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EMPIRICAL RESEARCH

Sexual Attraction, Sexual Identity, and Psychosocial Wellbeing in a National Sample of Young Women During Emerging Adulthood

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Abstract Identity-based conceptualizations of sexual orientation may not account adequately for variation in young women's sexuality. Sexual minorities fare worse in psychosocial markers of wellbeing (i.e., depressive symptoms, anxiety, self esteem, social support) than heterosexual youth; however, it remains unclear whether these health disparities exclusively affect individuals who adopt a sexual minority identity or if they also may be present among heterosexually-identified youth who report same-sex attractions. We examined the relationship between sexual attraction, sexual identity, and psychosocial wellbeing in the female only subsample (weighted, n = 391) of a national sample of emerging adults (age 18–24). Women in this study rated on a scale from 1 (not at all) to 5 (extremely) their degree of sexual attraction to males and females, respectively. From these scores, women were divided into 4 groups (low female/low male attraction, low female/high male attraction, high female/low male attraction, or high female/high male attraction). We explored the relationship between experiences of attraction, reported sexual identity, and psychosocial outcomes using ordinary least squares regression. The results indicated sexual attraction to be predictive of women's psychosocial wellbeing as much as or more than sexual identity measures. We discuss these findings in terms of the diversity found in young women's sexuality, and how sexual minority status may be experienced by this group.

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Introduction

The period from adolescence to adulthood contains challenges unique to non-heterosexuals: coming out, facing sexuality-related discrimination, and finding a place (or not) in the larger lesbian, gay, and bisexual (LGB) community (Institute of Medicine (IOM) 2011). Navigating this time period has many implications for the mental health of *sexual minorities*–a term public health researchers use to represent the full umbrella of non-heterosexual identities (Young and Meyer 2005). Correspondingly, sexual minorities during this developmental time period consistently report greater levels of psychological distress than their heterosexual peers (Bos et al. 2008; Cochran et al. 2003; IOM 2011). Lesbian, gay, and bisexual identified adolescents and youth report more symptoms of depression and higher levels of anxiety, and lower levels of positive indicators of mental health like self esteem than heterosexuals of the same age (IOM 2011). The origins of these mental health disparities have been explained through the sexual minority stress model, which outlines how ownership of a sexual minority identity (i.e., lesbian, gay, bisexual) in a culture that privileges heterosexuality opens up the individual to a series of external (i.e., discrimination and prejudice) and internal (i.e., sexual identity management and concealment) stressors that may deplete mental health over time (Meyer 2003). Thus, young sexual minorities encounter a climate which breeds these disparities.

Pivotal in these social processes is the construct of social support, as a sexual minority identity may influence the amount of social support available within a social network,

and it may buffer the effect of sexual minority stress on mental health outcomes (Meyer 2003). Ownership of a sexual minority identity, for example, may lead some youth to be rejected by their families and thus cut off from familial support, and in turn, low levels of familial support are associated with negative mental health outcomes like depressive symptoms (Needham and Austin 2010; Ryan et al. 2010; Williams et al. 2005). Similarly, sexual minority youth may be less connected to their peers due to their sexual orientation, and lack of connection can in turn take a toll on mental health (Williams et al. 2005). Generalized measures of perceived social support have been shown to mediate the relationship between sexual minority status and mental health outcomes like depressive symptoms and self esteem in a sample of emerging adults (Spencer and Patrick 2009). As such, social support from family and friends is a critical component in the psychosocial well being of sexual minorities during emerging adulthood.

While the validity and consistency of the relationships between psychosocial wellbeing (e.g., depressive symptoms, anxiety, self esteem, and social support) and sexual minority status are well acknowledged, less is known about diversity in these relationships. Meyer's (2003) sexual minority stress model focuses on the centrality of a non-heterosexual sexual identity as the catalyst for disparities in psychosocial well being; yet the psychosocial literature is less clear about how these relationships may play out for those whose sexuality falls outside of the heterosexual mainstream, but who do not claim a sexual minority (e.g., lesbian, gay, bisexual) identity. The emerging adulthood years are a time in which youth may be in the process of exploring their sexuality (Brogan et al. 2001; IOM 2011; Savin-Williams 2006), and a large body of literature suggests that female sexuality may be more fluid or plastic than labels like straight, gay, or bisexual can accommodate (Baumeister 2000; Diamond 2008; Diamond and Savin-Williams 2003; Russell and Consolacion 2003; Tolman and McClelland 2011). In light of this information, researchers who seek to understand psychosocial health disparities among sexual minority women during the emerging adulthood years may need to consider what aspect of sexual orientation (i.e., identity, behavior, or attraction) propels these differences.

Sexual Orientation in Health Research

Researchers have employed different operationalizations of sexual orientation (IOM 2011; Narring et al. 2003; Saewyc et al. 2004; Smith et al. 2003). Three primary dimensions of sexual orientation are commonly used: disclosed sexual behavior (i.e., male partners, female partners, both), reported sexual identity labels (i.e., gay, lesbian, bisexual), and expressed sexual attraction (i.e., male attracted, female attracted, both) (IOM 2011; Lesbian, Gay, and Bisexual Youth Sexual Orientation Measurement Work Group (LGB Measurement Work Group) 2003; Narring et al. 2003; Saewyc et al. 2004; Smith et al. 2003). Each of these dimensions has merits and deficits regarding who is included and excluded in research, and who is placed in one category or another for comparative analysis.

Sexual Behavior

A behavioral definition of sexual orientation has been useful in the study of the transmission, diagnosis, and treatment of sexually transmitted infections. This line of sexual health inquiry distinguishes individuals engaging in same-sex sexual behavior, regardless of their proclaimed social identities, from those who engaged only in heterosexual sex. The value of this method of categorization can be seen in examples such as an epidemiological study comparing cross-sectional data from women who have sex with women (WSW) and a control group of women who were not WSW in order to assess the risk of contracting sexually transmitted infections (Fethers et al. 2000), or within the multitude of studies examining HIV transmission between male partners (Mustanski et al. 2011). From an epidemiologic standpoint, the use of identity labels or reported same-sex attractions would introduce bias into studies of disease transmission, as those dimensions of sexual orientation would exclude individuals who engage in same-sex behavior but who do not identify as LGB, and/or include individuals who harbor same-sex attractions yet do not engage in same-sex behavior.

