in heterosexual relationships are more sexual (i.e., endorse greater other-sex sexual attraction) because of their male partner's higher sex drive (e.g., Peplau, 2003).

Interestingly, gay men endorsed significantly more other-sex emotional and romantic attractions than lesbian women endorsed. This is particularly surprising given that women reported more same-sex emotional attractions than men. This seems consistent with anecdotal evidence about the special relationships between gay men and straight women (e.g., Kleinberg, 1988). Or it may reflect that gay men feel that there is something about women that allows them to express more emotional and romantic needs, which they may feel is lacking in friendships with men (e.g., Greif, 2009). The finding may also reflect the more political aspect of a lesbian identity for some women (e.g., Rust, 2000), which may make lesbian women less likely to endorse attractions toward men.

Heterosexual and sexual minority women and men. Differences between heterosexual and sexual minority men and women were consistent with sexual orientation identities. As predicted, lesbian women and gay men endorsed significantly greater same-sex attractions than heterosexual women and men, respectively. Conversely, heterosexual women and men endorsed significantly greater other-sex attractions than lesbian women and gay men, respectively. Although emotional attractions were the least different between the respective groups, the effect sizes were still large. This further supports that emotional attraction is more than a desire for a platonic friendship, as sexual orientation identity would likely play less of a role if it were platonic.

Taken together, findings for the first set of research questions demonstrate the importance of both sexual identity (male vs. female) and sexual orientation identity (heterosexual vs. lesbian/gay) in terms of attractions. Additionally, findings underscore the importance of assessing same-sex and other-sex attractions regardless of one's sexual orientation identity. This supports other research findings that have found incongruities between people's sexual orientation identities and other aspects of sexual orientation (e.g., Laumann et al., 1994; Ross, Mansson, Daneback, & Tikkanen, 2005).

Attractions, Sexual Orientation, and Psychological Well-Being

Research has demonstrated that people who endorse a sexual minority social identity report poorer well-being and greater psychological distress than

heterosexuals, likely due to additional stressors faced by those with a concealable stigma (e.g., Cochran & Mays, 2000; Meyers, 2003). Based on such findings, I predicted that greater same-sex attractions (regardless of one's self-identified sexual orientation) would also be associated with poorer well-being. Additionally, amongst same-sex attractions, sexual attraction would be the least permissible attraction for people to endorse, and thus more strongly related with poorer well-being than non-sexual same-sex attractions. These predictions received little support. Overall, greater same-sex attractions, particularly sexual attraction, were associated with more loneliness. There was also some support for greater same-sex emotional and romantic attractions being associated with greater social anxiety. Same-sex attractions were not related to self-esteem or depressive symptoms. These findings suggest that those who endorse same-sex attractions (regardless of sexual orientation) do not experience the same stressors as those who identify as sexual minorities. For example, increased rates of depression and lower self-esteem are thought to be a result of social factors, including stressors and invalidation of one's identity (e.g., Frable, 1998; Mays & Cochran, 2001). Endorsing same-sex attractions may not expose one to such stressors. However, the relationship between same-sex attractions and loneliness (and to a lesser extent social anxiety) suggests that there is still something stigmatizing or stressful about these attractions. Individuals who endorse greater same-sex attractions may conceal them from close others, which may cause them to feel more isolated and socially anxious that others may know about them. Future research should examine how open people are about such attractions and whether or not they have acted on them. Additionally, it may be helpful to include other indicators of well-being, such as rejection sensitivity. Higher rates of rejection sensitivity are seen in those with a concealable stigma (e.g., Pachankis et al., 2008). Turning to social psychology theories of identity may also shed light onto what makes endorsing same-sex attractions stressful for some people but not others. Examining the personal attributes/identities associated with respective social identities would be a good first step. Further, examining whether or not same-sex attractions are consistent or inconsistent

with one's other identities (e.g., sex, sexual orientation) would shed light on to how such identities intersect with personal attributes, and whether such inconsistencies are associated with poorer well-being.

Since violating sex norms, particularly the norm of heterosexuality, is less tolerable for men than for women (Kite & Whitley, 1996; Levant, 1992; Levant & Pollack, 1995), and sexual fluidity is more acceptable for women (e.g., Baumeister, 2000; Diamond, 2007; Peplau & Garnets, 2000), I predicted that greater same-sex attractions would be associated with psychological distress for men more so than women. This prediction received support only when looking at social anxiety; greater same-sex attractions were associated with more social anxiety for men but not for women. This is consistent with previous research that has demonstrated higher rates of social anxiety in gay men (e.g., Pachankis & Goldfried, 2006). It may reflect the lack of permissibility for men to endorse same-sex attractions, as men may be anxious that others will somehow detect this. Contrary to the predictions, greater same-sex romantic and sexual attractions were associated with more loneliness and depressive symptoms for women than for men. This is an interesting finding, particularly since some prominent researchers (e.g., Rust, 2000) have argued that for a woman to endorse attractions or fantasies contrary to her sexual orientation (e.g., lesbian woman endorsing other-sex attractions/fantasies, heterosexual women endorsing same-sex attractions/fantasies) is not actually an inconsistency. Rather, women may have more complex self-identities that can encompass discrepant parts. One possible explanation for this unexpected finding is that men endorsed less same-sex attractions than women because it is less acceptable for them to do so, thereby restricting the range for men, and thus no relationship emerged between same-sex attractions and psychological distress for men. It also may suggest that it is only somewhat permissible for women to endorse same-sex attractions. Women may feel more comfortable than men endorsing same-sex attractions, but still may not be open or acting on such attractions, thus reflected in more loneliness.

With the exception of loneliness, it does not appear that greater same-sex attractions are associated with more psychological distress. Nor do greater same-sex attractions seem to be related with more distress for men more so than women. This suggests that same-sex attractions are not as stigmatizing as identifying as a sexual minority. Perceived discrimination has been shown to account for a substantial amount of the association between sexual minority status and psychological distress (Mays & Cochran, 2001). It is important, then, to see if those who endorse same-sex attractions perceive any discrimination based on these attractions. Additionally, examining how open people are about such attraction and whether or not they view these attractions as inconsistencies with their identities would also be important.

