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Same-Sex Sexuality and Adolescent Psychological Well-Being: The influence of sexual orientation, early reports of same-sex attraction, and gender

Justin Jager and

Eunice Kennedy Shriver National Institute of Child Health and Human Development

Pamela E. Davis-Kean

University of Michigan

Abstract

Emerging research has shown that those of sexual-minority (SM) status (i.e., those exhibiting same-sex sexuality) report lower levels of psychological well-being. This study aimed to assess whether this relation is largely in place by the onset of adolescence, as it is for other social statuses, or whether it continues to emerge over the adolescent years, a period when SM youth face numerous challenges. Moreover, the moderating influence of sexual orientation (identification), early (versus later) reports of same-sex attractions, and gender were also examined. Using data from Add Health, multiple-group latent growth curve analyses were conducted to examine growth patterns in depressive affect and self-esteem. Results suggested that psychological well-being disparities between SM and non-SM were generally in place by early adolescence. For many, the remainder of adolescence was a recovery period when disparities narrowed over time. Early and stable reporting of same-sex attractions was associated with a greater initial deficit in psychological well-being, especially among males, but it was also associated with more rapid recovery. Independent of the timing and stability of reported same-sex attractions over time, actual sexual orientation largely failed to moderate the relation between SM status and psychological well-being. Importantly, the sizable yet understudied subgroup that identified as heterosexual but reported same-sex attractions appeared to be at substantial risk.

Keywords

sexual orientation; psychological well-being; adolescence; developmental timing; same-sex sexuality

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Developmental research suggests that the period between late childhood and early adolescence is a time when disparities across race, sex, socio-economic status (SES), and overweight status have a profound influence on psychological well-being. For example, for both race (Gray-Little & Hafdahl, 2000; McLeod & Owens, 2004) and gender (Angold & Rutter, 1992; McLeod & Owens, 2004; Twenge & Nolen-Hoeksema, 2002), disparities in self-esteem, depressive affect, and anxiety do not emerge until around age 10, and then the size of the disparities continues to increase through early adolescence, after which differences in psychological well-being remain stable. Likewise, the influence (i.e., effect size) of SES and overweight status on psychological well-being increases dramatically during middle childhood and early adolescence, and then the size of the disparities remains

stable or even decreases through the remainder of adolescence (Miller & Downey, 1999; Twenge & Campbell, 2002). Consistent with writing by Sullivan (1953), such findings suggest that middle childhood and early adolescence are vulnerable times for youth, when being different from those around them can cause anxiety and stress.

An emerging area of particular concern for psychological well-being is the issue of same-sex sexuality or what is termed sexual minority status (SM). The majority status is exclusive heterosexual attraction or attraction to the opposite sex, and the minority status refers to those who are attracted to the same sex either in combination with an attraction to the opposite sex or solely to the same sex. Emerging research suggests that, on average, SM report somewhat lower levels of psychological well-being than do sexual majorities (Cochran, Sullivan, & Mays, 2003; Fergusson, Horwood, Ridder, & Beautrais, 2005; Galliher, Rostosky, & Hughes, 2004; Russell, 2006; Sandfort, de Graaf, & Bijl, 2003). However, researchers have yet to examine how the relation between SM status and psychological well-being varies across middle childhood and adolescence. Since this particular period proves formative for these other social statuses, perhaps this pattern generalizes to all social statuses, including SM status. Thus, the goal of this study was to examine how, if at all, the relation between SM status and psychological well-being varies across middle childhood and adolescence, with a particular focus on the adolescent years. Previous research on social status in general and SM status in particular was used as a guideline for examining when in development SM status may emerge as an issue for youth.

Why Are Middle Childhood and Early Adolescence So Important?

While there may be many reasons why middle childhood is an important developmental period with respect to the relation between social status and psychological well-being, two likely reasons for its importance are (1) advances in cognitive development during this period that render one's social status(es) more personally relevant to one's sense of self and (2) increases in the size and instability of the peer network.

Advances in cognitive development

Research has shown that the relationship between social status and psychological well-being is an indirect one and is, in part, mediated by the messages (both positive and negative) one receives regarding one's social status(es) (Fordham & Ogbu, 1986; Mays & Cochran, 2001; McLeod & Owens, 2004; Van Laar, 2000). Importantly, the extent to which those messages are internalized is directly related to their influence on psychological well-being (Herek & Garnets, 2007; Steele, 1997; Williams & Williams-Morris, 2000). What is often overlooked is that the following three cognitive abilities must be acquired before the messages regarding one's social statuses can be internalized: (1) an awareness of the categories one belongs to; (2) the ability to perceive messages from others and society regarding the categories one belongs to; and (3) the ability to internalize membership in those categories as personally meaningful.

Harter's (2006; 1996) extensive research on the self suggests that it is not until middle childhood that youth have acquired the last of these three abilities. During middle childhood and early adolescence (8 – 12 years of age), children's cognitive ability to use more objective criteria and inter-individual comparisons for self-evaluation increases (Harter, 1996; Stipek & MacIver, 1989). The self also becomes more objective and outward focused. This newfound cognitive capacity enables youth to more fully link their attributes, including the social categories to which they belong, to how they actually feel about themselves (Davis-Kean, Jager, & Collins, 2009).

Increases in the size and instability of the peer network

The size (Cairns, Xie, & Leung, 1998) and instability (Cairns & Cairns, 1994; Nash, 1973) of peer networks peak during middle childhood. Cairns, Xie, & Leung (1998) contend that the increases in the size and instability of peer networks may be, at least in part, driven by changes associated with the transition to middle school, which may result in greater opportunities for interaction with a wider range of peers. As a consequence, just when youth are beginning to base their sense of personal value on inter-individual comparisons and using peers as a “social mirror” (Sullivan, 1953), they are also interacting with more peers and are more likely to be interacting with those peers for the first time. The combination of changes in cognition as well as changes in social context may underlie the emergence of disparities in psychological well-being across the levels of social status during middle childhood and early adolescence.

Sexual-Minority Status

In terms of the emergence of disparities in psychological well-being, it is not clear whether middle childhood is an important time period for SM as it is for race, gender, overweight status, and SES. An important question regarding SM status is as follows: When does one’s awareness of his or her SM status emerge? Is it early on in development like one’s awareness of race and sex, or is it later on in development like one’s awareness of being a college student or a parent?

Retrospective reports indicate that SM individuals recall being treated differently by others, often as early as age 8, before they develop or are even aware of their attractions to the same sex (Bell, Weinberg, & Hammersmith, 1981; Zucker, Wild, Bradley, & Lowry, 1993). They recall feeling different from their peers, and often this sense of feeling different has a negative valence and is centered around atypical, gender-related traits (Savin-Williams, 2005; Troiden, 1989). Retrospective reports also indicate that around the age of 10 or 11, many SM individuals recall their first awareness of attraction to the same sex (D’Augelli & Hershberger, 1993; Floyd & Stein, 2002; Friedman, Marshal, Stall, Cheong, & Wright, 2008; Rosario, Meyey-Bahlburg, Hunter, & Exner, 1996; Savin-Williams & Diamond, 2000). Thus, there is some evidence to suggest that awareness of one’s SM status may emerge during the middle childhood years. As such, just as was the case for race, sex, overweight status and SES, the years between middle childhood and early adolescence may prove quite formative with respect to the relation between SM status and psychological well-being.