Notably, the aspects of behavioral measures of sexual orientation that are ideal for examining STI transmission are the same aspects that make behavior problematic for consideration of the mental health of sexual minority emerging adults. Developmentally, the teen and young adult years are a time of marked sexual variation and exploration, and a behavioral measure of sexual orientation overlooks the complicated story around sexuality during these years (Tolman and McClelland 2011). In places where LGB communities are small or absent, for example, emerging adults may claim a sexual minority identity label like lesbian or gay, but not come into contact with any potential romantic or sexual partners. Similarly, emerging adults may harbor same-sex attractions, but not be out in their identity or comfortable seeking out same-sex partners. Both of these scenarios (among many other potential possibilities) describe emerging adults who would be constructing identities as sexual minorities, and thus would be vulnerable to the processes of sexual minority stress, but they would be excluded from a behavioral definition of sexual orientation.

Sexual Identity

Identity labels are thought to avoid the reductive viewpoint of sexuality that behavioral measures connote and account for the personal salience and relevance of sexual orientation in the lives of sexual minorities. Young and Meyer (2005) argue that when studying the health of sexual minorities, the use of identity labels is essential, as any other indicator risks erasing an individual's self determined sexual identity and overlooking the related social consequences of owning these often stigmatized identities. In relation to mental wellbeing, sexual identity labels also may help create bonds between individuals who share these labels, facilitate access to social support, and promote the development and visibility of the LGBT community (Doty et al. 2010; Ramirez-Valles 2002). Doty et al. (2010), for example, found knowing and interacting with other LGB people to be associated with less psychological distress among self-identified lesbian, gay, and bisexual youth. In this study, use of sexual identity labels as the measure of orientation was critical, as the process of identity affirmation and validation appeared to be driving these youths' reported mental health status. Consequently, a sexual orientation measure based on behavior or attraction would have been inappropriate for assessing these identity-based relationships between social networks and mental health.

Of course, sexual identity labels also have their limitations. These identity labels reflect the current historical understandings of gender and sexuality as defined by the dominant cultural group, and thus these labels may not represent the full scope of sexual minorities (LGB Measurement Work Group 2003). For example, some racial and ethnic minorities in the US may be reticent to adopt labels like lesbian and gay due to the fact that many report experiencing racism from "mainstream" LGB culture as well as homophobia among people of their own race/ethnicity—a dual burden of stigma that can create a barrier to adoption of sexual minority identity labels (Bérubé 2001; Díaz et al. 2004). Alternatively, some researchers have reported racial/ethnic differences in the coming out process; for instance, Black and Latino youth may come out or adopt a sexual minority identity label later in life than their White peers (Dubé and Savin-Williams 1999). Thus, the use of identity labels in sexuality surveys might inadvertently exclude Black and Latino sexual minorities during emerging adulthood. Others have argued that, as social acceptance for sexual diversity grows, some young people may be turning away from traditional labels like lesbian and gay, and either resisting labeling their sexuality altogether *or* creating new terms to denote non-heterosexual identities (Savin-Williams 2006). In a recent sample of teenagers involved in high school gay-straight alliances, researchers found that the majority of non-heterosexual students still used traditional sexual identity labels like lesbian, gay, and bisexual, *but* almost 30 % of the involved teens categorized their sexual identity using language other than LGB (Russell et al. 2009). In a cultural landscape where these sexual identity designations carry multiple and changing meanings, over-reliance on them to denote sexual orientation may be limiting.

Sexual Attraction

The third approach to measuring sexual orientation, reported same-sex attraction, has been cited as capturing the largest cross section of individuals, perhaps covering some of the gaps left behind by behavior or identity measures (Saewyc et al. 2004). In fact, several studies specifically broaching this question of measurement with young people found that attraction measures may be understood most readily by this group (Austin et al. 2007; Friedman et al. 2004). In focus groups with adolescents, Friedman et al. (2004) found that sexual attraction was discussed consistently as fundamental to the participants' understanding of sexual orientation, while both behavior and identity were believed to be less relevant (i.e., persons could have sex with someone to whom they were not attracted or claim an identity for political reasons). In cognitive interviews with youth, Austin et al. (2007) found that their participants believed questions about attraction to males and females to be self-explanatory in their intent and non-threatening in their approach (i.e., people not wanting to claim a sexual minority identity could still comfortably report some same-sex attraction). Taken together, these studies appear to indicate that attraction is a salient dimension of sexual orientation among adolescents and emerging adults, and thus explorations of attraction and health disparities may be particularly well suited for these populations.

In 2003, the *Lesbian, Gay, and Bisexual (LGB) Youth Sexual Orientation Measurement Work Group* noted that sexual attraction was a useful mechanism for investigating mental health outcomes; however, to our knowledge, only a few studies have undertaken this methodology for examining sexual minority status and mental health among emerging adults. Russell and Consolacion (2003) used reported romantic attractions to same and other-sex partners along with relationship status to examine how these two domains interacted to predict mental health outcomes like depressive symptoms, anxiety, self esteem, and suicidal ideation. This study found that heterosexually-attracted singles were (as expected) the most protected in terms of mental health; however, same-sex attracted individuals who were in a same-sex relationship actually had equivalently low levels of anxiety to heterosexually-attracted singles (Russell and Consolacion 2003). The results of this study give credence to attraction being useful

in the investigation of mental health outcomes, as well as suggest that the social relationships of sexual minorities may be important in shaping these outcomes; however, this study did not differentiate between participants who were exclusively same-sex attracted and those who harbored attractions to both men and women. In a New Zealand survey, Skegg et al. (2003) used participants' reported lifetime and current sexual attractions to divide their sample of young adults into three groups (e.g., other-sex attraction only, minor same-sex attraction, and persistent major same-sex attraction) as a means to understanding self-harm among sexual minorities. They found that persistent same-sex attraction (i.e., reporting same-sex attraction both over the lifetime and currently) was related to an increased likelihood of having inflicted self-harm. Skegg et al.'s (2003) results lend further support to using attraction as a marker of sexual minority status; however, they too only investigated same-sex attraction as a unidirectional trait (i.e., present or absent). Furthermore, both of these studies leave unexamined the question of whether it is truly same-sex attraction that relates to psychological wellbeing, or whether these findings would persist after accounting for participants' identity labels. The current study attempts to further this line of research by differentiating between those with dual attraction to men and women and those with exclusively same-sex attractions, as well as determine whether the observable differences in psychosocial well being associated with sexual attraction are driven by sexual identity.