As supplementary analyses, I compared self-identified heterosexuals and sexual minorities in terms of psychological well-being. Comparisons revealed that sexual minority women reported more loneliness than heterosexual women, and that gay men reported more social anxiety than heterosexual men. These results suggest that different indicators of psychological well-being are important to look at for men and women. The finding that gay men report higher levels of social anxiety is consistent with previous research (e.g., Pachankis & Goldfried, 2006). Further, it is consistent with the finding that greater same-sex attractions are associated with poorer well-being for men more so than women. These findings suggest that breaking the norm of heterosexuality through self-identification or attractions creates anxiety for men. The finding that self-identified lesbian women reported more loneliness than heterosexual women is consistent with the finding that same-sex attractions are associated with more loneliness and that that this relationship is stronger for women more so than men. Interestingly, heterosexual men reported more loneliness than heterosexual women. These findings highlight that there is something about breaking the norm of heterosexuality (through same-sex attractions or self-identification) and experiencing loneliness for women. Future research should examine why breaking the norm of heterosexuality is associated with social anxiety for men and loneliness for women.

Moderators of Same-Sex Sexual Attraction and Psychological Well-Being

Researchers have recommended that studies examining sexual orientation pay more attention to the complexity and variability in people's erotic, romantic, and emotional experiences (e.g., Peplau & Garnets, 2000). One such way to do this is to take a closer look at the identity characteristics of race/ethnicity and age (Rothblum, 2000). In the present study, we examined ethnicity/race and age as possible moderators of the relationship between same-sex sexual attraction and psychological well-being. No moderating effects were found for age, race, or gendered traits on the associations between same-sex sexual attraction and psychological well-being. For race, less than 30% of the sample identified as a racial/ethnic minority. It is possible that a larger sample of ethnic/racial minorities may have been needed to detect moderating effects of race. The lack of a moderating effect for gendered traits may be due to the assessment measure chosen. Research has demonstrated that women and men are becoming increasingly equal in their endorsement of masculinity as assessed by the BSRI (Twenge, 1997). A more modern measure of masculinity and femininity may have been more sensitive than the BSRI (e.g., Hoffman & Borders, 2001), which was created several decades ago. Additionally, looking at how salient one's sex identity is may also be useful.

In supplementary analyses, I examined the moderating effects of sex and sexual orientation on the relationship between same-sex sexual attractions on psychological well-being. Neither sex nor sexual orientation moderated the relationship. Additionally, the three-way interaction among sex, sexual orientation, and same-sex sexual attractions was not significant in predicting psychological well-being. These findings suggest that the relationship between same-sex sexual attractions and psychological well-being is similar for men and women of different sexual orientations. Again, looking at other moderators, such as sex and sexual orientation identity salience, may be useful in understanding the relationship between same-sex sexual attractions and psychological well-being.

Limitations

Although this study has strengths, there are notable limitations inherent to the design and the exploratory nature of this study. First, as was previously discussed, the use of novel, unestablished measures makes it difficult to provide more than preliminary support that the intended constructs of emotional, romantic, and sexual attractions were being assessed. However, as no such measures exist, it provides a first step in developing tools to assess such attractions. Second, the data were cross-sectional and thus affected by the limitations inherent in that design. This is a reasonable place to begin given the novel questions examined, but it is not possible to examine the possible fluidity of sexuality over time. Third, study recruitment and data collection occurred solely online, automatically excluding those without computer access. Additionally, participants were offered feedback as incentive to participate. This may pull for more psychologically-oriented individuals to participate, but this has yet to be examined. Further, studies examining the use of personalized feedback recommend this as it increases likelihood of survey completion (Marcus, Bosnjak, Lindner, Pilischenko, & Schutz, 2007). Research has shown that studies conducted online possess psychometric properties similar to those of traditional format questionnaires (Fortson, Scotti, Del Ben, & Chen, 2006). Additionally, online data collection can be particularly useful when collecting data on sensitive questions, such as sexual attractions, as individuals may be more open and honest about such topics in online surveys than in-person (see Frankel & Siang, 1999). Online data collection can also be particularly useful for collecting data from less visible populations, such as sexual minorities (Riggle, Rostosky, & Reedy, 2005), as was done in this study. A fifth limitation is the lack of ethnic and racial diversity in the present sample, which was 70% Caucasian. However, this is similar to the U.S. population estimates (U.S. Census Bureau, 2008). Additionally, this study excluded those who did not identify as either heterosexual, lesbian, or gay, excluding those who identified as bisexual, queer, and so on, nor did it include those who reported a discrepancy between their biological sex and the sex they most strongly identify with. Lastly, a number of correlations were conducted, thus increasing the chances of Type 1 error.

However, Bonferroni corrections were applied to each set of analyses in order to reduce chances for such error.

Conclusions

This study provides a good first step in examining sexual and non-sexual attractions, an often-overlooked component of sexual orientation (e.g., Peplau & Garnets, 2000). It underscores the importance of assessing these same-sex and other-sex attractions in self-identified heterosexual and sexual minority individuals. Additionally, it highlights that not all parts of same-sex sexuality (i.e., same-sex attractions) are associated with poorer well-being.

Future studies should further refine the constructs of emotional, romantic, and sexual attractions and improve ways to assess these attractions. Further, assessing identity saliency for various identities (e.g., sex, sexual orientation, race, etc.) and examining if various same-sex and other-sex attractions are consistent or inconsistent with such identities will provide further information on the personal attributes associated with social identities and how people negotiate multiple identities. Such information may also shed light onto why certain aspects of sexual minority status are associated with poorer psychological well-being for some individuals. Lastly, continuing to assess the attractions component of sexual orientation in both men and women will provide further information on sexual orientation similarities and differences in men and women.