Though one may acquire a vague sense of SM status during middle childhood (i.e., a sense of difference or initial awareness of feelings of same-sex attraction), coming to grips with one’s own sexuality does not end there. A subset of youth go on to realize during early adolescence that this attraction to the same sex is what society deems as homosexual, and then an even smaller subset go on to actually identify themselves (as opposed to just their sexual attractions) as homosexual or bisexual (D’Augelli & Hershberger, 1993; Rosario et al., 1996; Savin-Williams & Diamond, 2000). Awareness of sexual-minority status is a prerequisite for others’ messages regarding sexual minorities to be internalized as personally meaningful, and the period when one’s awareness of his or her SM status appears to form extends into late adolescence or even early adulthood. Thus the relation between SM status and psychological well-being may itself be in flux through late adolescence/early adulthood.

Complicating things further is the possibility that growing awareness of one’s SM status during adolescence will be accompanied by social isolation as well as victimization and stigmatization. In both the school and the home, many SM adolescents report feeling invisible (Garofalo et al., 1998; Hershberger & D’Augelli, 1995) and have a difficult time

finding other SM adults to confide in or other SM peers with whom to socialize (Herek & Garnets, 2007; Lewis, Derlega, Berndt, Morris, & Rose, 2001; Mills, Paul, Stall, Pollack, & Canchola; Morris, Waldom & Rothblum, 2001). Beyond feeling a level of invisibility, SM adolescents also face a disproportionate amount of peer harassment, bullying, and aggression from their non-minority peers (Herek & Sims, 2007; Mays & Cochran, 2001; Russell & Joyner, 2001). Thus at a time when SM adolescents are coming to grips with their status, they are typically doing so alone, perhaps in the face of heightened harassment and aggression. As a consequence, the influence of SM status on psychological well-being may prove stronger between mid- to late-adolescence than between middle childhood and early adolescence.

Moderators of Sexual-Minority Status and Psychological Well-Being

Available cross-sectional research has identified three factors that moderate the relation between SM status and psychological well-being: (1) sexual identification or orientation, (2) age of first awareness/disclosure, (3) and gender status. Importantly, to date the extent to which, if at all, these factors moderate the relation between SM status and growth in psychological well-being is unknown.

Sexual identification

While all those that exhibit same-sex sexuality share the status of SM, they vary dramatically as to whether or not they hold a SM identity as well as the nature of that identity, if any. Among those exhibiting same-sex sexuality, some identify as heterosexual, some as homosexual, and others as bisexual (Diamond, 2006). This heterogeneity in identification among those who exhibit same-sex sexuality could have implications for the relation between SM status and psychological well-being. For example, researchers who conceptualize sexual-identity formation as a progression through a set of stages have found among SM that those in the later stages report higher psychological well-being than do those in the earlier stages (Brady & Busse, 1994; Halpin & Allen, 2004; Levine, 1997). Researchers have also found among those who identify as bisexual or homosexual, acceptance of one's sexual identity is positively related to mental health (Hershberger & D'Augelli, 1995; Miranda & Storms, 1989; Rosario, Hunter, Maguen, Gwadtz, & Smith, 2001). Finally, there is some evidence to suggest that, relative to those who identify as homosexual, those who identify as bisexual may be at higher risk for deficits in psychological well-being (Balsam, Beauchaine, Mickey, & Rothblum, 2005; Jorm, Korten, Rodgers, Jacomb, & Christensen, 2002).

Age of first awareness/disclosure

The research above indicates that coming to terms with one's sexual orientation and integrating it within one's sense of self is associated with higher psychological well-being. However, the extent to which this is the case may vary with age. There are risks associated with disclosing your sexual orientation to others, such as increased victimization, the disruption of close personal relationships, and heightened disapproval from others (Corrigan & Mathews, 2003; McDonald, 2008). For some, these risks can outweigh the benefits of coming to terms with one's sexual orientation (Corrigan & Mathews, 2003; Friedman et al., 2008). Emerging research suggests that one factor related to whether or not the risks outweigh the benefits is age of first awareness or disclosure. For example, relative to those who progress through these milestones at a later age, those who are aware of their same-sex attractions or disclose their sexual orientation at younger ages report experiencing more gay-related discrimination, bullying, and disrupted relationships during adolescence, and they generally have fewer resources, both interpersonal and intrapersonal, to cope with these threats (D'Augelli & Hershberger, 1993; Friedman et al., 2008; Remafedi, 1991; Savin-

Williams, 1995). The increase in threats coupled with the decrease in sources of support is thought to translate into lower psychological well-being among those who progress through these milestones at an earlier age (Friedman et al., 2008; McDonald, 2008). In fact, Friedman et al. (2008) found that, relative to those who were first aware of same-sex attractions at an older age (adolescence), those who were first aware at an earlier age (middle childhood) reported lower psychological well-being and physical health during adulthood.

Gender

The relation between gender and psychological well-being appears to be muted among the sexual-minority population. That is, relative to the general population, where females tend to report lower levels of psychological well-being than males (Twenge & Nolen-Hoeksema, 2002), the gender differences within the SM population are diminished or absent (Balsam et al., 2005; Cochran et al., 2003; Elze, 2002; Fergusson et al., 2005).

Hypotheses and Key Questions

Though this study was partly exploratory in nature, the following hypotheses guided our examination. 1a) By early adolescence, we expected SM youth to report lower levels of psychological well-being than those of sexual-majority status; 1b) Disparities in psychological well-being among SM and sexual-majority individuals were predicted to increase during adolescence. By comparing the size of disparities at early adolescence (i.e., hypothesis 1a) to the extent, if any, that those disparities increase over adolescence (i.e., hypothesis 1b), we evaluated the relative influence of middle childhood and adolescence on the relation between SM status and psychological well-being. 2) Among those of SM status, we expected those of bisexual status to report lower psychological well-being at the onset of adolescence as well as lower growth in well-being across adolescence. 3a) In terms of initial status differences and growth differences, we expected earlier awareness of same-sex attractions to be associated with lower psychological well-being; and 3b) we expected that the disparities in psychological well-being between SM and non-SM would be larger among those SM reporting earlier awareness of same-sex attractions. (4) In terms of both intercept differences and growth differences, we expected psychological well-being disparities between SM and non-SM to be more pronounced among males.

Methods

Sample

The data for this study came from the National Longitudinal study of Adolescent Health (Add Health; Bearman et al., 1997), a multi-wave, nationally representative sample of American adolescents. Using a clustered sampling design, 80 high schools were recruited for participation. The sample of schools was stratified by region, urbanicity, school type, ethnic mix, and size. At the point of initial assessment (Wave 1), the total sample was 20,745 7th-12th graders. Two additional waves of data are available, each taking place approximately one (Wave 2) and six years later (Wave 3). The sample and retention rates for each wave are 14,988 (72%) and 15,170 (73%) respectively. For the present study, only those respondents who completed a sexual orientation measure at Wave 3, completed same-sex attraction measures at Waves 1, 2, and 3, had data for age, and were assigned a sample weight were included in the study ($N = 7,733$).

With respect to psychological well-being, respondents included in the study ($n = 7,733$) reported slightly lower levels of depression at Wave 1, $t(20,703) = 2.44$, $p < .05$, and Wave 3, $t(15,233) = 3.96$, $p < .001$, than those not included in the study ($n = 12,970$). Those included in the study also reported slightly higher levels of self-esteem at Wave 1, $t(20,681)$

= 2.99, $p < .01$; and Wave 2, $t(14,726) = 3.10$, $p < .01$. In every case where differences in psychological well-being were found, effect sizes were small. (No R^2 was larger than .005.) Finally, males ($X^2(1) = 75.28$, $p < .001$), and those in the older cohort ($X^2(1) = 18.08$, $p < .001$) were underrepresented among those included in the study.

Among those included in the study ($n = 7,733$), the amount of missing data on the psychological well-being indices was low (less than 0.1% at each Wave). In order to maximize the data and include all possible cases, we used Full Information Maximum Likelihood (FIML) estimation, a missing data algorithm available within Mplus (Muthen & Muthen, 1998–2009).

