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Prevalence and Stability of Self-Reported Sexual Orientation Identity During Young Adulthood

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Abstract Based on data from Wave 3 and Wave 4 from National Longitudinal Survey of Adolescent Health ($N = 12,287$), known as Add Health, the majority of young adults identified their sexual orientation as 100% heterosexual. The second largest identity group, “mostly heterosexual,” was larger than all other nonheterosexual identities combined. Comparing distributions across waves, which were approximately 6 years apart, stability of sexual orientation identity was more common than change. Stability was greatest among men and those identifying as heterosexual. Individuals who identified as 100% homosexual reported nearly the same level of stability as 100% heterosexuals. The bisexual category was the most unstable, with one quarter maintaining that status at Wave 4. Bisexual men who changed their identity distributed themselves among all other categories; among bisexual women, the most common shift was toward mostly heterosexual. Reflecting changes in identity, the proportion of heterosexuals decreased between the two waves.

Keywords Sexual orientation · Sexual identity · Prevalence · Adulthood · Add Health

Introduction

Although the prevalence of various self-reported sexual orientation identities is well documented throughout the adult life

course, the extent to which these identities are stable after the adolescent years is not (Savin-Williams, 2006). Until recently, the primary limitation has been the scarcity of prospective studies with samples from representative populations that included questions on sexual orientation. Thus, a fundamental theoretical question as to whether sexual orientation identity is a stable self-reported characteristic of the individual is largely without adequate empirical data. Two subsequent issues are addressed in the present study: whether different sexual orientation identities vary in the degree to which they remain stable or change over time and whether there are sex differences in the degree of stability.

Four recent large-scale longitudinal data sets assessed the stability of various components of self-reported sexual orientation among adolescents, young adults, or adults. Two of these investigated sexual orientation stability among adolescents as they transitioned into young adulthood. In the earliest, based on Add Health, both self-reported romantic attraction and sexual behavior were significantly stable over 6 years in the first three waves of data collection (Savin-Williams & Ream, 2007). Prevalence rates for nonheterosexual attraction and behavior categories were higher among women than men. Although between-wave agreement was high (usually around 70% for attraction and 95% for sexual behavior), in general this was largely because of the stability found in individuals reporting opposite-sex attraction or sexual behavior with the opposite sex (Savin-Williams & Ream, 2007; Udry & Chantala, 2005). In addition, stability in reporting the same sexual orientation identity was lower in women than in men. Nonheterosexual participants in Wave 1 were often not the same individuals who indicated nonheterosexuality one and 5 years later. Over time, participants of both sexes migrated among the options of opposite-sex, both-sex, and same-sex attraction and behavior such that the proportion of individuals indicating a sexual identity based on sexual attraction to both sexes increased over time. Thus, even as some individuals shifted from same-sex to opposite-sex

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sexuality, a small proportion (but a larger number) of opposite-sex attracted and behaving individuals replaced them.

In the second study, the Growing Up Today Study (GUTS) among youth of roughly the same age (12–25 years) as Add Health participants, mobility scores were also quite low, higher among young women than young men (Ott, Corliss, Wypij, Rosario, & Austin, 2011). Further, consistent with Add Health findings, mobility scores were highest among nonheterosexual youth (equally true for young women and men). With age, the prevalence of self-reported sexual orientation identity increased such that 10% of men and 20% of women described themselves at some point during the four waves of data collection as nonheterosexual.

A third study was drawn from a New Zealand birth cohort and participants' sexual status was assessed when they were 21 and 26 years old (Dickson, Paul, & Herbison, 2003). Consistent with the other two studies, exclusive attraction to the opposite or to the same sex was reported to be more prevalent among men than women; women more often reported "occasional" attraction to the same sex. Nearly all (96%) men and most women (84%) maintained the same distribution of sexual attraction at both time periods. Although no inferential statistics were provided, exclusive opposite-sex attraction was the most stable (93% maintained this status) and occasional same-sex attraction (51%) and the composite major same-sex attraction (equal attraction, more often same sex, and exclusive same sex) (54%) were the least stable. Over time, especially among women, the latter two categories became more prevalent.