Table 1

Participant Characteristics by Sex and Sexual Orientation (N = 532)

	Women			Men			Total
	Hetero	Lesbian	Wom Tot	Hetero	Gay	Men Tot	<i>N</i> = 532
	(<i>n</i> = 135)	(<i>n</i> = 163)	(<i>n</i> = 298)	(<i>n</i> = 109)	(<i>n</i> = 125)	(<i>n</i> = 234)	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
Age	27.76 (7.22)	34.10 (11.91)	31.19 (10.51)	29.04 (9.27)	36.47 (12.49)	33.02 (11.67)	31.99 (11.07)
Hours online/day	3.69 (2.63)	4.84 (4.68)	4.32 (3.92)	4.13 (2.94)	4.77 (4.01)	4.47 (3.55)	4.38 (3.76)
Hours online/week	23.36 (17.66)	26.17 (20.91)	24.83 (19.45)	25.44 (18.01)	28.25 (21.39)	26.87 (19.81)	25.75 (19.62)
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>N</i> (%)
Relationship							
Single	43 (31.6)	73 (45.1)	116 (38.9)	46 (42.2)	62 (49.6)	108 (46.2)	224 (42.1)
Rel	93 (68.4)	89 (54.9)	182 (61.1)	63 (57.8)	63 (50.4)	126 (53.8)	308 (57.9)
Children							
0	121 (89.0)	117 (72.2)	238 (79.9)	82 (75.2)	103 (82.4)	185 (79.1)	423 (79.5)
1	6 (4.4)	20 (12.3)	26 (8.7)	9 (8.3)	11 (8.8)	20 (8.5)	46 (8.6)

Table 1 continued

	Women			Men			Total
	Hetero	Lesbian	Wom Tot	Hetero	Gay	Men Tot	<i>N</i> = 532
	(<i>n</i> = 135)	(<i>n</i> = 163)	(<i>n</i> = 298)	(<i>n</i> = 109)	(<i>n</i> = 125)	(<i>n</i> = 234)	
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>N</i> (%)
2	3 (2.2)	14 (8.6)	17 (5.7)	9 (8.3)	5 (4.0)	14 (6.0)	31 (5.8)
3	3 (2.2)	5 (3.1)	8 (2.7)	3 (2.8)	4 (3.2)	7 (3.0)	15 (2.8)
4	1 (.7)	4 (2.5)	5 (1.7)	4 (3.7)	0 (0)	4 (1.7)	9 (1.7)
≥ 5	0 (0)	0 (0)	0 (0)	1 (.9)	0 (0)	1 (.4)	2 (.2)
Race							
Amer Ind	0 (0)	2 (1.2)	2 (.7)	1 (.9)	0 (0)	1 (.4)	3 (.6)
Asian	8 (5.9)	2 (1.2)	10 (3.4)	9 (8.3)	4 (3.2)	13 (5.6)	23 (4.3)
Bi/mul ti	5 (3.7)	8 (4.9)	13 (4.4)	3 (2.8)	5 (4.0)	8 (3.4)	21 (3.9)
Black	2 (1.5)	18 (11.1)	20 (6.7)	1 (.9)	6 (4.8)	7 (3.0)	27 (5.1)
East Ind	2 (1.5)	0 (0)	2 (.7)	2 (1.8)	1 (.8)	3 (1.3)	5 (.9)
Latino	9 (6.6)	16 (9.9)	25 (8.4)	8 (7.3)	8 (6.4)	16 (6.8)	41 (7.7)
White	103 (75.7)	103 (63.6)	206 (69.1)	72 (66.1)	95 (76.0)	167 (71.4)	373 (70.1)
Other	5 (3.7)	10 (6.2)	15 (5.0)	12 (11.0)	3 (2.4)	15 (6.4)	30 (5.6)

Table 1 continued

	Women			Men			Total
	Hetero (<i>n</i> = 135)	Lesbian (<i>n</i> = 163)	Wom Tot (<i>n</i> = 298)	Hetero (<i>n</i> = 109)	Gay (<i>n</i> = 125)	Men Tot (<i>n</i> = 234)	<i>N</i> = 532
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>N</i> (%)
Income							
< \$10k	23 (16.9)	38 (23.5)	61 (20.5)	25 (22.9)	19 (15.2)	44 (18.8)	105 (19.7)
\$10 - 15k	6 (4.4)	19 (11.7)	25 (8.4)	12 (11.0)	10 (8.0)	22 (9.4)	47 (8.8)
\$15 - 25k	15 (11.0)	13 (8.0)	28 (9.4)	11 (10.1)	6 (4.8)	17 (7.3)	45 (8.5)
\$25 - 50k	31 (22.8)	39 (24.1)	70 (23.5)	18 (6.5)	21 (16.8)	39 (16.7)	109 (20.5)
\$50 - 75k	25 (18.4)	23 (14.2)	48 (16.1)	17 (15.6)	19 (15.2)	36 (15.4)	84 (15.8)
\$75 - 100k	10 (7.4)	20 (12.3)	30 (10.1)	8 (7.3)	11 (8.8)	19 (8.1)	49 (9.2)
\$100 - 150k	13 (9.6)	4 (2.5)	17 (5.7)	9 (8.3)	16 (12.8)	25 (10.7)	42 (7.9)

Table 1 continued

	Women			Men			Total	
	Hetero (<i>n</i> = 135)	Lesbian (<i>n</i> = 163)	Wom Tot (<i>n</i> = 298)	Hetero (<i>n</i> = 109)	Gay (<i>n</i> = 125)	Men Tot (<i>n</i> = 234)	<i>N</i> = 532	
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>N</i> (%)	
Edu	\$150 - 200k	4 (2.9)	2 (1.2)	6 (2.0)	4 (3.7)	9 (7.2)	13 (5.6)	19 (3.6)
	>\$200k	5 (3.7)	1 (.6)	6 (2.0)	4 (3.7)	11 (8.8)	15 (6.4)	21 (3.9)
	\$150 - 200k	4 (2.9)	2 (1.2)	6 (2.0)	4 (3.7)	9 (7.2)	13 (5.6)	19 (3.6)
	<HS	2 (1.5)	3 (1.8)	5 (1.7)	3 (2.7)	2 (1.6)	5 (2.2)	10 (1.8)
	diploma							
	HS	5 (3.7)	18 (11.1)	23 (7.7)	12 (11.0)	7 (5.6)	19 (8.1)	42 (7.9)
	diploma							
	Some college	14 (10.3)	61 (37.7)	75 (25.2)	42 (38.5)	26 (20.8)	68 (29.1)	143 (26.9)
	AA	6 (4.4)	21 (13.0)	27 (9.1)	13 (11.9)	13 (10.4)	26 (11.1)	53 (10.0)
	BA/BS	50 (36.8)	45 (27.8)	95 (31.9)	17 (5.6)	36 (28.8)	53 (22.6)	148 (27.8)
MA/MS	44 (32.4)	11 (6.8)	55 (18.5)	12 (11.0)	28 (22.4)	40 (17.1)	95(17.9)	