Procedure

The first wave of data was collected during 1994 and 1995 via in-home questionnaires. The questionnaires covered a range of topics: health status, nutrition, peer networks, family composition and dynamics, romantic partnerships, sexual partnerships, and risk behavior. Approximately a year later, respondents completed a second in-home questionnaire that was similar in content. Approximately six to seven years after initial assessment, respondents completed a third in-home questionnaire, one that was similar in content to the first but also covered such topics as romantic relationships, child-bearing, and educational histories.

Measures

Psychological well-being—We focused on two indices of psychological well-being: depressive affect and self-esteem. Depressive affect was based on a 9-item, truncated version of the CES-D (Radloff, 1977). An example item is: “During the past week, have you been bothered by things that usually do not bother you?” The possible range was from 0 to 3, with higher responses indicating higher levels of depressive affect. Cronbach alphas were .79, .79, and .80 for waves 1, 2, and 3 respectively. Self-esteem was based on a 4-item scale used previously by Regnerus & Elder (2003). An example item is: “You like yourself just the way you are.” The possible range was from 1 to 5, with higher responses indicating higher levels of self-esteem. Cronbach alphas were .83, .81, and .79 for waves 1, 2, and 3 respectively.

Sexual orientation and sexual-minority status—Based on the distinction between SM status (those exhibiting versus those not exhibiting same-sex sexuality) and sexual orientation (those identifying versus those not identifying as a SM), we classified individuals into one of four groups. Classification was based on a single question that was asked at Wave 3 only: “Please choose the description that best fits how you think about yourself.” The possible responses were: (a) 100% heterosexual (straight); (b) mostly heterosexual (straight), but attracted to people of your own sex; (c) bisexual – that is attracted to men and women equally; (d) mostly homosexual (gay), but somewhat attracted to people of the opposite sex; (e) 100% homosexual (gay); and (f) not sexually attracted to either males or females. All those who indicated no sexual attraction (response f) were dropped from analyses ($n = 74$), as were those who refused to answer the question ($n = 73$). All who identified themselves as 100% heterosexual (response a) were classified as *Heterosexual-identified/non-SM* ($n = 6,889$). All who indicated some level of same-sex sexuality (responses b, c, d or e) qualified as a SM ($n = 844$). Of these individuals, those who identified as gay (responses d and e) were classified as *Homosexual-identified/SM* ($n = 129$), those who identified as bisexual (response c) were classified as *Bisexual-identified/SM* ($n = 140$), and those who identified as straight but indicated an attraction to the same sex (response b) were classified as *Heterosexual-identified/SM* ($n = 575$).

Instability of reported same-sex attractions—At Wave 1 respondents were asked two yes/no questions: (1) “Have you ever had a romantic attraction to a female?” and (2) “Have you ever had a romantic attraction to a male?” For Waves II and III respondents were asked the same questions but were asked to indicate if they experienced these attractions since the last time they were interviewed. Using the reported same-sex attraction (or lack thereof) associated with one’s Wave 3 sexual orientation as the reference point, we created three dummy variables to assess instability in same-sex attraction – one for each wave. Among those who indicated a sexual orientation at Wave 3 that included same-sex attractions (i.e., Heterosexual-identified/SM; Bisexual-identified/SM; and Homosexual-identified/SM), a report at any given wave (i.e., Waves 1, 2, or 3) of no same-sex attractions was coded as 1, and a report of same-sex attractions was coded as 0. The opposite pattern was true for Heterosexual-Identified/non-SM (the only group that reported a sexual orientation at Wave 3 that did not include same-sex attractions). For this group a report of same-sex attractions at any given wave was coded as 1, while a report of no same-sex attraction was coded as 0.

In concrete terms, relative to the reported same-sex attraction (or lack thereof) associated with one’s Wave 3 sexual orientation, these dummy variables were an indication of inconsistency in reported same-sex attraction, with 1 indicating inconsistency and 0 indicating consistency. The Wave 3 instability dummy variable likely reflected confusion or measurement error, either in the Wave 3 sexual orientation measure or the Wave 3 questions pertaining to attraction to each sex. In contrast, the Wave 1 and 2 instability dummies may have reflected developmental changes or instability in awareness of and/or willingness to report same-sex attractions. For example, among those reporting a sexual orientation at Wave 3 that includes same-sex attractions, those who also reported same-sex attractions at Waves 1 and/or 2 may have become aware of their same-sex attractions at an earlier age than those who did not report same-sex attractions at Waves 1 and 2.

Consistent with previous research (Russell, 2006), preliminary analyses revealed that the independent influence of instability in reported same-sex attractions at Waves 1 and 2 on psychological well-being was modest and non-systematic. However, additional preliminary analyses indicated that (1) instability in same-sex attractions at both Waves 1 and 2 was strongly predictive of psychological well-being, (2) the influence of instability at Waves 1 or 2 (but not both) was modest, and (3) the influence of instability at Wave 3 was often nonsignificant. Based on these preliminary findings, we chose the three following dummy variables: (1) instability at Waves 1 and 2 versus all others; (2) instability at Waves 1 or 2 (but not both) versus all others; and (3) instability at Wave 3 versus all others. When each of these dummy variables were included as controls, the reference group became those who reported same-sex attractions (or lack thereof) over time that were consistent with their Wave 3 sexual orientation and the same-sex attractions (or lack thereof) that they reported along with that sexual orientation.

Cohort—Although age at Wave 1 ranged between 12 and 20 years of age, over 95% of the sample ranged between 13 and 18 ($M = 15.60$, $SD = 1.73$). We dichotomized the sample so that we could more closely examine how the relation between SM status and psychological well-being varied across adolescence. A dichotomous cohort variable was created: Those between the ages of 12 and 15 (51% of the sample) were classified as young, whereas those between the ages of 16 and 20 (49% of the sample) were classified as old.

Gender status was based on self-report. Respondents indicated whether they were male (0) or female (1).

Results

Basic Descriptive Statistics

The means, standard deviations, sample size, and relative percentage for each of the four sexual orientation groups (i.e., Heterosexual-identified/non-SM; Heterosexual-identified/SM; Bisexual-identified/SM; and Homosexual-identified/SM) are listed in Table 1. The percentages and frequencies for unstable and stable reports of same-sex attractions are listed in Table 2. Patterns of same-sex attraction across Waves 1 and 2 are listed in the first three columns. In the sample as a whole, 83.1% reported same-sex attractions at both Waves 1 and 2 that were consistent with the same-sex attractions (or lack thereof) associated with the sexual orientation that they reported at Wave 3. The remaining 16.9% of respondents reported Wave 1 and Wave 2 same-sex attractions that were inconsistent with the sexual orientation they reported at Wave 3: 8.7% were inconsistent at both waves and 8.2% were inconsistent at only a single wave. Generally, instability in these factors was higher among those of SM status. Wave 3 patterns of same-sex attractions are listed in the last two columns of Table 2. In the sample as a whole, 94.3% reported same-sex attractions at Wave 3 that were consistent with the sexual orientation that they reported at Wave 3. The remaining respondents (5.7%) reported same-sex attractions that were inconsistent. Generally, instability in these factors was higher among the Heterosexual-Identified/SM group. The last column of Table 2 lists those who reported same-sex attractions across all three waves that were consistent with the sexual orientation that they reported at Wave 3.