The National Survey of Midlife Development in the United States (MIDUS) was the data source for the fourth study, spanning a 10-year period among adults (mean age = 47 years at Wave 1) (Mock & Eibach, 2011). For both sexes, a heterosexual sexual orientation identity was the most stable; bisexuality and homosexuality (women only) were the least stable. Less than 3% reported a nonheterosexual identity at Wave 1, with more men than women reporting a homosexual identity (and equal number reported a bisexual identity). Slightly more women (2.6%) than men (1.6%) changed sexual orientation identity across waves, with bisexuality being the least stable identity.

This limited empirical evidence based on four large-scale or nationally representative populations indicates that self-reports of sexual orientation are stable among heterosexual men and women, but less so among nonheterosexual individuals. Temporal changes in sexual status are in the direction of increases in nonheterosexuality (especially among young cohorts), that has the net effect of growing their prevalence over time. In addition, a greater percentage of women than men report a nonheterosexual identity and women are more likely to transition from heterosexual to nonheterosexual status over time.

Based on these investigations, we expected, first, that self-reported sexual orientation identity stability would be more prevalent than change. Second, women would be less stable than men in their sexual orientation identity. Third, the greatest

change would be among nonheterosexual groups. Fourth, over time, the proportion of heterosexuals would decrease and nonheterosexual identities would increase.

Using the nationally representative Add Health data set, the present study contributed to the literature in three ways. First, we assessed the stability of the most frequently used measure of sexual orientation, self-reported *sexual orientation identity*—the label used to identify one's sexual status (Savin-Williams, 2006). Second, we investigated stability not only for the three most commonly noted groups—heterosexual, bisexual, and homosexual—but also for two sexual orientation identities that are seldom included: mostly heterosexual and mostly homosexual. Third, we used the most recent Add Health surveys to assess stability from youth to young adulthood, a time in young people's lives when sexual status solidifies (Perrin, 2002).

Method

Sample and Procedure

Data for this study were drawn from Wave 3 and Wave 4 of the National Longitudinal Survey of Adolescent Health (Add Health)—a comprehensive school-based study of U.S. youth (Harris et al., 2003; Udry & Bearman, 1998). To select schools in its sample, Add Health used a database provided by Quality Education Data for its primary sampling frame. Using rosters from each school, Add Health then selected a nationally representative core sample of 12,105 adolescents in Grades 7–12 to participate in the first in-home interview in 1995 and over-sampled ($N = 8,640$) adolescents from target groups (i.e., siblings, the disabled, highly educated blacks, Chinese, Puerto Ricans, and Cubans). The sample weights were designed to make the Add Health sample representative of the school-aged population in the United States at the time of the first interview (Tourangeau & Hee-Choon, 1998).

The total Wave 1 in-home interview sample included 20,745 individuals (M age = 15.75 years). One year later, the sample was surveyed for a second time. In 2001 and 2002, the project re-interviewed 15,197 of the original Wave 1 in-home participants, most of whom were aged 18–24 years (M age = 21.96 years). In 2007 and 2008, the project conducted a fourth wave of in-home interviews for 15,701 of the original Wave 1 participants, at which time they were aged 24–34 (M age = 28.53 years). The response rates for Waves 1, 2, 3, and 4 were 78.9, 88.2, 77.4, and 80.3%, respectively.