Table 1 continued

	Women			Men			Total
	Hetero	Lesbian	Wom Tot	Hetero	Gay	Men Tot	<i>N</i> = 532
	(<i>n</i> = 135)	(<i>n</i> = 163)	(<i>n</i> = 298)	(<i>n</i> = 109)	(<i>n</i> = 125)	(<i>n</i> = 234)	
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>N</i> (%)
JD	1 (.7)	0 (0)	1 (.3)	3 (2.8)	3 (2.4)	6 (2.6)	7 (1.3)
PhD/PsyD	10 (7.4)	1 (.6)	11 (3.7)	5 (4.6)	4 (3.2)	9 (3.8)	20 (3.8)
DDS	1 (.7)	0 (0)	1 (.3)	1 (.9)	0 (0)	1 (.4)	2 (.4)
MD	1 (.7)	0 (0)	1 (.3)	0 (0)	4 (3.2)	4 (1.7)	5 (.9)
Region							
Northeast	74 (54.4)	51 (31.5)	125 (41.9)	37 (33.9)	68 (54.4)	105 (44.9)	230 (43.2)
Midwest	14 (10.3)	30 (18.5)	44 (14.8)	32 (29.4)	16 (12.8)	48 (20.5)	92 (17.3)
South	8 (5.9)	35 (21.6)	43 (14.4)	13 (11.9)	12 (9.6)	25 (10.7)	68 (12.8)
West	21 (15.4)	32 (19.8)	53 (17.8)	24 (22.0)	17 (13.6)	41 (17.5)	94 (17.7)
Other	17 (12.5)	12 (7.4)	29 (9.7)	2 (1.8)	10 (8.0)	12 (5.1)	41 (7.7)
Area							
Urban	63 (46.3)	63 (38.9)	126 (42.3)	41 (37.6)	78 (62.4)	119 (50.9)	245 (46.1)
Suburban	61 (44.9)	69 (42.6)	130 (43.6)	53 (48.6)	37 (29.6)	90 (38.5)	220 (41.4)
Rural	8 (5.9)	27 (16.7)	35 (11.7)	14 (12.8)	8 (6.4)	22 (9.4)	57 (10.7)

Note. Hetero = heterosexual; Wom Tot = women total; Men Tot = men total; Rel = relationship; Amer Ind = American Indian; Bi/multi = biracial/multiracial; East Ind = East Indian; Edu = education. Total of percentages are not 100 for every characteristic because of rounding.

Table 2

Zero-Order Correlations for Attractions / Items Across All Participants and as a Function of Sexual Orientation Identity by Sex

Item	1	2	3	4	5	6
All participants						
1. SS emot	-					
2. SS rom	.733**	-				
3. SS sex	.698**	.930**	-			
4. OS emot	-.606**	-.685**	-.650**	-		
5. OS rom	-.641**	-.895**	-.877**	.769**	-	
6. OS sex	-.646**	-.887**	-.882**	.700**	.925**	-
Men						
1. SS emot	-	.580**	.092	-.316**	-.141	-.006
2. SS rom	.493**	-	.181*	-.200*	-.343**	-.176*
3. SS sex	.269**	.475**	-	.073	.068	-.210*
4. OS emot	-.248**	-.169	-.184	-	.303**	.134
5. OS rom	-.120	-.332**	-.471**	.633**	-	.615**
6. OS sex	-.194*	-.386**	-.343**	.518**	.595**	-
Women						
1. SS emot	-	.335**	.447**	-.358**	-.279**	-.225**
2. SS rom	.365**	-	.584**	-.172*	-.317**	-.178*
3. SS sex	.176*	.468**	-	-.156*	-.298*	-.206**
4. OS emot	-.112	-.046	-.002	-	.503**	.181*
5. OS rom	-.019	-.127	-.163	.595**	-	.467**
6. OS sex	-.043	-.012	-.171*	.427**	.645**	-

Note. SS = same-sex; OS = other-sex; Emot = emotional attraction; Rom = romantic attraction; Sex = sexual attraction. For men, correlations for gay men ($n = 125$) are presented above the diagonal, correlations for heterosexual men ($n = 109$) are presented below the diagonal. For women, correlations for lesbian women ($n = 163$) are presented above the diagonal, correlations for heterosexual women ($n = 135$) are presented below the diagonal.

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

Table 3

Zero-Order Correlations for Same-Sex Attractions II Items and Subscales Across All Participants and as a Function of Sexual Orientation Identity by Sex

Item	1	2	3	4	5	6	7	8	9	10	11	12
All Participants												
1. SS 1 E	—											
2. SS 2 E	.865**	—										
3. SS 3 E	.821**	.866**	—									
4. SS 4 E	.837**	.877**	.910**	—								
5. SS 5 E	.809**	.871**	.876**	.884**	—							
6. SS 6 R	.770**	.783**	.863**	.831**	.817**	—						
7. SS 7 R	.681**	.681**	.761**	.724**	.691**	.858**	—					
8. SS 8 R	.747**	.763**	.832**	.806**	.780**	.865**	.886**	—				
9. SS 9 R	.688**	.686**	.788**	.739**	.701**	.852**	.895**	.895**	—			
10. SS 10 R	.697**	.699**	.793**	.750**	.727**	.891**	.907**	.880**	.931**	—		
11. SS Emot	.919**	.948**	.951**	.959**	.941**	.865**	.757**	.837**	.766**	.779**	—	
12. SS Rom	.750**	.755**	.846**	.807**	.778**	.935**	.954**	.950**	.960**	.968**	.838**	—

Table 3 continued

Item	1	2	3	4	5	6	7	8	9	10	11	12
	Men											
1. SS 1 E	—	.710**	.608**	.662**	.588**	.507**	.375**	.503**	.590**	.423**	.856**	.561**
2. SS 2 E	.812**	—	.719**	.659**	.663**	.491**	.234**	.413**	.421**	.374**	.870**	.445**
3. SS 3 E	.684**	.676**	—	.693**	.668**	.582**	.291**	.550**	.538**	.446**	.847**	.561**
4. SS 4 E	.732**	.753**	.778**	—	.719**	.540**	.339**	.487**	.503**	.432**	.885**	.535**
5. SS 5 E	.722**	.790**	.700**	.759**	—	.653**	.454**	.598**	.553**	.490**	.837**	.646**
6. SS 6 R	.676**	.609**	.644**	.576**	.590**	—	.545**	.542**	.655**	.767**	.643**	.815**
7. SS 7 R	.546**	.450**	.646**	.478**	.497**	.785**	—	.702**	.568**	.705**	.421**	.857**
8. SS 8 R	.611**	.563**	.603**	.654**	.672**	.735**	.628**	—	.552**	.592**	.614**	.813**
9. SS 9 R	.470**	.387**	.610**	.445**	.427**	.714**	.863**	.634**	—	.675**	.615**	.819**
10. SS 10 R	.544**	.442**	.588**	.413**	.462**	.835**	.869**	.624**	.839**	—	.506**	.884**
11. SS Emot	.890**	.914**	.851**	.900**	.897**	.693**	.582**	.698**	.517**	.541**	—	.651**
12. SS Rom	.652**	.565**	.692**	.593**	.611**	.923**	.919**	.844**	.877**	.925**	.696**	—