Sexual Orientation at Wave 3 and Adolescent Trajectories of Psychological Well-Being

In order to examine adolescent trajectories of psychological well-being, we used the growth curve model presented in Figure 1. The factor coefficients for the linear slope were set at 0, 1, and 6.5 because the average time between Waves 1 and 2 was 1 year, and the average time between Waves 1 and 3 was 6.5 years. The intercept factor measured initial (Wave 1) levels of psychological well-being, whereas the slope factor measured linear change in psychological well-being across Waves 1, 2, and 3. We used multiple-group analyses (Duncan, Duncan, Strycker, Li, & Alpert, 1999) to examine model differences across the four sexual orientation subgroups. All analyses were conducted within Mplus, Version 5.2 (Muthen & Muthen, 1998-2009). In order to account for Add Health's sampling design, we included a stratification variable and used a maximum likelihood estimator that is robust to the estimate of standard errors, as suggested by the administrators of Add Health when using Mplus (Chantala, 2003). All multi-group comparisons were based on χ^2 differences tests. When we conducted multi-group comparisons, only the model parameter of focus was constrained to be equal across the groups. Unless otherwise specified, all other model parameters (e.g., means, variances, and covariances) were free to vary across groups. Because ordinary χ^2 difference tests cannot be computed when using a robust maximum likelihood estimator (Muthen & Muthen, 1998-2009), differences in model fit were tested via the equations provided by Satorra and Bentler (1999). Due to space constraints, fit indices are not presented for each growth model, though in every case the fit was excellent (i.e., CFI > .95 and RMSEA < .05; McDonald & Ringo Ho, 2002).

Depressive affect—Pertinent results are listed in the first two columns of Table 3. Among the entire sample, intercept levels of depressive affect were low (i.e., .638 on a scale of 0 to 3), and growth in depressive affect was negative (−.022). Intercept levels of depressive affect were equivalent across the three SM groups, $\Delta\chi^2(2) = .342$, $p = .84$. However, collectively the three SM groups reported higher intercept levels of depressive affect (.778) than Heterosexual-Identified/non-SM (.619), $\Delta\chi^2(1) = 277.17$, $p < .001$. Among the three SM groups, growth of depressive affect was more negative among the Bisexual-identified/SM (−.021) and Homosexual-identified/SM (−.029) groups than it was

among the Heterosexual-identified/SM group ($-.010$), $\Delta X^2(1) = 4.27$, $p < .05$. Also, only the Heterosexual-identified/SM group differed from the Heterosexual-Identified/non-SM group ($-.023$), $\Delta X^2(1) = 5.052$, $p < .05$. In sum, at intercept the three SM groups did not differ from one another, but they collectively reported higher levels than Heterosexual-Identified/non-SM. For Heterosexual-identified/SM these initial differences increased over time, but for Homosexual-identified/SM and Bisexual-identified/SM these differences remained stable over time.

Self-esteem—In the sample as a whole, intercept levels of self-esteem were high (i.e., 4.085 on a scale of 1 to 5), and growth in self-esteem was positive but moderate (.019). Intercept levels of self-esteem were equivalent across the three SM groups, $\Delta X^2(2) = .790$, $p = .67$. However, collectively the three SM groups reported lower intercept levels of self-esteem (3.910) than did Heterosexual-identified/non-SM (4.108), $\Delta X^2(1) = 94.05$, $p < .001$. With respect to growth in self-esteem, none of the four sexuality groups differed from one another.

The influence of instability in reported same-sex attractions—The above analyses suggested that reported sexual orientation during early adulthood (i.e., Wave 3) was associated with psychological well-being during adolescence. Next we examined (1) whether instability in reported same-sex attractions was related to adolescent patterns of psychological well-being and (2) whether that instability influenced the relation between declared sexual orientation at Wave 3 and psychological well-being during adolescence. We did so by repeating the analyses above but including the following instability dummy variables as exogenous predictors of each growth factor: (1) unstable at Waves 1 and 2 (column 1 of Table 2), (2) unstable at Wave 1 or 2, but not both (column 2 of Table 2), and (3) unstable at Wave 3 (column 4 of Table 2). By including these dummy variables in the growth model, the reference group among the SM groups became those who reported stable same-sex attractions across all three waves, and the reference group among the Heterosexual-identified/non-SM group became those who consistently reported no same-sex attractions (column 6 of Table 2).

The influence of the three instability dummy variables on each psychological well-being growth factor is presented in Table 4. Based on multi-group analyses, the relation between the instability dummy variables and depressive affect did not differ across the three SM groups. However, the relation did differ between the SM groups and Heterosexual-identified, non-SM. The same was true for self-esteem. Consequently, in Table 4 the results are listed for Heterosexual-identified, non-SM and for the three SM groups combined, but they are not listed separately for each of the three SM groups. Focusing first on SM, in reference to those who persistently reported same-sex attractions at all three waves, those who reported no same-sex attractions at Waves 1 and 2 reported higher psychological well-being at intercept (i.e., lower depressive affect and higher self-esteem). However, they reported smaller increases in psychological well-being over time. Among Heterosexual-Identified/non-SM the relation between instability in reported same-sex attractions was much more muted, with those reporting same-sex attractions at both Waves 1 and 2 reporting lower depressive affect at intercept.

Controlling for instability in reported same-sex attractions did alter the relation between reported sexual orientation at Wave 3 and adolescent psychological well-being. Pertinent results are in the third and fourth columns of Table 3. Concerning depressive affect, intercept levels among the Heterosexual-identified/SM group and the Bisexual-identified/SM group were equivalent, $\Delta X^2(1) = 2.65$, $p = .11$. Collectively, however, they were higher than levels of depressive affect among both the Homosexual-identified/SM group, $\Delta X^2(1) = 4.06$, $p < .05$, and the Heterosexual-Identified/non-SM group, $\Delta X^2(1) = 358.96$, $p < .001$. In

addition, the Homosexual-identified/SM group reported higher intercept levels than the Heterosexual-Identified/non-SM group, $\Delta X^2 (1) = 163.41$. Taken together, at intercept the Heterosexual-Identified/non-SM group reported the lowest depressive affect, followed by the Homosexual-identified/SM group, followed by the Heterosexual-identified/SM and Bisexual-identified/SM groups, who reported equivalent levels to one another as well as the highest levels overall. Growth in depressive affect was equivalent across the three SM groups, $\Delta X^2 (2) = 1.141$, $p = .56$. However, declines in depressive affect over time were more evident among the SM groups ($-.072$) than among the Heterosexual-Identified/non-SM group ($-.023$), $\Delta X^2 (1) = 38.79$, $p < .001$. There were fewer group differences in self-esteem. At intercept the three SM groups reported equivalent levels of self-esteem, $\Delta X^2 (2) = 2.91$, $p = .23$, but collectively they reported lower levels of self-esteem than the Heterosexual-Identified/non-SM group, $\Delta X^2 (1) = 67.84$, $p < .001$. There were no group differences in the growth of self-esteem.

Summary—Wave 3 sexual orientation was associated with psychological well-being. It appeared to have a stronger relation with intercept levels than with growth, with SM reporting lower psychological well-being at intercept. Among the SM groups, early and stable reporting of same-sex attractions was associated with lower initial levels of psychological well-being but greater increases in psychological well-being over time. Within the Heterosexual-Identified/non-SM group, early and stable reporting of no same-sex attractions was associated with lower initial levels of depressive affect. Relative to cases of unstable same-sex attractions, the relation between Wave 3 sexual orientation and adolescent depressive affect was different among those who reported stable same-sex attractions. Specifically, after controlling for instability in reported same-sex attractions, the discrepancy between SM and Heterosexual-Identified/non-SM was larger at the intercept; however, SM also reported greater increases in psychological well-being over time relative to Heterosexual-Identified/non-SM. Thus, relative to those reporting unstable sexual attractions over time, among those reporting stable sexual attractions over time, the initial gap in psychological well-being between SM and Heterosexual-Identified/non-SM was larger; however, that gap also closed at a faster rate over time.