Given these considerations, researchers must take into account the developmental reality of the segment of the population with which they are working. Certainly, for young people who still may be undergoing the processes of sexual identity formation and coming out (Brogan et al. 2001; IOM 2011), identity labels may not be the most appropriate means to measure sexual orientation. Behavior measures may be similarly flawed in that young adults with same-sex attractions may not yet be sexually active with partners of the same-sex (IOM 2011). These gaps in identity and behavioral measures suggest that another measure such as same-sex attraction may be a useful tool in assessing sexual orientation during the young adult years. We address this issue by examining whether sexual attraction was associated with psychological wellbeing, after accounting for participants' self-reported sexual identity.

The Role of Gender

The inadequacies of identity or behavior-based approaches to sexual orientation may be amplified when investigating women at this developmental stage. Strong evidence suggests that the coming out process for women does not follow a linear trajectory, and is distinct from that of men in its timing and sequencing (Diamond 2008; Diamond and Savin-Williams 2003). Women may come out at an older age than men, may fluctuate between sexual identity labels over time, and may go through periods of engaging in and abstaining from same-sex sexual behavior (Diamond 1998, 2003, 2008; Diamond and Savin-Williams 2003). While recent research focused on LGB-identified youths finds women's sexual identities to be more stable than males (Rosario et al. 2006), studies of the general population (i.e., heterosexual and sexual minority females alike) suggest greater variation. For example, Russell and Consolacion (2003) found that heterosexually attracted adolescent girls were seven times as likely to be in a same-sex relationship as heterosexually attracted adolescent boys, results that suggest that the boundaries of female sexuality may be more nebulous than male sexuality. Naming this phenomenon *erotic plasticity*, Baumeister (2000) posits that women's sexual arousal and attractions may be more flexible to social and cultural constraints than men's. Given young women's high degree of fluidity in their sexual identities (i.e., in this study we use the term *fluidity* to describe both sexual identities that fall outside of rigid, common cultural understandings of what it means to be lesbian, bisexual, or heterosexual *and* ownership of different sexual identity labels over time) and variability in their sexual behavior, health research relying solely on measures of identity or behavior would be fated to miss significant portions of young women; however, young women's reports of same-sex attractions might be inclusive of a broader range of women.

Young women excluded by identity- or behavior-based approaches to defining sexual orientation are often neglected in research on sexual minorities even though they may experience stress similar to more traditionally defined minority status. In fact, evidence exists that these women may experience more stress because of conflicts between their identity or behavior, and their attractions. A line of research exploring the social position of women who identify their attractions as *mostly heterosexual* (i.e., thus not openly identifying as lesbian or bisexual, but expressing some same-sex attraction) finds them to be a population experiencing observable health disparities (Corliss et al. 2009). Corliss et al. (2009) discovered that women who reported their sexual attractions to be mostly heterosexual also reported *less* social support and *more* mental health and substance use problems than women who reported their sexual attractions as *exclusively heterosexual*. This finding suggests that an individual need not openly identify as lesbian and gay to be affected by some of the consequences of sexual minority stress such as depressive symptoms and substance use. Consequently, it is important to examine whether women who have fluid

conceptions of sexuality are also vulnerable to sexuality-related stress and decreased psychological wellbeing.

Current Study

Given the wide variation in how young women claim and experience their sexuality, we examined whether the attraction dimension of sexual orientation was related to psychosocial wellbeing among women in their emerging adulthood years (ages 18–24). First, we examined whether participants' attraction to men and women mapped onto their self-reported identities and sexual behaviors. Consistent with prior findings (Baumeister 2000; Diamond 2008; Diamond and Savin-Williams 2003; Russell and Consolacion 2003; Tolman and McClelland 2011), we hypothesized that women's self-rated attraction to males and females, respectively, would map *partially* onto participants' sexual identities and behaviors. We then sought to understand how reported same-sex attraction related to young women's psychosocial wellbeing (e.g., depressive symptoms, anxiety, self esteem, social support). We hypothesized that female attracted women would have higher levels of mental distress (e.g., depressive symptoms, anxiety) and lower levels of self esteem and social support than women in the male attraction group. Similarly, we hypothesized that women attracted to males and females (bi-attraction) would also have higher levels of mental distress and lower levels of self esteem and social support than women who were male attracted. Finally, we sought to examine whether these relationships would persist even after accounting for participants' self-reported sexual identities. Consistent with prior literature suggesting that sexual identity measures may be limited in their ability to describe female sexuality (Diamond 1998, 2003, 2008; Tolman and McClelland 2011), we hypothesized that the observed relationships between attraction and psychological well-being would persist after accounting for sexual identity.

Methods

Sample

Recruitment Strategy

Participants were recruited using Web-based respondent driven sampling (webRDS) strategy (Bauermeister et al. 2012). To be eligible for the study, respondents had to be between the ages of 18 and 24, live in the United States, and have access to the Internet. The first wave of participants (seeds) was recruited through an online Facebook advertisement and selected based on race/ethnicity and region of the U.S. to help insure a more nationally representative sample. The remainder of the sample was recruited through referral chains from the original 22 seeds. We computed a statistical weight to correct for the intra-class correlation that resulted from the network-referral procedures (unweighted N = 3,448; weighted N = 829).