Table 3 continued

Item	1	2	3	4	5	6	7	8	9	10	11	12
	Women											
1. SS 1 E	—	.761**	.658**	.680**	.549**	.478**	.486**	.692**	.520**	.515**	.859**	.619**
2. SS 2 E	.787**	—	.828**	.764**	.743**	.546**	.539**	.716**	.571**	.553**	.926**	.661**
3. SS 3 E	.719**	.791**	—	.749**	.747**	.460**	.444**	.641**	.537**	.511**	.896**	.595**
4. SS 4 E	.727**	.840**	.856**	—	.691**	.575**	.453**	.591**	.463**	.519**	.893**	.589**
5. SS 5 E	.703**	.784**	.771**	.819**	—	.527**	.465**	.655**	.590**	.561**	.827**	.642**
6. SS 6 R	.611**	.592**	.738**	.673**	.657**	—	.728**	.637**	.698**	.741**	.586**	.845**
7. SS 7 R	.468**	.462**	.542**	.498**	.424**	.682**	—	.769**	.719**	.757**	.543**	.903**
8. SS 8 R	.512**	.576**	.652**	.641**	.571**	.696**	.717**	—	.792**	.725**	.765**	.880**
9. SS 9 R	.425**	.370**	.444**	.435**	.368**	.585**	.770**	.682**	—	.855**	.599**	.909**
10. SS 10 R	.433**	.390**	.479**	.452**	.462**	.678**	.734**	.625**	.721**	—	.594**	.915**
11. SS Emot	.870**	.924**	.911**	.935**	.895**	.717**	.521**	.645**	.442**	.480**	—	.709**
12. SS Rom	.568**	.560**	.672**	.642**	.589**	.858**	.896**	.863**	.851**	.865**	.665**	—

Note. SS = same-sex; E = emotional attraction subscale item; R = romantic attraction subscale item; SS Emot = same-sex emotional attraction subscale; SS Rom = same-sex romantic attraction subscale. For men, correlations for gay men ($n = 125$) are presented above the diagonal, correlations for heterosexual men ($n = 109$) are presented below the diagonal. For women, correlations for lesbian women ($n = 163$) are presented above the diagonal, correlations for heterosexual women ($n = 135$) are presented below the diagonal.

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

Table 4

Zero-Order Correlations for Other-Sex Attractions II Items and Subscales Across All Participants and as a Function of Sex and Sexual Orientation

Item	1	2	3	4	5	6	7	8	9	10	11	12
All Participants												
1. OS 1 E	—											
2. OS 2 E	.847**	—										
3. OS 3 E	.808**	.921**	—									
4. OS 4 E	.840**	.885**	.895**	—								
5. OS 5 E	.802**	.899**	.867**	.858**	—							
6. OS S 6 R	.777*	.885**	.880**	.838**	.854**	—						
7. OS 7 R	.710**	.748**	.785**	.753**	.723**	.862**	—					
8. OS 8 R	.767**	.823**	.854**	.836**	.812**	.879**	.887**	—				
9. OS 9 R	.703**	.766**	.814**	.760**	.746**	.884**	.905**	.900**	—			
10. OS 10 R	.724**	.799**	.825**	.788**	.773**	.908**	.894**	.884**	.937**	—		
11. OS Emot	.909**	.964**	.954**	.952**	.938**	.891**	.789**	.867*	.803**	.829**	—	
12. OS Rom	.773**	.833**	.868**	.835**	.817**	.947**	.951**	.951**	.967**	.967**	.873**	—

Table 4 continued

Item	1	2	3	4	5	6	7	8	9	10	11	12
Men (Gay men above diagonal)												
1. OS 1 E	—	.811**	.754**	.817**	.762**	.682**	.567**	.575**	.475**	.550**	.895**	.615**
2. OS 2 E	.693**	—	.869**	.874**	.847**	.753**	.648**	.698**	.585**	.647**	.949**	.721**
3. OS 3 E	.588**	.809**	—	.860**	.783**	.773**	.686**	.726**	.624**	.648**	.923**	.747**
4. OS 4 E	.685**	.653**	.660**	—	.834**	.789**	.665**	.704**	.606**	.661**	.946**	.741**
5. OS 5 E	.650**	.749**	.755**	.669**	—	.799**	.602**	.671**	.533**	.606**	.915**	.701**
6. OS S 6 R	.461**	.581**	.581**	.459**	.597**	—	.789**	.788**	.735**	.750**	.819**	.883**
7. OS 7 R	.390**	.376**	.419**	.379**	.434**	.706**	—	.895**	.908**	.880**	.684**	.955**
8. OS 8 R	.584**	.537**	.540**	.533**	.577**	.601**	.678**	—	.880**	.855**	.729**	.947**
9. OS 9 R	.469**	.439**	.557**	.408**	.599**	.760**	.805**	.667**	—	.897**	.610**	.940**
10. OS 10 R	.449**	.476**	.463**	.414**	.568**	.804**	.776**	.636**	.839**	—	.673**	.932**
11. OS Emot	.854**	.891**	.859**	.859**	.869**	.609**	.459**	.641**	.562**	.542**	—	.762**
12. OS Rom	.533**	.517**	.566**	.498**	.609**	.863**	.903**	.811**	.923**	.917**	.625**	—