Sexual-Minority Status and Psychological Well-Being: Cohort and gender differences

Building on earlier analyses, we next examined whether the relation between same-sex sexuality and psychological well-being varied across cohort and gender. Preliminary analyses indicated that cohort differences and gender differences in psychological well-being were equivalent across the three SM groups. Consequently, for this portion of the analyses we did not distinguish between the individual SM groups but instead compared all SM to the Heterosexual-Identified/non-SM group.

Cohort—In order to examine differences across cohort, we used a cohort-by-SM-status grouping variable that broke respondents into four groups: (1) young Heterosexual-Identified/non-SM; (2) old Heterosexual-Identified/non-SM; (3) young SM; and (4) old SM. When using this grouping variable, we used the model constraint command within Mplus (Muthen & Muthen, 1998–2009), which allows for the creation of new model parameters based on mathematical operations involving already existing model parameters. Using the model constraint command we created four new model parameters: (1) A young intercept difference score [(intercept estimate for young SM) minus (intercept estimate for young Heterosexual-Identified/non-SM)]; (2) an old intercept difference score [(intercept estimate for old SM) minus (intercept estimate for old Heterosexual-Identified/non-SM)]; (3) a young growth difference score [(growth estimate for young SM) minus (growth estimate for Heterosexual-Identified/non-SM)]; and (4) an old growth difference score [(growth estimate for old SM) minus (growth estimate for old Heterosexual-Identified/non-SM)]. Note that

these difference scores represented the model factor for SM relative to the model factor for Heterosexual-Identified/non-SM. Thus a negative value indicated that the SM factor was lower, whereas a positive value indicated that the SM factor was higher.

Through a series of focused model comparisons, we examined whether these difference scores varied across the young and old cohorts. Specifically, based on X^2 difference tests, we compared the fit of a model where the young intercept difference score and the old intercept difference score were constrained to be equal to the fit of a model where they were not constrained to be equal. We conducted a similar model comparison for the young growth difference score and the old growth difference score.

We used this approach because it allowed for the examination of a two-way interaction (cohort by SM status) while allowing the relation between instability in reported same-sex attractions and psychological well-being to vary across groups. We conducted analyses with and without controlling for instability in reported same-sex attractions. We examined differences in depressive affect and self-esteem in separate models. Results are listed in Table 5, where significant differences are indicated by a superscripted number.

When not controlling for instability in reported same-sex attractions, the young growth difference score was larger than the old growth difference score, $\Delta X^2(1) = 6.17, p < .05$. Among the young cohort, growth in depressive affect was more positive among SM than among Heterosexual-Identified/non-SM (.017). Among the old cohort, however, growth in depressive affect was equivalent across the two groups (-.007).

Preliminary analyses revealed that the relation between instability in reported same-sex attractions and both depressive affect and self-esteem was equivalent across cohort for Heterosexual-Identified/non-SM. For SM we found that the relation between instability in reported same-sex attractions was equivalent across cohort for depressive affect, but it varied across cohort for self-esteem. The relation was more pronounced among the young cohort, as shown in Table 6. Based on these preliminary findings, we constrained the relation between instability in reported same-sex attractions and psychological well-being to be equal across cohort (except for SM and self-esteem, where the relation varied across cohort). As in earlier analyses, we allowed the relation between instability in reported same-sex attractions and psychological well-being to vary across Heterosexual-Identified/non-SM and SM. When controlling for instability in reported same-sex attractions, the relation between SM status and depressive affect did not vary across cohort. However, for self-esteem the intercept difference score, $\Delta X^2(1) = 7.13, p < .01$, and the growth difference score, $\Delta X^2(1) = 5.14, p < .05$, were much larger among the young cohort, and only among the young cohort were these difference scores significantly different from zero. More specifically, only among the young cohort did those of SM status have, relative to Heterosexual-Identified/non-SM, lower self-esteem at intercept (-.734) but greater increases in self-esteem over time (.100).

Gender—In order to examine gender-by-SM differences, we used the same analytic strategy that we used to examine cohort-by-SM status differences, except that we used a different grouping variable. The gender-by-SM status grouping variable broke respondents into four groups: (1) male Heterosexual-Identified/non-SM; (2) female Heterosexual-Identified/non-SM; (3) male SM; (4) and female SM. Results are listed in Table 5. Again, significant differences in difference scores are indicated by a superscripted number in Table 5.

When not controlling for instability in reported same-sex attractions, depressive affect growth difference scores were not equivalent among males and females, $\Delta X^2(1) = 4.36, p$

< .05. More specifically, among females growth in depressive affect was more positive among SM than among Heterosexual-Identified/non-SM (.015). Among males, however, growth in depressive affect did not differ across Heterosexual-identified/non-SM and SM (−.002). The relation between SM status and self-esteem did not vary across gender.

Preliminary analyses revealed that the relation between instability in reported same-sex attractions and both depressive affect and self-esteem was equivalent across gender for Heterosexual-Identified/non-SM. However, the relation between instability in reported same-sex attractions and both depressive affect and self-esteem varied across gender. The relation was more pronounced among males, as shown in Table 6. The relation between instability in reported same-sex attractions and psychological well-being was thus constrained to be equal across gender for Heterosexual-Identified/non-SM and was allowed to vary across gender for SM. Again, we allowed the relation to vary across Heterosexual-Identified/non-SM and SM as well. When controlling for instability in reported same-sex attractions, the relation between SM status and psychological well-being did not vary across gender.

Summary—The relation between SM status and psychological well-being varied across both cohort and gender. In the case of depressive affect, patterns evident among the entire sample when instability controls were not included (i.e., greater increases in depressive affect over time among SM – Heterosexual-identified/SM in particular) were more evident among those in the young cohort and females. However, in the case of self-esteem, patterns found among the entire sample (i.e., intercept differences across SM and Heterosexual-Identified/non-SM) were more evident among the young cohort. A pattern that was not evident among the entire sample emerged as well: Among the entire sample there was no instance when growth in self-esteem varied across any of the sexual orientation groups. However, among the young cohort, growth in self-esteem was more positive among SM. Growth in self-esteem was equivalent across SM status among the old cohort. This differential growth pattern across cohort only emerged when controls for instability in reported same-sex attractions were included. Finally, the relation between early and stable reports of same-sex attractions and psychological well-being (i.e., lower initial levels but greater increases over time) was more pronounced among males.

Discussion

Overall, four main conclusions can be drawn from this study: (1) Psychological well-being disparities between SM and non-SM are in place by early adolescence, and then for many the remainder of adolescence is a recovery period when the disparities narrow over time. (2) Early and stable reporting of same-sex attractions is associated with a greater initial deficit in psychological well-being, but because it is also associated with a quicker recovery over time, the effects are often not long lasting. (3) Though the relation between sexual orientation during early adulthood (i.e., Wave 3) and adolescent psychological well-being was quite similar across gender, the negative relation between psychological well-being and early, stable awareness of same-sex attractions was more pronounced among males. (4) Relative to Bisexual and Homosexual-identified/SM, the understudied yet relatively sizable group of Heterosexual-identified/SM appeared to be at equal risk for deficits in psychological well-being.

What Does Sexual Orientation during Early Adulthood Mean for Adolescence?