Description

For this analysis, we limited our analyses to the female subsample who had answered questions about sexual attraction (weighted, n = 391; see Table 1). The mean age for this group was 20.83 (SD = 1.82). Eight of these women identified as gay/lesbian, 23 as bisexual, and 357 as straight. Seventy percent of the sample self-identified as White/European American, 11 % Asian/Pacific Islander, 5 % Black/African American, 9 % Hispanic/Latino, 1 % Native American, and 4 % Mixed Race/Other. The majority of our sample had some college (51 %), a bachelor's degree (16 %), or graduate school (5 %) education. Thirty-six percent of the sample resided in the Northeast of the United States, 22 % in the Midwest, 28.9 % in the South, and 13.3 % in the West (i.e., categorized by US Census region and the state that participants reported currently residing in). See Table 2 for a breakdown of these descriptive statistics by attraction group.

Procedure

Each prospective participant logged into the survey portal using a unique identifying number (UID) and completed a short eligibility screener. Eligible participants read and consented to the study, and completed the survey assessing their socio-demographic characteristics, Internet use, lifetime and recent alcohol or other drug (AOD) use, lifetime and recent sexual behaviors, and psychosocial variables (e.g., mental health, social support). On average (median split), the questionnaire took 37 min to complete. Participants received a monetary incentive for their participation ($20 dollars) and were offered an additional $10 each for up to five additional young adults who were referred into the study and completed the questionnaire. Incentives were paid with a VISA e-gift card. Study data were protected with a 128-bit SSL encryption and kept on a secure firewalled server at the University of Michigan. The study was approved by the University of Michigan IRB.

Measures

Sexual Attraction

Our primary independent variable of interest was the degree to which women reported being attracted to men and women in the past year, respectively. Participants rated on a scale from 1 (not at all) to 5 (extremely) their degree

Table 1 Descriptive statistics of analytic variables by attraction (N = 391)

	Total sample	Low attraction	Female attraction	Bi-attraction	Male attraction
Sexual identity					
Straight/heterosexual	357 (91.1 %)	149 (100.0 %)	37 (60.7 %)	46 (86.8 %)	125 (100.0 %)
Lesbian/homosexual	8 (2.0 %)	0 (0.0 %)	8 (13.0 %)	0 (0.0 %)	0 (0.0 %)
Bisexual/other	23 (5.9 %)	0 (0.0 %)	16 (26.2 %)	7 (13.2 %)	0 (0.0 %)
Sexual behavior					
Lifetime with a female	39 (9.9 %)	4 (2.7 %)	22 (36.1 %)	10 (18.5 %)	3 (2.4 %)
Lifetime with a male	273 (69.6 %)	84 (56.4 %)	44 (71.0 %)	47 (88.7 %)	98 (79.0 %)
30 days with a female	12 (3.1 %)	0 (0.0 %)	10 (16.1 %)	2 (3.7 %)	0 (0.0 %)
30 days with a male	188 (48.0 %)	52 (34.9 %)	26 (41.9 %)	33 (62.3 %)	77 (61.1 %)
Sexual attraction					
Female attraction	1.52 (.97) (1.00–5.00)	1.00 (.00)	2.94 (1.12)	2.54 (.83)	1.00 (.00)
Male attraction	4.06 (1.12) (1.00–5.00)	3.26 (.97)	3.27 (.97)	5.00 (.00)	5.00 (.00)
Psychological variables[†]					
Depressive symptoms	1.98 (.57) (1.00–4.00)	1.90 (.52)	2.20 (.63)	2.12 (.64)	1.90 (.52)
Anxiety	2.03 (.86) (1.00–5.00)	1.91 (.80)	2.23 (.92)	2.24 (1.02)	1.96 (.80)
Self-esteem	3.03 (.56) (1.00–4.00)	3.04 (.56)	2.86 (.57)	2.99 (.59)	3.12 (.52)
Social support variables[†]					
Maternal support	3.86 (1.19) (1.00–5.00)	3.86 (1.20)	3.36 (1.28)	3.85 (1.17)	4.12 (1.08)
Peer support	3.86 (.92) (1.00–5.00)	3.68 (.99)	3.65 (.95)	3.95 (.78)	4.13 (.79)

[†] Values displayed in this descriptive table are the unstandardized means for each scale. In the regression models, all scale values were z-scored

Table 2 Additional descriptive statistics by attraction groups (N = 391)

	Total sample	Low attraction	Female attraction	Bi-attraction	Male attraction
Race/ethnicity					
White/Euro American	274 (100 %)	93 (33.9 %)	42 (15.3 %)	40 (14.6 %)	99 (36.1 %)
Black/African American	20 (100 %)	8 (40.0 %)	4 (20.0 %)	3 (15.0 %)	5 (25.0 %)
Hispanic/Latino	33 (100 %)	12 (36.4 %)	5 (15.2 %)	5 (15.2 %)	11 (33.3 %)
Asian/Pacific Islander	45 (100 %)	28 (62.2 %)	8 (17.8 %)	4 (8.9 %)	5 (11.1 %)
Other	18 (100 %)	8 (44.4 %)	3 (16.7 %)	1 (5.6 %)	6 (33.3 %)
Education level					
High school or less	98 (100 %)	45 (45.9 %)	14 (14.3 %)	11 (11.2 %)	28 (28.6 %)
More than high school	294 (100 %)	105 (35.7 %)	48 (16.3 %)	43 (14.6 %)	98 (33.3 %)
US Census region					
Northeast	139 (100 %)	54 (38.8 %)	24 (17.3 %)	16 (11.5 %)	45 (32.4 %)
Midwest	87 (100 %)	34 (39.1 %)	10 (11.5 %)	11 (12.6 %)	32 (36.8 %)
South	113 (100 %)	44 (38.9 %)	18 (15.9 %)	18 (15.9 %)	33 (29.2 %)
West	52 (100 %)	18 (34.6 %)	10 (19.2 %)	9 (17.3 %)	15 (28.8 %)

of sexual attraction to males and females on separate survey items (i.e., "During the past year, how sexually attracted to (males/females) were you?"). To address the skewness in the attraction variables, we created attraction categories that took into account participants' relative degree of sexual attraction to women and men as compared to other women in the sample. Specifically, we standardized the male and female attraction values, respectively, and mean split the z-scored attraction measures into high and low attraction groups. Then, we utilized these cut offs to place women into four groups: low attraction (low female/low male attraction; n = 149), male attraction (low female/high male attraction; n = 126), female attraction (high female/low male attraction; n = 62), and bi-attraction (high female/high male attraction; n = 54).