Table 4 continued

Item	1	2	3	4	5	6	7	8	9	10	11	12
Women (Lesbian women above diagonal)												
1. OS 1 E	—	.789**	.700**	.758**	.705**	.736**	.728**	.735**	.629**	.730**	.864**	.769**
2. OS 2 E	.704**	—	.844**	.794**	.833**	.751**	.671**	.694**	.615**	.718**	.941**	.735**
3. OS 3 E	.685**	.838**	—	.846**	.737**	.767**	.713**	.777**	.674**	.722**	.910**	.780**
4. OS 4 E	.623**	.695**	.719**	—	.749**	.744**	.733**	.813**	.649**	.710**	.926**	.790**
5. OS 5 E	.558**	.757**	.700**	.584**	—	.744**	.614**	.714**	.584**	.660**	.895**	.710**
6. OS S 6 R	.463**	.561**	.617**	.431**	.546**	—	.839**	.855**	.871**	.904**	.828**	.952**
7. OS 7 R	.384**	.318**	.348**	.275**	.331**	.555**	—	.835**	.827**	.845**	.765**	.920**
8. OS 8 R	.567**	.659**	.599**	.543**	.645**	.510**	.679**	—	.831**	.834**	.819**	.931**
9. OS 9 R	.421**	.471**	.435**	.356**	.445**	.586**	.680**	.713**	—	.912**	.693**	.943**
10. OS 10 R	.350**	.427**	.488**	.387**	.402**	.735**	.576**	.467**	.685**	—	.783**	.955**
11. OS Emot	.870**	.906**	.896**	.842**	.793**	.588**	.395**	.698**	.487**	.469**	—	.830**
12. OS Rom	.489**	.541**	.549**	.479**	.521**	.765**	.878**	.805**	.889**	.806**	.592**	—

Note. SS = same-sex; E = emotional attraction subscale item; R = romantic attraction subscale item; SS Emot = same-sex emotional attraction subscale; SS Rom = same-sex romantic attraction subscale.

** $p < .01$.

Table 5

Correlations of Attractions I Items With Attractions II Subscales Across All Participants and as a Function of Sexual Orientation by Sex

Att 1 item	Att 2 Subscale			
	SS Emot	SS Rom	OS Emot	OS Rom
All Participants				
Att 1 SS Emot	.765**	.699**	-.473**	-.524**
Att 1 SS Rom	.712**	.850**	-.667**	-.741**
Att 1 SS Sex	.700**	.836**	-.624**	-.711**
Att 1 OS Emot	-.515**	-.601**	.692**	.668**
Att 1 OS Rom	-.629**	-.795**	.714**	.799**
Att 1 OS Sex	-.657**	-.802**	.666**	.756**
Heterosexual Men				
Att 1 SS Emot	.564**	.377**	.088	-.157
Att 1 SS Rom	.410**	.485**	-.219*	-.240*
Att 1 SS Sex	.247*	.442**	-.163	-.373**
Att 1 OS Emot	-.107	-.172	.365**	.322**
Att 1 OS Rom	-.096	-.253*	.372**	.472**
Att 1 OS Sex	-.160	-.311**	.288**	.363**
Gay Men				
Att 1 SS Emot	.258**	.245**	-.233**	-.267**
Att 1 SS Rom	.278**	.280**	-.119	-.231*
Att 1 SS Sex	.421**	.176	.179*	-.003
Att 1 OS Emot	.105	.055	.462**	.368**
Att 1 OS Rom	-.033	-.098	.241**	.303**
Att 1 OS Sex	-.173	-.131	.096	.213**
Lesbian Women				
Att 1 SS Emot	.315**	.140	-.256**	-.224**
Att 1 SS Rom	.370**	.314**	-.074	-.081
Att 1 SS Sex	.347**	.298**	.006	-.041
Att 1 OS Emot	-.289**	-.132	.349**	.230**

Table 5 continued

Att 1 item	Att 2 Subscale			
	SS Emot	SS Rom	OS Emot	OS Rom
Lesbian Women				
Att 1 OS Rom	-.327**	-.224**	.253**	.347**
Att 1 OS Sex	-.152	-.127	.177*	.233**
Heterosexual Women				
Att 1 SS Emot	.505**	.321**	.151	.109
Att 1 SS Rom	.220**	.271**	-.012	.067
Att 1 SS Sex	.117	.173*	.060	.201*
Att 1 OS Emot	-.029	-.108	.301**	.247**
Att 1 OS Rom	.029	-.068	.372**	.382**
Att 1 OS Sex	-.093	-.094	.096	.078

Note. Att 1 = Attractions Questionnaire I; Att 2 = Attractions II Questionnaire; SS = same-sex; OS = other-sex; Emot = emotional attraction; Rom = romantic attraction; Sex = sexual attraction.

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

Table 6

Means and Standard Deviations for Attractions I Items and Attractions II Subscales for All Participants and as a Function of Sexual Orientation by Sex

Measure	Les WOM		Het WOM		Gay Men		Hetero Men		Total	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Att 1 SS Emot	6.76	.597	4.52	1.924	6.12	1.097	2.39	1.734	5.15	2.148
Att 1 SS Rom	6.62	1.016	1.63	.876	6.48	.816	1.31	.836	4.25	2.706
Att 1 SS Sex	6.65	.836	2.01	1.325	6.86	.481	1.43	1.174	4.45	2.692
Att 1 OS Emot	2.04	1.106	5.52	1.276	3.61	1.913	5.97	1.443	4.10	2.179
Att 1 OS Rom	1.37	6.121	6.34	1.005	1.70	1.231	6.25	1.326	3.72	2.622
Att 1 OS Sex	1.69	8.340	6.33	1.026	1.45	.911	6.48	1.183	3.80	2.626
Att 2 SS Emot	40.28	6.121	28.44	11.028	39.85	5.951	15.39	10.268	32.04	12.93
Att 2 SS Rom	37.17	8.340	15.67	9.059	38.59	13.191	9.37	6.899	26.49	14.789
Att 2 OS Emot	16.25	10.576	39.87	5.644	22.98	13.191	36.771	8.456	28.11	14.034
Att 2 OS Rom	11.90	9.922	38.27	6.667	15.13	10.768	33.22	9.430	23.73	14.800

Note. Les WOM = lesbian women; Het WOM = heterosexual women; Het Men = heterosexual men; Total = all participants; Att 1 = Attractions I questionnaire items; Att 2 = Attractions II subscale; SS = same-sex; OS = other-sex; Emot = emotional attraction; Rom = romantic attraction; Sex = sexual attraction.