Before discussing the findings, we will address some implications that the study's measure of sexual-minority status might have for the conclusions that can be drawn. The measure of sexual minority status was based on a measure of sexual orientation during early adulthood

(Wave 3). Thus, the measure of sexual orientation was a static measure that failed to account for the fluidity of sexual identification over time (Diamond, 2006). Nonetheless, the measure was linked with indicators of psychological well-being that predated it by over six years. While one's declared sexual orientation during early adulthood may not be indicative of one's sexual orientation during adolescence, it is likely indicative of whether one dealt with same-sex sexuality during some point of adolescence. It is also likely indicative of the importance or primacy of that same-sex sexuality within one's overall sense of adolescent sexuality. For example, while both those who identified as homosexual and bisexual during early adulthood likely dealt with same-sex attractions during adolescence, for those who identified as homosexual during early adulthood those adolescent same-sex attractions may have been a more important or central component of their adolescent sexuality. Importantly, though a rough indication, the measures of same-sex attraction during adolescence help to narrow when during adolescence these individuals were first dealing with this same-sex sexuality. Thus, when paired together, the adolescent measures of same-sex sexuality and the early adulthood measure of sexual orientation provide among a large, national, longitudinal sample a meaningful account of sexuality as well as emerging awareness of that sexuality.

The Emergence of the Negative Relation between SM Status and Psychological Well-Being

The driving motivation for this study was to examine whether the negative relation between SM status and psychological well-being (1) is similar to that of other social statuses where differences are primarily in place by early adolescence; or (2) continues to emerge through the adolescent years when SM are thought to encounter unique developmental challenges. The findings suggest that the negative relation between SM status (based on the declaration of a sexual orientation that includes same-sex attractions during early adulthood) and psychological wellbeing is largely in place by early adolescence. This is evidenced by the fact that among both the young and old cohorts, and regardless of adolescent patterns of reported same-sex attractions, the discrepancies in psychological well-being were largest at the study's onset (when those among the young and old cohorts ranged between 12 and 15, and 16 and 19 respectively). Moreover, middle childhood and early adolescence appear to be more of a struggle for those who report early and stable same-sex attractions, since by early adolescence these individuals report the greatest deficits in psychological well-being relative to Heterosexual-Identified/non-SM.

Across adolescence the negative relation between SM status (again based on declared sexual orientation during early adulthood) and psychological well-being either remained stable or decreased. Among those who reported early and stable same-sex attractions, the negative relation between SM status and psychological well-being decreased across time. Importantly, among the young cohort (12–15 years of age at Wave 1), this pattern held true for both depressive affect and self-esteem. This finding suggests that for those who reported early, stable same-sex attractions, the negative relation between SM status and psychological well-being decreased across time, even among those who were early adolescents at the onset of the study. When ignoring same-sex attractions and focusing on early adulthood sexual orientation, the relation between SM status and psychological well-being was stable across time except for two instances: The first exception was among the whole sample, where the negative relation between Heterosexual-Identified/non-SM and Heterosexual-identified/SM increased across time. This pattern held only for depressive affect, and it was likely due to the fact that Heterosexual-Identified/SM were the group most likely to report unstable same-sex attractions. These types of attractions, in turn, were associated with less of an increase in psychological well-being across time. The second exception was among the young cohort, where the negative relation between SM status and psychological well-being increased across time. Again, this pattern held only for depressive affect and only for those reporting

unstable same-sex attractions. As noted above, this pattern was reversed when controlling for instability in reported same-sex attractions. Taken together, the negative relation between SM status and psychological well-being generally did not become more pronounced across adolescence. To the contrary, it either remained stable or even decreased among those who reported early and stable same-sex attractions.

Why Is the Negative Relation in Place by Early Adolescence?

Most of the challenges associated with being a sexual minority (e.g., dealing with homophobia and bullying, trying to find other SM peers, navigating romantic relationships, coming out), are confronted over the course of adolescence, not prior to it. The relation between declared sexual orientation during early adulthood and psychological well-being seems to manifest by early adolescence and does not increase thereafter, which speaks to the deleterious effects of feeling different from others during middle childhood and early adolescence. Though individuals must deal throughout the lifespan with being members of devalued groups and the sense of difference that accompanies those memberships, middle childhood is the first time individuals are confronted with this sense of difference. After all, it is not until middle childhood that youth are cognitively capable of internalizing this sense of difference as meaningful to their own personal sense of value (Harter, 2006).

Consequently, they likely have not yet acquired the tools for dealing with this sense of difference. As a result those in middle childhood may be more likely to have their sense of well-being negatively influenced by that sense of difference.

Potentially compounding the deleterious effects of this sense of difference during middle childhood is the fact that unlike individuals of other stigmatized groups, SM often deal with this sense of difference in isolation, since those around them are predominantly, if not completely, of the sexual majority (D'Augelli & Hershberger, 1993). Contrast this to other youth of at-risk social status, such as females or members of racial minorities, who (1) are likely to have role models in the home or at school as well as peers and friends who share their status and (2) likely have parents or extended family members actively socializing them to deal with the challenges associated with their social status (Bowman & Howard, 1985; Cross, 1991; Thornton, 1997). Finally, the initial deficits may be larger among those SM reporting early and stable same-sex attractions because they are more likely to be dealing with this novel sense of difference at an even earlier age, an age at which they are even more likely to be isolated from others in the SM community (D'Augelli, 1996; Friedman et al., 2008).

Who “Recovers” and Why?

The negative relation between a declared sexual orientation during early adulthood that includes same-sex attractions and adolescent psychological well-being did decrease across adolescence, but only for a select group. The “recovery” or narrowing of psychological well-being deficits between SM and Heterosexual-Identified/non-SM was limited to those who reported early and stable same-sex attractions. In the case of self-esteem, the recovery was limited to the young cohort, those who ranged between 12 and 15 at the onset and between 18 and 23 at the conclusion of the study. Why the recovery was limited to those who reported early, stable same-sex attractions requires further examination, but we offer two possible explanations. First, SM who reported early, stable same-sex attractions had farther to recover. That is, relative to Heterosexual-Identified, non-SM, SM who reported early and stable same-sex attractions reported far lower initial levels of psychological well-being than did SM who did not report early and stable same-sex attractions. Second, SM who reported early and stable same-sex attractions may have benefited from having longer to adjust to their status and incorporate it into their sense of self (Floyd & Bakeman, 2006; Savin-Williams, 1995). Regardless of the reason, it seems that the earlier the awareness of same-

sex attractions, the greater the initial deficit in psychological wellbeing, but also the steeper the recovery. This pattern of recovery among those reporting early, stable same-sex attraction is inconsistent with Friedman et al.'s (2008) findings that those progressing through gay-related developmental milestones at earlier ages tended to report lower functioning during adulthood. Respondents included in the Friedman et al. (2008) study were teenagers in the early to mid 1980s, whereas respondents in Add Health were teenagers in the mid to late 1990s. Perhaps historical increases in the acceptance of homosexuality (Savin-Williams, 2005) have contributed to reductions in the long-term consequences of an early awareness of same-sex sexuality.

In cases where there was a recovery, such recovery was generally not complete. SM still reported deficits in psychological well-being during early adulthood; those deficits were simply smaller than they were during early adolescence. With and without controls for instability in reported same-sex attractions, post-hoc comparisons of Wave 3 psychological well-being revealed that each of the three SM groups still reported lower psychological well-being relative to the Heterosexual-Identified/non-SM group (results not tabled). The only exception was among Homosexual-identified/SM who reported early and stable same-sex attractions. This group reported Wave 3 levels of depressive affect that were equivalent to Heterosexual-Identified/non-SM.

Overall Lack of Gender Differences

The relation between sexual orientation during early adulthood (i.e., Wave 3) and adolescent psychological well-being was largely equivalent across gender. There was, however, a gender difference in the negative relation between early and stable reports of same-sex attractions and initial levels of psychological well-being, with the negative relation proving more pronounced among males. As noted in the Introduction, previous research has found that the negative relation between SM status and psychological well-being is more pronounced among males (Balsam et al., 2005; Cochran et al., 2003; Elze, 2002; Fergusson et al., 2005). This study's findings suggest a more nuanced pattern. Instead of the relation between sexual orientation and psychological well-being being more pronounced among males, it may be that an early awareness of one's same-sex attractions (and in turn one's sexual orientation) has a more detrimental impact on males than females. For the most part the relation between early awareness and growth of psychological wellbeing did not vary across gender, suggesting that these effects persist into early adulthood. Early awareness may be more problematic for males because sexuality as well as gender roles are generally more rigid among males (Diamond, 2006; Langlois & Downs, 1980; Richardson, Bernstein, & Hendrick, 1980), and because relative to females exhibiting same-sex sexuality, males exhibiting same-sex sexuality are more likely to be victimized by members of their own gender (Dunkle & Francis, 1990; Russell & Joyner, 2001).