Sexual Identity

Participants were also asked whether they identified as straight/heterosexual, gay/lesbian/homosexual, bisexual, or other. For analytic purposes, we collapsed bisexuals and others into one category reflecting sexual identities other than gay/lesbian or straight.

Sexual Behavior

Participants were asked two questions about their lifetime sexual behavior with females and males, "Have you ever had any sexual (genital) experiences with a female?" and "Have you ever had any sexual (genital) experiences with a male?" Similarly, participants answered two questions about their sexual behavior in the last 30 days, "During the past 30 days, how many female sexual partners have you had?" and "During the past 30 days, how many male sexual partners have you had?" The responses to the sexual behavior in the past 30 days questions were recoded into dichotomous outcomes for both male and female partners: Yes (male/female) sexual partners in the past 30 days; No (male/female) sexual partners in the past 30 days.

Depressive symptoms

We examined participants' degree of depressive symptoms using the Center for Epidemiologic Studies Depression (CES-D) scale (Radloff 1977). The CES-D scale contains eleven items designed to characterize symptoms of depression (e.g., "I felt fearful" and "I could not 'get going'"). Participants rated on a scale from 1 (rarely or none of the time) to 4 (most or all of the time), how frequently they had experienced these feelings over the last week. We took a mean score of the eleven items to use as our outcome for depressive symptoms—high values indicated higher levels of depressive symptoms ($\alpha = .84$).

Anxiety

We evaluated anxiety using the Brief Symptom Inventory (Derogatis and Melisaratos 1983). This scale contains six items that describe common symptoms of anxiety (e.g., "Nervousness or shakiness inside" and "Spells of terror or panic"). Participants rated on a scale from 1 (never) to 5 (very often) how often they had experienced these symptoms in the past week. The values of the six items were mean scored to create a single item measure of anxiety ($\alpha = .90$)—high scores indicated greater levels of anxiety.

Self-Esteem

To measure self-esteem, we used the Rosenberg (1989) Self-esteem scale, a ten item measure in which participants rated their level of agreement regarding a series of statements designed to assess their feelings of self-worth on a scale from 1 (strongly disagree) to 4 (strongly agree). We mean scored these ten items, with higher scores indicating more self-esteem ($\alpha = .89$).

Maternal Support

We assessed maternal support using a 5-item perceived social support measure, adapted from the Perceived Social Support from Family Scale (PSS-Fa) (Procidano and Heller 1983). Items included statements such as, "My mother or female person who raised me enjoys hearing what I think," and "I have a deep sharing relationship with my mother or female person who raised me.", and were also scored using a 5-point scale (1 = not true to 5 = very true). We calculated maternal support scores by taking the mean of these five items for each participant. Higher scores indicated more support ($\alpha = .96$).

Peer Support

We captured peer support using 5 items adapted from the Perceived Social Support from Friends Scale (PSS-Fr) (Procidano and Heller 1983). Participants completed this scale, addressing relationships with friends (e. g., "I rely on my friends for emotional support"). This measure was answered on a 5-point scale from 1 (Not true) to 5 (very true). We calculated a mean score for peer support—higher scores indicated more peer support ($\alpha = .92$).

Data Analytic Strategy

We first examined and compared the three sexual orientation measures to each other using descriptive statistics. We then ran a series of ordinary least squares (OLS) regression models in order to examine the relationship between sexual

attraction and our social and psychological outcomes. OLS was ideal for this analysis, as it provided a mechanism for a multivariate assessment of several independent predictors (i.e., participants' attraction groups, participants' self reported identities) in relation to a single outcome variable (i.e., depressive symptoms, anxiety, self esteem, social support). For each outcome, we examined differences by attraction categories (Model 1) using the male attraction category as the referent group. In Model 2, we added sexual identity variables as a second block, with heterosexual-identified women serving as a referent group. We evaluated the standardized Beta coefficient to ascertain if these two methods of capturing sexual orientation explained different or overlapping portions of the variance of our outcome variables. Due to concerns about powering the analyses in Model 2 with the relatively small size of our lesbian subgroup (n = 8), we also tested these associations with lesbian and bisexual women collapsed into one sexual minority category (n = 31). Because the results of the sexual minority identity variable were consistent with our original tests and we desired conceptual clarity around lesbian and bisexual women possessing two distinct sexual identities, we present only the results from the original Model 2 structure. Furthermore, we also tested models that examined social support as a potential mediator and moderator of the relationship between attraction and mental health; however, none of these models were significant, and we have omitted them from this discussion. Finally, we conducted analyses to examine if the results changed by including sociodemographic characteristics such as race/ethnicity and education. We reran our regression models including these domains, and found no meaningful relationships between these sociodemographic characteristics and the outcomes, nor did the relationships between attraction, identity, and the outcomes vary once we accounted for race/ethnicity and education. Thus, the final models presented exclude race/ethnicity and education variables. For brevity, data from these additional models are not shown.

Results

Attraction as Measure of Sexual Orientation

We examined how the attraction categories (i.e., low attraction, male attraction, female attraction, and bi-attraction) compared to other standardized markers of sexual minority status (i.e., sexual identity, sexual behavior) (see Table 1). Consistent with our first hypothesis, sexual identity and sexual behavior variables mapped *partially* onto our constructed attraction categories. The Pearson's Chi-square statistic of the comparison of attraction by reported identity was statistically significant ($\chi^2 = 114.85, p < .001, df = 6$). The low attraction and male attraction groups were composed entirely of women who identified themselves as straight or heterosexual. Within the female attraction group, 61 % identified as straight or heterosexual, 13 % identified as lesbian or homosexual, and 26 % identified as bisexual. Within the bi-attraction group, 87 % identified as straight or heterosexual and 13 % identified as bisexual.