Table 7

Two-Way Analyses of Variance for Same-Sex and Other-Sex Attractions as a Function of Sex and Sexual Orientation

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>ηp2</i>
SS emot att					
Sex (S)	1	250.217	128.050	< .001	.196
Sex orient (SO)	1	1157.467	592.342	< .001	.530
S x SO	1	71.949	36.820	< .001	.065
Error	526	1.954			
SS rom att					
Sex (S)	1	4.408	5.444	.020	.010
Sex orient (SO)	1	3425.679	4230.311	<.001	.889
S x SO	1	2.427	2.997	.084	.006
Error	528	.810			
SS sex att					
Sex (S)	1	4.375	4.383	.037	.008
Sex orient (SO)	1	3309.497	3315.421	<.001	.863
S x SO	1	20.115	20.151	<.001	.037
Error	528	.998			

Table 7 continued

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>ηp2</i>
OS emot att					
Sex (S)	1	133.093	61.405	<.001	.104
Sex orient (SO)	1	1114.545	514.216	<.001	.493
S x SO	1	40.900	18.870	<.001	.035
Error	528	2.167			
OS rom att					
Sex (S)	1	2.016	1.733	.189	.003
Sex orient (SO)	1	2938.940	2525.464	<.001	.828
S x SO	1	5.881	5.054	.025	.010
Error	526	1.164			
OS sex att					
Sex (S)	1	.270	.240	.624	.000
Sex orient (SO)	1	3048.884	2713.959	<.001	.837
S x SO	1	4.787	4.261	.039	.008
Error	528	1.123			

Note. Sex orient = sexual orientation; S x SO = Sex x Sexual orientation interaction.

Table 8

Means, Standard Deviations, and Correlations of Psychological Distress Variables With Measures of Attraction

Psych Distress	<i>M</i>	<i>SD</i>	Attraction Measure									
			Att1	Att1	Att1	Att2	Att2	Att1	Att1	Att1	Att2	Att2
			SS emot	SS rom	SS sex	SS E	SS R	OS emot	OS rom	OS sex	OS E	OS R
All Participants												
Dep	8.68	9.54	-.04	.06	.08	-.013	.04	-.11*	-.06	-.05	-.11*	-.09
Lone	22.05	5.86	.03	.13**	.15**	.01	.08	-.20**	-.16**	-.11**	-.18**	-.17**
SE	30.93	5.58	.005	-.04	-.05	-.02	-.05	.07	.03	.00	.09*	.03
SocAnx	22.32	13.71	.08	.08	.07	.14**	.10*	-.03	-.01	-.02	-.00	.06
Heterosexual Men												
Dep	9.24	9.83	-.11	.03	.07	-.10	-.08	-.09	-.14	-.06	-.22*	-.03
Lone	22.55	6.25	-.11	-.02	.11	-.03	-.08	-.05	-.08	.11	-.02	.03
SE	31.01	5.75	.06	-.04	-.10	.02	.03	.11	.10	.01	.05	-.05
SocAnx	18.95	12.99	.04	.01	.04	-.00	-.02	.05	.04	.09	.07	.18

Table 8 continued

			Attraction Measure									
Psych	<i>M</i>	<i>SD</i>	Att1	Att1	Att1	Att 2	Att 2	Att1	Att1	Att1	Att2	Att2
Distress			SS	SS	SS	SS E	SS R	OS	OS	OS	OS E	OS
			emot	rom	sex			emot	rom	sex		R
Gay Men												
Dep	9.16	10.80	-.03	-.14	-.01	-.02	-.04	-.12	.12	.04	-.05	-.10
Lone	22.83	13.19	-.09	-.16	-.10	-.22*	-.20*	-.24**	.18*	.18	-.12	-.11
SE	30.73	5.59	-.12	.12	.11	.10	.02	.07	-.19*	-.18*	.05	-.01
SocAnx	24.54	13.50	-.02	.05	-.04	-.06	.02	-.03	.14	.05	.00	.03
Lesbian Women												
Dep	9.53	9.56	-.17*	-.03	-.03	.00	.01	-.08	.15	.10	-.05	.05
Lone	22.98	5.77	-.05	-.07	-.07	-.06	-.07	-.05	.07	.14	-.05	-.03
SE	30.70	6.06	.03	-.01	.02	-.06	-.09	.09	.01	-.07	.12	.05
SocAnx	21.96	15.32	-.08	.06	-.09	.18*	.15	-.02	.13	.16*	.03	.14

Table 8 continued

Psych	<i>M</i>	<i>SD</i>	Attraction Measure									
			Att1 SS emot	Att1 SS rom	Att1 SS sex	Att2 SS E	Att2 SS R	Att1 OS emot	Att1 OS rom	Att1 OS sex	Att2 OS E	Att2 OS R
Heterosexual Women												
Dep	6.79	7.75	-.13	.11	.11	-.08	-.02	-.04	.01	.12	.01	.06
Lone	19.78	5.41	.06	.09	.16	-.01	.03	-.25**	-.26**	-.14	-.18*	-.03
SE	31.30	4.86	.00	-.08	-.09	-.01	-.02	-.01	-.05	-.16+	.08	-.03
SocAnx	23.40	11.92	.05	.08	.11	.19*	.09	.03	.09	.07	.04	.19*

Note. Psych Distress = psychological distress; Dep = depressive symptoms; Lone = loneliness; SE = self-esteem; SocAnx = social anxiety; Att1 SS emot = Attraction I same-sex emotional attraction; Att1 SS rom = Attraction I same-sex romantic attraction; Att1 SS sex = Attraction I same-sex sexual attraction; Att2 SS E = Attractions II same-sex emotional attraction subscale; Att 2 SS R = Attractions II same-sex romantic attraction subscale; OS emot = other-sex emotional attraction; OS rom = other-sex romantic attraction; OS sex = other-sex sexual

attraction; Att 2 OS E = Attractions II other-sex emotional attraction subscale; Att 2 OS R = Attractions II other-sex romantic attraction subscale.

+ $p = .06$; * $p < .05$. ** $p < .01$

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Appendix A

Email Recruitment Example

Hello all,

Hope that you all are well! I'm sending out this impersonal mass email because I'm hoping you might be able to help me with my (online) dissertation study. Maybe you, and people you know, might be interested in participating. The requirement is pretty simple -- be 18 or older. While there is no payment, people who participate receive instant individualized feedback on their personality, self-esteem, and feelings in romantic relationships based on their responses (and help me with this research and to graduate!).

The complete details of participation, and access to the study are located at: <http://www.courses.rochester.edu/surveys/funk/attraction/>

Below I've pasted in the "web ad" for the study. If you feel comfortable, please copy this ad and email it along to anyone you think might be appropriate. Of course, if you have any questions or feedback, just let me know. Many thanks!