The present sample was restricted to the last two waves when, for the first time, sexual orientation identity was assessed. During the first two waves of data collection, Add Health assessed "romantic attractions" and sexual behavior, both of which pose validity (their relationship with sexual orientation identity) and reliability (temporal stability) concerns (Savin-Williams & Ream, 2007). Initially, 17,836 participants who completed the Wave

3 or Wave 4 interview were included. One individual was dropped because the interviewer's report of biologic sex was inconsistent across waves. Participants who did not have a valid sample weight at either wave were also excluded, reducing it by 1,002 participants. The majority of participants who did not have a valid sample weight were from the original sample. To augment the size of this particular sample, Add Health recruited siblings of participants who were not part of the original sampling frame, and consequently, were missing a weight (Chantala & Tabor, 2010). It is essential that sample weights are available because we used survey procedures to take into account the complex design of Add Health; these procedures apply a post-stratification sample weight and identify participants geographically clustered within the same school or region of country. Table 1 shows the distributions for the measures of sexual orientation at Wave 3 and Wave 4 for the remaining 16,833 participants.

Men and women who missed the Wave 3 or Wave 4 interview ($N=4,546$) did not differ significantly with respect to sexual orientation from those who participated in both interviews (the 95% confidence intervals for these groups overlap) (Table 1).

Analyses showcased below are limited to those 12,287 participants who were interviewed at both waves, allowing us to examine temporal change in orientation.

To protect the confidentiality of participants, interviews were conducted by professional staff who entered participants' answers on a laptop computer. For sensitive questions, including sexual orientation identity, interviewers handed participants the laptop and conducted a computer-assisted self-interview, which enabled them to enter responses to questions that appeared on screen and were heard on tape with earphones.

Measures

At Wave 3 and Wave 4, participants chose the description that best fit their self-reported sexual orientation identity. Options were: "100% heterosexual (straight); mostly heterosexual (straight), but somewhat attracted to people of your own sex; bisexual—that is, attracted to men and women equally; mostly homosexual (gay), but somewhat attracted to people of the opposite sex; 100% homosexual (gay); or not sexually attracted to either males or females." Participants who failed to report

Table 1 Add Health participants, separate by sex and sexual orientation identity interviewed during Wave 3, Wave 4, or both

	Wave 3 and Wave 4 interview			Wave 3 or Wave 4 interview only		
	<i>N</i>	%	95% CI	<i>N</i>	%	95% CI
<i>Men at Wave 3</i>						
100% heterosexual	5,228	94.2	(93.3,95.1)	1,078	95.6	(94.4,96.8)
Mostly heterosexual	178	3.3	(2.7,4.0)	28	2.4	(1.5,3.3)
Bisexual	38	0.7	(0.4,0.9)	4	0.1	(−0.1,0.3)
Mostly homosexual	40	0.6	(0.3,0.9)	8	0.8	(0.3,1.4)
100% homosexual	73	1.2	(0.8,1.6)	13	1.0	(0.5,1.6)
<i>Women at Wave 3</i>						
100% heterosexual	5,685	85.6	(84.1,87.1)	714	84.4	(81.9,86.8)
Mostly heterosexual	677	10.8	(9.5,12.1)	85	10.5	(8.4,12.5)
Bisexual	168	2.6	(2.0,3.1)	19	2.8	(1.7,3.9)
Mostly homosexual	34	0.6	(0.4,0.9)	11	1.4	(0.6,2.2)
100% homosexual	30	0.4	(0.2,0.7)	9	0.9	(0.3,1.6)
<i>Men at Wave 4</i>						
100% heterosexual	5,192	93.6	(92.4,94.8)	1,223	93.6	(92.3,94.9)
Mostly heterosexual	187	3.5	(2.7,4.3)	42	3.4	(2.4,4.4)
Bisexual	29	0.5	(0.2,0.8)	17	1.1	(0.5,1.6)
Mostly homosexual	51	0.7	(0.4,1.0)	5	0.2	(−0.1,0.4)
100% homosexual	105	1.7	(1.2,2.2)	21	1.7	(1.0,2.5)
<i>Women at Wave 4</i>						
100% heterosexual	5,348	80.2	(78.7,81.6)	925	78.3	(76.0,80.7)
Mostly heterosexual	1,021	15.8	(14.6,17.1)	182	16.8	(14.7,18.9)
Bisexual	148	2.3	(1.8,2.9)	35	3.1	(2.1,4.1)
Mostly homosexual	50	0.8	(0.5,1.1)	17	1.0	(0.4,1.6)
100% homosexual	64	0.9	(0.6,1.1)	11	0.7	(0.2,1.2)

Note: Statistics adjusted to take into account design effects using weight from same wave as measure displayed (i.e., gswgt3_2 or gswgt4_2)

attractions were dropped (13 men and 18 women at Wave 3; 18 men and 30 women at Wave 4).