Four separate analyses were run to examine attraction groups by lifetime sexual behavior with females and males respectively. Within the total sample, 10 % had some lifetime sexual experiences with women. Across our attraction categories, 3 % of the low attraction women had some sexual experience in their lifetime with women, versus 36 % of female attraction women, 19 % of bi-attraction women, and 2 % of male attraction women. Within our total sample, 70 % of the women reported some lifetime sexual experiences with men. Across the attraction categories, 56 % of low attraction women had some experiences with men, versus 71 % of female attraction women, 89 % of bi-attraction women, and 79 % of male attraction women.

Within the total sample, 3 % of participants had at least one female sexual partner in the last 30 days. Across attraction categories, 0 % of low attraction women, 16 % of female attraction women, 4 % of bi-attraction women, and 0 % of male attraction women had a female partner in the last 30 days. In the entire sample, 48 % had at least one male sexual partner in the last 30 days. By attraction category, 35 % of low attraction women, 42 % of female attraction women, 62 % of bi-attraction women, and 61 % of male attraction women had at least one male partner in the last 30 days.

Depressive Symptoms

Consistent with our second and third hypotheses, both bi-attraction and female attraction women on average experienced more symptoms of depression than male attraction women. When we tested the relationship between attraction and depressive symptoms (see Table 3), we found women in the bi-attraction group reported .44 standard deviations more depressive symptoms than women in the male attraction group. Women in the female attraction group also scored .55 standard deviations higher on the CES-D than male attraction women. The addition of the sexual identity variables in Model 2 did not change the strength and direction of these relationships. As anticipated in our fourth hypothesis, sexual identity was not uniquely related to depressive symptoms after accounting for attraction.

Anxiety

The anxiety results were similar to those for depressive symptoms across attraction categories: the bi-attraction

Table 3 Mental health variables as a function of attraction and identity

	Attraction model			Attraction and identity model		
Variables	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Depressive symptoms (n = 388)						
Attraction						
Constant	−0.15	0.09		−0.16	0.09	
Low attraction (LM/LF)	0.03	0.12	0.01	0.03	0.12	0.01
Female attraction (LM/HF)	0.55***	0.15	0.2	0.45**	0.17	0.17
Bi-attraction (HM/HF)	0.44**	0.16	0.15	0.37*	0.16	0.13
Identity						
Lesbian/homosexual				0.08	0.38	0.01
Bisexual/other				0.32	0.22	0.08
F	6.18***			4.10***		
Anxiety (n = 389)						
Attraction						
Constant	−0.08	0.09		−0.08	0.09	
Low attraction (LM/LF)	−0.05	0.12	−0.02	−0.05	0.12	−0.02
Female attraction (LM/HF)	0.32*	0.15	0.12	0.28	0.18	0.1
Bi-attraction (HM/HF)	0.34*	0.16	0.12	0.31	0.16	0.11
Identity						
Lesbian/homosexual				−0.2	0.38	−0.03
Bisexual/other				0.23	0.23	0.06
F	3.46*			2.39*		
Self-esteem (n = 387)						
Attraction						
Constant[†]	0.15	0.09	–	0.15	0.09	–
Low attraction (LM/LF)	−0.14	0.12	−0.07	−0.14	0.12	−0.07
Female attraction (LM/HF)	−0.45**	0.16	−0.16	−0.41*	0.18	−0.15
Bi-attraction (HM/HF)	−0.22	0.16	−0.08	−0.18	0.17	−0.06
Identity						
Lesbian/homosexual				0.36	0.38	0.05
Bisexual/other				−0.3	0.23	−0.08
F	2.85*			2.39*		

[†] Male attraction (HM/LF) served as the referent group; * $p < .05$; ** $p < .01$; *** $p < .001$

group scored .34 standard deviations higher on the anxiety scale than participants in the male attraction group (see Table 3). Participants in the female attraction group scored .32 standard deviations higher on the anxiety scale than those in the male attraction group. Yet, contrary to our fourth hypothesis about attraction being independently related to anxiety, when we added the sexual identity variables to this model, the relationships between attraction and anxiety disappeared.

Self-Esteem

In our examination of self esteem, we found support for our second hypothesis that female attraction would predict worse self esteem, but no support for our supposition that this pattern would hold true for bi-attraction women as well. In the model examining levels of reported self-esteem across attraction (see Table 3), we found that female attraction women reported .45 standard deviations lower self-esteem than male attraction women. We noted no other mean differences across attraction categories. Consistent with our hypothesis about the role of sexual identity, the strength and direction of these relationships did not change with the addition of the sexual identity variables.

Maternal Support

We examined differences in the levels of maternal support across attraction groups (see Table 4 for all social support results). These results supported our ideas about female

Table 4 Social support variables as a function of attraction and identity

Variables	Attraction model			Attraction and identity model		
	B	*SE B*	*β*	*B*	*SE B*	*β*
Maternal support (n = 384)						
Attraction						
Constant	0.20*	0.09		0.21*	0.09	
Low attraction (LM/LF)	−0.21	0.12	−0.1	−0.21	0.21	−0.1
Female attraction (LM/HF)	−0.62***	0.15	−0.23	−0.43*	0.17	−0.16
Bi-attraction (HM/HF)	−0.21	0.16	−0.07	−0.15	0.16	−0.05
Identity						
Lesbian/homosexual				−0.39	0.38	−0.05
Bisexual/other				−0.53*	0.23	−0.13
F	5.49***			4.46***		
Peer support (n = 389)						
Attraction						
Constant	0.28***	0.09		0.28***	0.09	
Low attraction (LM/LF)	−0.47***	0.12	−0.23	−0.47***	0.13	−0.23
Female attraction (LM/HF)	−0.51***	0.15	−0.19	−0.55**	0.17	−0.2
Bi-attraction (HM/HF)	−0.18	0.16	−0.06	−0.19	0.16	−0.07
Identity						
Lesbian/homosexual				0.27	0.37	0.04
Bisexual/other				0.02	0.22	0.01
F	6.66***			4.09***		