Are you interested in receiving free individual feedback about your well-being?

Are you 18 or over?

Psychology researchers at the State University of New York at Stony Brook are looking for women and men to complete a short survey.

The Dimensions of Attraction Survey is:

- VOLUNTARY and ANONYMOUS
- Completed all ONLINE
- BRIEF (takes about 30 – 40 minutes to complete)
- A chance to receive free INDIVIDUAL FEEDBACK on:
 - your self-esteem
 - how open you are to new experiences
 - how extraverted you are
 - your comfort with emotional intimacy
 - your confidence in romantic partners during times of need

Appendix B

Examples of Study Web Advertisements

General long web ad:

Are you interested in receiving *free* individual feedback about your well-being?

Are you 18 or over?

Psychology researchers at the State University of New York at Stony Brook are looking for women and men to complete a short survey.

The **Dimensions of Attraction Survey** is:

- VOLUNTARY and ANONYMOUS
- Completed all ONLINE
- BRIEF (takes about 30 – 40 minutes to complete)
- A chance to receive *free* INDIVIDUAL FEEDBACK on:
 - your self-esteem
 - how open you are to new experiences
 - how extraverted you are
 - your comfort with emotional intimacy
 - your confidence in romantic partners during times of need

[CLICK HERE TO LEARN MORE](#)

Short web ad recruiting gay men:

Dimensions of Attraction Survey

Psychology researchers at the State University of New York at Stony Brook are looking for men (18 years or older) who identify as gay to complete a short survey.

[CLICK HERE TO LEARN MORE](#)

Appendix C

Measures Developed for Study

Attractions Questionnaire I—Women

Please answer ALL of the following questions regardless of your sex or sexual orientation.

1. On a scale of 1 (not at all to) to 7 (very strongly), rate the degree to which you currently feel **emotionally** attracted (e.g., a sense of mutual understanding, support, intimacy and closeness):

To Women	1 (not at all)	2	3	4	5	6	7 (very strongly)
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2. Rate the degree to which you currently feel **romantically** attracted (e.g., a sense of longing or desire to be with):

To Women	1 (not at all)	2	3	4	5	6	7 (very strongly)
-------------	----------------------	---	---	---	---	---	-------------------------

3. Rate the degree to which you currently feel **sexually** attracted (e.g., feeling physiologically aroused, having sexual fantasies):

To Women	1 (not at all)	2	3	4	5	6	7 (very strongly)
-------------	----------------------	---	---	---	---	---	-------------------------

Attractions Questionnaire I—Men

Please answer ALL of the following questions regardless of your sex or sexual orientation.

1. On a scale of 1 (not at all to) to 7 (very strongly), rate the degree to which you currently feel **emotionally** attracted (e.g., a sense of mutual understanding, support, intimacy and closeness):

To Men	1 (not at all)	2	3	4	5	6	7 (very strongly)
--------	----------------------	---	---	---	---	---	-------------------------

2. Rate the degree to which you currently feel **romantically** attracted (e.g., a sense of longing or desire to be with):

To Men	1 (not at all)	2	3	4	5	6	7 (very strongly)
--------	----------------------	---	---	---	---	---	-------------------------

3. Rate the degree to which you currently feel **sexually** attracted (e.g., feeling physiologically aroused, having sexual fantasies):

To Men	1 (not at all)	2	3	4	5	6	7 (very strongly)
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Attractions II—Women

Please answer ALL of the following questions regardless of your sex or sexual orientation.

Think about ALL of your past and previous relationships with women (acquaintanceships, friendships, and romantic relationships). Keeping all of these in mind, please answer the following questions:

Do you currently or have you ever felt the following way about a woman? Indicate your rating (1 – 9) using the following scale:

1	2	3	4	5	6	7	8
9							
Not at all		Somewhat		Moderately		Quite true	
Extremely		true of me		true of me		of me	
true of me							

- 1) I want to confide virtually everything in her. _____
- 2) I want us to really understand each other. _____
- 3) I want us to have intimate communication. _____
- 4) I want her to know me-- my thoughts, my fears, and my hopes. _____
- 5) I really enjoy having her confide in me. _____
- 6) When we're apart, I'm eager to see her again. _____
- 7) I want to be with her all of the time. _____
- 8) I yearn to know all about her. _____
- 9) She always seems to be on my mind. _____
- 10) When I can't be with her, I really miss her. _____

Please answer ALL of the following questions regardless of your sex or sexual orientation.

Think about ALL of your past and previous relationships with men (acquaintanceships, friendships, and romantic relationships). Keeping all of these in mind, please answer the following questions using the same scale as above.

Do you currently or have you ever felt the following way about a man? Indicate your rating (1 – 9) using the following scale:

1	2	3	4	5	6	7	8
9							
Not at all		Somewhat		Moderately		Quite true	
Extremely		true of me		true of me		of me	
true of me							
true of me							

Do you currently or have you ever felt the following way about a **man**?

- 1) I want to confide virtually everything in him. _____
- 2) I want us to really understand each other. _____
- 3) I want us to have intimate communication. _____
- 4) I want him to know me-- my thoughts, my fears, and my hopes. _____
- 5) I really enjoy having him confide in me. _____
- 6) When we're apart, I'm eager to see him again. _____
- 7) I want to be with him all of the time. _____
- 8) I yearn to know all about him. _____
- 9) He always seems to be on my mind. _____
- 10) When I can't be with him, I really miss him. _____

Appendix D

Feedback Example

Dimensions of Attraction

NOTE. We are providing these results for your use only. The investigators will not examine individual feedback and will only analyze the data at an aggregate level.

Your Individual Well-Being Feedback

SELF-ESTEEM (Self-esteem scale)

This is a measure of your overall feelings of self-worth/self-acceptance.

HIGH SCORES: suggest that you have positive feelings about yourself.

MEDIUM SCORES: suggest that you might have mixed feelings (some positive, some dissatisfaction) about yourself.

LOW SCORES: suggest that you might feel dissatisfied with yourself.

Your self-esteem: (blue bar visual scale indicator presented)

Lower SELF-ESTEEM Higher SELF-ESTEEM

Note: The blue bar above indicates your score on the measure, with more bars indicating a higher score

Average scores (M & SD):

Lower SELF-ESTEEM Higher SELF-ESTEEM

Note: The single blue bar above indicates the average score on the measure, while the yellow around the blue bar indicates the range where most people (about 66%) tend to score on the measure.