Limitations

This study has several important limitations, the first being the limitations of our measure of sexual orientation as discussed earlier. A second limitation is that the sample sizes of the SM-sub groups were likely not sufficiently large to capture small to modest effects. This may be why the present study found few psychological well-being differences among the three SM groups. Finally, the earliest data available in Add Health are from early adolescence. Ideally, the data would extend back into middle childhood. Unfortunately pre-adolescent data on the SM community are difficult to obtain, in part because parents and guardians tend to be wary of researchers asking their pre-adolescent children questions pertaining to sexuality.

Conclusions and Next Steps

Sexual minorities or those exhibiting same-sex sexuality are a heterogeneous group who vary not only in sexual orientation but also in the developmental course they follow in terms of their awareness and acceptance of their sexual orientation. Among those exhibiting same-sex sexuality, there also is heterogeneity in terms of developmental patterns of psychological wellbeing. Across adolescence, trajectories of psychological well-being converge, such that by early adulthood those exhibiting same-sex sexuality look more similar to both one another and those not exhibiting same-sex sexuality. In developmental science this phenomenon is termed *equifinality* (Bertalanffy, 1968) – multiple pathways to the same (or similar) end point. This pattern of findings highlights the important contributions that developmental theory and longitudinal data can make to our understanding of same-sex sexuality, sexual orientation, and psychological well-being.

More specifically, the pattern of results suggests that (1) the negative relation between SM status and psychological well-being is in place by early adolescence, and (2) the exact pathway or trajectory that one follows across adolescence is more a function of the timing of awareness of same sex attractions than it is of actual sexual orientation (as declared during early adulthood). These results raise the possibility that community resources and social support groups geared towards SM youth, now available in many high-schools, may benefit students in grade school and middle school as well. Finally, findings from this study are consistent with emerging research suggesting that relative to those who identify as a SM (i.e., bisexual or homosexual), Heterosexual-identified/SM, an understudied though sizable subgroup of the SM population who comprise about 8% of the overall population and about 80% of the SM population (Austin & Corliss, 2008; Remafedi, Resnick, Blum, & Harris, 1992), are at relatively equal risk (and in some cases greater risk than Homosexual-identified/SM) for deficits in psychological well-being. Future research should incorporate this subgroup when possible.

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Figure 1.
Growth model examining psychological well-being across 3 waves.

Table 1
Psychological well-being group means, whole sample and by cohort and gender

	Sample size		Psychological well-being					
	n	%	Depressive affect			Self-esteem		
			Wave 1	Wave 2	Wave 3	Wave 1	Wave 2	Wave 3
Whole Sample	7,733	100%	.630 (.967)	.627 (.791)	.495 (.791)	4.060 (1.231)	4.136 (1.055)	4.203 (.791)
Heterosexual-Identified/non-SM	6,889	89.09%	.611 (.913)	.609 (.830)	.470 (.747)	4.085 (1.079)	4.156 (.996)	4.227 (.830)
Heterosexual-Identified/SM	575	7.44%	.781 (.839)	.755 (.719)	.713 (.767)	3.854 (1.151)	3.971 (1.055)	4.017 (.815)
Bisexual-Identified/SM	140	1.81%	.795 (.722)	.802 (.651)	.668 (.556)	3.931 (.887)	4.045 (.947)	4.031 (.852)
Homosexual/Identified/SM	129	1.67%	.750 (.670)	.803 (.647)	.576 (.545)	3.881 (.829)	3.964 (.943)	4.008 (.670)
Young								
All Young	3,953	100%	.592 (.754)	.606 (.692)	.502 (.754)	4.084 (1.069)	4.151 (.943)	4.201 (.817)
Heterosexual-Identified/non-SM	3,484	88.14%	.575 (.708)	.589 (.708)	.473 (.708)	4.110 (1.003)	4.174 (.826)	4.227 (.767)
Heterosexual-Identified/SM	323	8.17%	.738 (.863)	.726 (.755)	.768 (.611)	3.895 (1.114)	3.968 (1.132)	4.001 (.719)
Bisexual-Identified/SM	91	2.30%	.695 (.630)	.774 (.630)	.638 (.563)	3.893 (.868)	4.032 (.925)	4.016 (.820)
Homosexual/Identified/SM	55	1.39%	.600 (.423)	.692 (.489)	.545 (.504)	3.874 (.779)	3.956 (.853)	4.030 (.675)
Old								
All Old	3,780	100%	.685 (.738)	.658 (.738)	.485 (.615)	4.025 (.922)	4.115 (.984)	4.206 (.861)
Heterosexual-Identified/non-SM	3,405	90.08%	.661 (.759)	.636 (.759)	.467 (.700)	4.409 (.875)	4.131 (.992)	4.227 (.875)
Heterosexual-Identified/SM	252	6.67%	.848 (.762)	.798 (.794)	.628 (.762)	3.790 (1.048)	3.975 (.810)	4.043 (.841)
Bisexual-Identified/SM	49	1.30%	1.064 (.967)	.879 (.777)	.747 (.686)	4.036 (.770)	4.080 (.854)	4.069 (.819)
Homosexual/Identified/SM	74	1.96%	.877 (.723)	.898 (.731)	.602 (.576)	3.886 (.963)	3.971 (1.024)	3.989 (.697)
Male								
All Males	3,486	100%	.543 (.649)	.535 (.709)	.439 (.531)	4.197 (.886)	4.238 (.886)	4.252 (.768)
Heterosexual-Identified/non-SM	3,269	93.76%	.533 (.686)	.527 (.743)	.431 (.515)	4.205 (.858)	4.243 (.858)	4.262 (.743)
Heterosexual-Identified/SM	117	3.36%	.682 (.714)	.624 (.800)	.619 (.703)	4.080 (.952)	4.188 (.909)	4.114 (.844)
Bisexual-Identified/SM	24	.69%	.641 (.363)	.559 (.387)	.444 (.397)	4.106 (.740)	4.130 (.387)	4.157 (.705)
Homosexual/Identified/SM	76	2.18%	.703 (.697)	.698 (.767)	.512 (.584)	4.084 (.602)	4.110 (.724)	4.069 (.697)
Female								
All Females	4,247	100%	.705 (.912)	.706 (.717)	.542 (.847)	3.943 (1.173)	4.050 (.978)	4.161 (.847)
Heterosexual-Identified/non-SM	3,620	85.24%	.685 (.842)	.686 (.722)	.508 (.782)	3.970 (1.023)	4.074 (.963)	4.194 (.902)

	Sample size n	%	Psychological well-being					
			Depressive affect			Self-esteem		
			Wave 1	Wave 2	Wave 3	Wave 1	Wave 2	Wave 3
Heterosexual-Identified/SM	458	10.78%	.808 (.856)	.790 (.685)	.739 (.685)	3.792 (1.113)	3.912 (.984)	3.991 (.728)
Bisexual-Identified/SM	116	2.73%	.822 (.743)	.846 (.646)	.708 (.549)	3.900 (.894)	4.030 (1.002)	4.008 (.872)
Homosexual/Identified/SM	53	1.25%	.813 (.597)	.943 (.553)	.660 (.517)	3.611 (.910)	3.771 (.997)	3.927 (.662)