† Male attraction (HM/LF) served as the referent group; * $p < .05$; ** ; $p < .01$; *** $p < .001$

attracted women, but not about bi-attraction women. In Model 1 (i.e., attraction variables alone), women in the female attraction group reported *lower* maternal support than women in the male attraction group (B = −0.62), but we found no differences in maternal support for low attraction or bi-attraction women. As anticipated, the strength and direction of these relationships did not change with the addition of the identity variables (Model 2); however, unexpectedly, bisexual identity had a unique effect on women's reported level of maternal support: those who reported their sexual identity as bisexual or other had *less* maternal support than male attraction, heterosexual identified women (B = −0.53).

Peer Support

Finally, we modeled differences in levels of peer support across attraction groups. In line with our a priori assumptions about the relationship between sexual attraction and peer support, in Model 1 women in the female attraction group reported *lower* levels of peer support than women in the male attraction group (B = −0.51); however, we found no significant differences in level of peer support for bi-attracted women. Quite unexpectedly, women in the low attraction group reported *less* peer support than women in the male attraction group (B = −0.47). As predicted in our hypotheses, in Model 2 the strength and direction of these relationships did not change, once sexual identity was included in the model.

Discussion

Young women experience their sexuality in multiple, nuanced ways–exploring and defining burgeoning sexual identities during emerging adulthood, owning different sexual identities at different times, and contending with sexual behaviors and attractions that may be seemingly discordant with their current sexual identity (Baumeister 2000; Brogan et al. 2001; Diamond 2008; Diamond and Savin-Williams 2003; IOM 2011; Rosario et al. 2006; Russell and Consolacion 2003; Savin-Williams 2006). While the health literature largely points to the fact that sexual minorities during emerging adulthood experience depleted psychosocial wellbeing as compared to heterosexual youth (Bos et al. 2008; Cochran et al. 2003; IOM 2011), less has been written on how the variation in young women's sexuality may influence these relationships. In this study, we utilized young women's self-rated sexual attraction to women and men as a mechanism to expand

the scope of identity-based definitions of sexual orientation. By taking this approach, we found that psychosocial wellbeing (i.e., depressive symptoms, anxiety, lower self-esteem, reduced social support) was compromised among women who reported greater than average same-sex attractions, and these effects appeared to operate independently from reported sexual identity. These results provide evidence that, for young women, ownership of a sexual identity may not be as relevant to sexuality-related disparities in psychosocial wellbeing as same-sex attraction, and that ownership of same-sex attractions in a culture that privileges other-sex attractions may be enough to compromise psychosocial wellbeing.

When examining our attraction measure of women's orientation to women's reported sexual identity and sexual behavior, we found that the sexual attraction groups we created overlapped in theoretically sound ways with both sexual identity and sexual behavior items. Lesbian identified women were all captured within our female attraction group, while bisexual women were split between the bi-attraction and female attraction groups. Similarly, most individuals who reported sexual experiences with women in their lifetime and in the past 30 days were categorized in the female attraction and bi-attraction groups, though notably, for the lifetime sexual behavior variable, some of women who had female sexual partners could also be found in our other two attraction categories—a finding that validates the convention that women's sexuality may be more fluid or plastic than current explanatory categories of sexuality permit (Baumeister 2000; Diamond 2008; Diamond and Savin-Williams 2003; Rosario et al. 2006; Russell and Consolacion 2003). The degree of correspondence between our attraction categories and the other two domains of sexual orientation (i.e., identity and behavior) lends support to the predictive validity of these attraction categories. Furthermore, by grouping women according to whether they were *on average* more or less attracted to male and female partners than other women in their age, we appeared to expand the scope of the sexual orientation measure. The accuracy and breadth of these attraction categories may help account for some of the sexually fluid women who do not identify with labels like lesbian or bisexual and are not currently sexually active with female partners (Diamond 2008).

Importantly, we found evidence that young women's possession of same-sex attraction opens them up to some of the same disparities of psychosocial well being experienced by LGB identified people. Similar to the results of Russell and Consolacion (2003), we found that women in the female attraction and bi-attraction groups fared less well than women in the male attraction group on measure of depressive symptoms and anxiety, and women in the female attraction group fared worse on measures of self-esteem. The current study also advances the literature on sexual minority status and social support by demonstrating that same-sex attraction among young women also relates to differences in their social relationships during emerging adulthood. Consistent with prior research with emerging adults (Elkington et al. 2011), we noted that parental and peer support had unique relationships with our outcomes of interest. Furthermore, we noted disparities in peer and parental support. In line with research on sexual minority identities being associated with reduced social support (Needham and Austin 2010; Ryan et al. 2010; Williams et al. 2005), women in the male attraction group had the highest levels of social support, and women in the female attraction group had the lowest levels of social support. The reflection of known trends in psychosocial disparities among sexual minorities during emerging adulthood in this study suggests that such an attraction measure of sexual orientation does not weaken our ability to examine health related consequences of sexuality-based stigma, and, in fact, may capture young women who may not identify with traditional lesbian or bisexual categories.

Indeed, what is compelling about our findings is the fact that these trends in the connection between sexual minority status and psychosocial outcomes were observable even though the majority of women in our sample across the female attraction and bi-attraction groups identified themselves as *heterosexual*. Previously, work on psychosocial wellbeing among sexual minorities has assumed that the ownership of a stigmatized sexual identity (e.g., lesbian, bisexual) results in social stress, prejudice, and isolation and, subsequently, to negative mental health sequelae (Meyer 2003); however, the results of our study invite an expanded explanation: an individual need not identify as lesbian or bisexual to experience these phenomena. Same-sex attractions, regardless of reported sexual identity, appear to be associated with higher rates of mental distress. In a heteronormative society where the expectation is that sexual attraction is directed only at other-sex partners, harboring more same-sex attraction than the majority of your peers may result in psychological strain. This interpretation echoes what some researchers have discovered in studying women who identify as *mostly heterosexual* in that they experience many of the psychosocial phenomenon associated with sexual minority stress (Corliss et al. 2009).

Our results build on previous work utilizing attraction as a method to examine psychosocial health disparities among sexual minorities in that we simultaneously controlled for participants' sexual identities (i.e., lesbian, bisexual) as a means to ensure that the relationships we observed could not be better explained by these social identities (Russell and Consolacion 2003; Skegg et al. 2003). In the majority of our analyses, when we controlled for sexual identity, the

relationship between attraction and the psychosocial outcomes was frequently unchanged (as in the case of peer support, depressive symptoms, self-esteem). In the case of anxiety, the addition of sexual identity to the model erased the significant relationships between attraction and anxiety; however, none of the identity labels were related significantly to the outcome either, perhaps suggesting that attraction *or* identity could be used to understand disparities of anxiety among sexual minority women. Consequently, for these outcomes, the possession of same-sex attractions appears to be the fundamental driver of observable differences in psychosocial wellbeing among young women during the emerging adulthood years, as much as and in some cases more so than ownership of a sexual minority identity.

The one exception to the lack of predictive power of the sexual identity labels was found in the relationship between maternal support, attraction, and identity. Initially, we were interested in the unique mental health state of the bi-attraction group, given the literature that expresses that prejudice directed at bisexual people (i.e., bi-phobia or bi-negativity) in heterosexual and LGB communities alike may predispose bisexuals to worse health outcomes (Dodge and Sandfort 2007; Klesse 2011). Interestingly, bi-attraction women in our sample reported equivalent degrees of anxiety and depressive symptoms to female attraction women, but fared *better* on self-esteem measures. This result suggests that being attracted to men and women while being heterosexually-identified does not predispose women to the same degree of mental strain as those who are predominantly attracted to women. Yet, in the maternal support analysis, bisexual *identity* was related to less maternal support, even after accounting for same-sex attraction. Possibly, ownership of bisexual identity, which may be stigmatizing in both straight and LGB contexts, may carry burdens not accounted for by attraction variables (Klesse 2011). Therefore, researchers interested in the study of bisexuality may need to pay special attention to the use of identity labels around sexual orientation.

Limitations and Strengths

This study had a few limitations. Given the skewness of the attraction variables and the relatively few number of women who reported high levels of same-sex attraction, we were unable to use the attraction measures as continuous scales. Instead, we opted to put women into categories according to their relative degree of sexual attraction to women and men as compared to other women their age. This approach, while helpful in providing clarity in our comparisons, may have masked some of the more nuanced differences of women's sexual fluidity as it relates to psychosocial wellbeing. Future research might benefit from testing the predictive properties of attraction scales as continuous rather than categorical. A second limitation of this inquiry is the fact that we were constrained to only a quantitative exploration of the efficacy of attraction as a measure of sexual orientation. In the future, a mixed methods approach would be useful. Incorporating a qualitative component to the study would help explore the meaning of the reported same-sex attractions of heterosexual-identified women in our female attraction and bi-attraction groups. The integration of qualitative methods with the quantitative approach would allow a deeper understanding of the saliency of same-sex attraction in these young women's lives, especially in relation to the way they perceive their support networks and day to day emotional state. With regard to our social support variables, we were able to include measures of maternal and peer support, but due to missing data could not explore the relationship of sexual attraction and paternal support. This area remains important and understudied, and we recommend research to reveal how sexual orientation may interplay with social support from friends and family. Finally, despite a purposeful sampling strategy designed to illicit diversity across race and region in the US, our final sample underrepresented Black/African–American and Hispanic/Latino women. Continued inquiries into how psychosocial wellbeing relates to sexual orientation in these populations is warranted.

The above limitations notwithstanding, this study provides several unique contributions to our understanding of same-sex attraction. First, our sampling strategy of web-RDS aided in the recruitment of a national sample of emerging adults. Consequently, our final sample of women was diverse in age, region, and education—a unique asset in the study of sexual minorities. Second, our data were collected via web survey. Web data collection may encourage the elicitation of honest responses to sensitive subject matters such as sexual attractions, sexual behaviors, and sexual identity (Pequegnat et al. 2007). Third, we included psychometrically sound and widely used psychosocial measures which allow for useful comparisons across groups, populations, and studies. Fourth, we controlled for identity measures to examine the unique effects of our same-sex attraction measures. This decision may be the most important contribution as it is one of the few studies that included both measures in the same analysis and in a nationally representative sample.

Conclusion

Our results invite a rethinking of how young women experience their sexual orientation in relation to their psychosocial well being. Previously, theorists and researchers have surmised that ownership of a sexual

minority identity like lesbian, gay, or bisexual opens up an individual to discrimination and stress that may deplete psychosocial wellbeing (Meyer 2003). In our examination of psychological well being and same-sex attraction in sample of women during emerging adulthood, we found that possession of greater than average same-sex attraction was linked to disparities in psychosocial wellbeing even when women self identified as heterosexual. These findings point to two things. First, sexual attraction may be a more all-inclusive means to understanding the full range of diversity of young women's expressions of sexuality (Baumeister 2000; Diamond 2008; Diamond and Savin-Williams 2003; Tolman and McClelland 2011). Second, the possession of same-sex attraction may reflect the observed disparities in psychosocial well being across sexual orientation among youth (Bos et al. 2008; Cochran et al. 2003; IOM 2011). While certainly the identification of oneself as lesbian, gay, or bisexual may open up a person to external stressors that can negatively influence psychosocial well being, the possession of same-sex attractions may be the internal mechanism that leads women of this age group to feel different from their peers, regardless of how they choose to identify their sexual orientation. Accordingly, we recommend that future research into the psychosocial wellbeing of sexual minority women during emerging adolescence consider use of same-sex attraction as a more experientially accurate assessment of sexual orientation for this group.

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