Note: Standard deviations in parentheses

Table 2

Percentage and frequency of unstable¹ and stable¹ reports of same-sex attractions (SSA)

	Wave 1 and 2 reports of SSA		Wave 3 reports of SSA		All 3 Waves Stable at W1, W2, & W3
	Unstable at W1 & W2	Unstable at W1 or W2 (but not both)	Stable at W1 & W2	Unstable at W3	
Whole sample	8.7% (671)	8.2% (636)	83.1% (6,426)	5.7% (442)	94.3% (7,291)
Heterosexual Identified, non-SM	.6% (44)	7.2% (494)	92.2% (6,351)	2.8% (195)	97.2% (6,694)
Heterosexual Identified, SM	80.7% (464)	15.0% (86)	4.3% (25)	41.7% (240)	58.3% (335)
Bisexual Identified	67.9% (95)	20.7% (29)	11.4% (16)	5.0% (7)	95.0% (133)
Homosexual Identified	52.7% (68)	20.9% (27)	26.4% (34)	0.0% (0)	100.0% (129)
Young					
All Young	9.8% (389)	8.1% (320)	82.1% (3,244)	6.4% (253)	93.6% (3,700)
Heterosexual, non-SM	.5% (19)	7.0% (244)	92.5% (3,221)	3.1% (109)	96.9% (3,375)
Heterosexual, SM	84.2% (272)	13.6% (44)	2.2% (7)	43.7% (141)	56.3% (182)
Bisexual	69.2% (63)	20.9% (19)	9.9% (9)	3.3% (3)	96.7% (88)
Homosexual	63.6% (35)	23.6% (13)	12.7% (7)	0.0% (0)	100.0% (55)
Old					
All Old	7.5% (282)	8.4% (316)	84.2% (3,182)	5.0% (189)	95.0% (3,591)
Heterosexual, non-SM	.7% (25)	7.3% (250)	91.9% (3,130)	2.5% (86)	97.5% (3,319)
Heterosexual, SM	76.2% (192)	16.7% (42)	7.1% (18)	39.3% (99)	60.7% (153)
Bisexual	65.3% (32)	20.4% (10)	14.3% (7)	8.2% (4)	91.8% (45)
Homosexual	44.6% (33)	18.9% (14)	36.5% (27)	0.0% (0)	100.0% (74)
Male					
All Males	5.0% (173)	9.5% (332)	85.5% (2,981)	4.0% (140)	96.0% (3,346)
Heterosexual, non-SM	.9% (28)	8.8% (288)	90.3% (2,953)	1.9% (62)	98.1% (3,207)
Heterosexual, SM	79.5% (93)	17.9% (21)	2.6% (3)	64.1% (75)	35.9% (42)
Bisexual	58.3% (14)	25.0% (6)	16.7% (4)	12.5% (3)	87.5% (21)
Homosexual	50.0% (38)	22.4% (17)	27.6% (21)	0.0% (0)	100.0% (76)
Female					
All Females	11.7% (498)	7.2% (304)	81.1% (3,445)	7.1% (302)	92.9% (3,945)
Heterosexual, non-SM	.4% (16)	5.7% (206)	93.9% (3,398)	3.7% (133)	96.3% (3,487)

	Wave 1 and 2 reports of SSA			Wave 3 reports of SSA		All 3 Waves
	Unstable at W1 & W2	Unstable at W1 or W2 (but not both)	Stable at W1 & W2	Unstable at W3	Stable at W3	
Heterosexual, SM	81.0% (371)	14.2% (65)	4.8% (22)	36.0% (165)	64.0% (293)	4.4% (20)
Bisexual	69.8% (81)	19.8% (23)	10.3% (12)	3.4% (4)	96.6% (112)	10.3% (12)
Homosexual	56.6% (30)	18.9% (10)	24.5% (13)	0.0% (0)	100.0% (53)	24.5% (13)

Note: Percentages listed are row percentages. Frequencies are listed in parentheses

J Relative to same-sex attractions (or lack thereof) associated with sexual orientation reported at Wave 3

Table 3

Growth of psychological well-being, with and without controlling for instability in reported same-sex attractions, by sexual orientation groups

	<u>Without instability controls</u>		<u>With instability controls</u>	
	Depressive Affect	Self-esteem	Depressive Affect	Self-esteem
Whole sample				
Intercept	.638**	4.085**	.615**	4.110**
Linear growth	-.022**	.019**	-.028**	.018**
Heterosexual Identified, non-SM				
Intercept	.619**	4.108**	.610**	4.114**
Linear growth	-.023**	.019**	-.023**	.018**
All SM combined				
Intercept	.778**	3.910**	1.090**	3.760
Linear growth	-.016**	.017**	-.072**	.038*
Heterosexual Identified, SM				
Intercept	.774**	3.90**	1.162**	3.690**
Linear growth	-.010	.018**	-.064**	.042*
Bisexual Identified				
Intercept	.809**	3.971**	1.115**	3.824**
Linear growth	-.021*	.012	-.074**	.034
Homosexual Identified				
Intercept	.776**	3.899**	1.032**	3.776**
Linear growth	-.029**	.018	-.074**	.036

*
p < .05,

**
p < .01

Table 4

The relation between instability in reported same-sex attractions and psychological well-being, by SM status

	Depressive affect				Self esteem			
	Intercept		Growth		Intercept		Growth	
	Wave 1 and 2	Wave 1 or 2	Wave 1 and 2	Wave 1 or 2	Wave 1 and 2	Wave 1 or 2	Wave 1 and 2	Wave 1 or 2
Heterosexual-identified/non-SM	.219**	.072**	.006	-.005	.119	-.077	-.047	.012
All SM combined	-.397**	-.148	.068**	.035*	.222*	-.026	.085	.007

* p < .05

** p < .01

Table 5

All SM versus Heterosexual-Identified/non-SM Difference Scores in psychological well-being, by cohort and gender

	Depressive Affect		Self-esteem		Depressive Affect		Self-esteem	
	Young	Old	Young	Old	Males	Females	Males	Females
Without controls for instability in same-sex attractions								
Intercept	.136**	.210**	-.211**	-.175**	.141**	.123**	-.108*	-.162**
Linear growth	.017**	-.007 ¹	-.001	-.003	-.002 ⁴	.015** ⁴	-.007	-.007
With controls for instability in same-sex attractions								
Intercept	.425**	.462**	-.734** ²	-.173 ²	.508**	.395**	-.247**	-.368**
Linear growth	-.033**	-.049**	.100** ³	-.018 ³	-.059**	-.037*	.002	.025

* p < .05,

** p < .01

¹ $\Delta\chi^2(1) = 6.17, p < .05$

² $\Delta\chi^2(1) = 7.13, p < .01$

³ $\Delta\chi^2(1) = 5.17, p < .05$

⁴ $\Delta\chi^2(1) = 4.36, p < .05$

Table 6

Among SM, the relation between reported instability in same-sex attractions and psychological well-being, by cohort and gender

	Depressive affect				Self esteem			
	Intercept		Growth		Intercept		Growth	
	Wave 1 and 2	Wave 1 or 2	Wave 1 and 2	Wave 1 or 2	Wave 1 and 2	Wave 1 or 2	Wave 1 and 2	Wave 1 or 2
Young	ND	ND	ND	ND	.551**	.337	.083	-.117*
Old	ND	ND	ND	ND	.040	-.208	-.008	.014
Males	-.536**	-.296*	.164	.069**	.217**	.260**	-.0159	-.012
Females	-.287**	-.032	-.153**	.067**	.254	-.084	.077	-.047

*
p < .05,

**
p < .01

ND: No difference was found between the Young and Old SM group.