Data Analyses

Two different types of statistics offer indicators of stability and change in sexual orientation between Wave 3 and Wave 4. Kendall's Tau-B correlation coefficients were computed as an overall indicator of stability. An initial examination of the distribution of scores and homogeneity of variance suggested that assumptions made for parametric statistical tests (e.g., Pearson correlations) were not met with the present dataset. Consequently, nonparametric tests were performed. Percentages of scores and their 95% confidence intervals were computed as additional indicators of stability and change. Where noted, statistics were adjusted to take into account survey design effects.

Results

Descriptive Data

Table 1 presents the distributions of self-reported sexual orientation identities for participants, by sex, in each identity group at both Wave 3 and Wave 4, and at either Wave 3 or Wave 4, but not both. Findings suggested no systematic difference in sexual orientation identities between those who participated in both waves or only in one.

A large majority of participants identified as 100% heterosexual in both waves. These percentages were over 90% across waves among men and between 75 and 85% across waves among women. The second most common group at each wave and for both sexes was mostly heterosexual (across waves, 2–3% in men and 10–16% in women). For each sex and across both waves, the proportion of self-reported mostly heterosexual participants was higher than all other nonheterosexual identities combined.

Sexual Orientation Identity Stability

Figure 1 shows the unweighted percentages and numbers of men and women at each wave in four identity categories. For this figure, we combined the mostly homosexual and 100% homosexual groups to comply with the Add Health contract requiring cell frequencies to be equal to or greater than three. For each category at Wave 3, the number of participants who remained in the same category or changed to another category is presented. In general, the majority of participants reported in Wave 4 the same sexual orientation identity reported in Wave 3. This stability was reflected in the significant positive sign of Kendall's Tau-B coefficients, which indicated that men and women with higher values on the sexual orientation identity scale at Wave 3 had higher values on the same scale at Wave 4. The coefficients

shown in Fig. 1 indicated these correlations were stronger in effect for men ($r = .65$) than for women ($r = .48$).

Table 2 displays the weighted percentages of men and women who shifted their identities between waves, in addition to their distributions of identities at both waves. Comparing distributions across the two waves revealed that the proportion of self-reported 100% heterosexuals decreased between waves, thus increasing the proportion of nonheterosexual identities. Although changes were typically not statistically significant, as indicated by the overlapping confidence intervals, among both sexes the most stable identities were the anchors of the self-reported sexual orientation identity scale: 100% heterosexual and 100% homosexual. Conversely, participants who had identities indicating some attraction to both sexes were most likely to experience a change. Bisexual-identified men and women were especially likely to report a high rate of temporal shifts. In addition, over time more bisexual and mostly heterosexual identified young adults of both sexes moved toward heterosexuality than toward homosexuality.

Figure 2 graphically illustrates stability and change, presenting the percentages of men and women in different Wave 4 categories given their initial classification at Wave 3. The most common changes were shifts by one increment on the sexual orientation identity scale (in either direction). For all identities, changes in all directions were observed, though the proportions of change differed.

Sex Differences in Self-Reported Sexual Orientation Identity Stability

Although the results presented in Figs. 1 and 2 indicate overarching similarity between men and women in the stability of sexual orientation identity, general stability was higher in men than women as indicated by the much stronger correlation (Fig. 1). The percentage of women reporting that they were 100% heterosexual significantly declined between the two waves and was significantly smaller at either wave than the percentage of men (non-overlapping 95% confidence intervals) (Tables 1, 2). Consistent with this pattern of results, women were significantly more likely than men to exhibit change in their sexual orientation over time. Specifically, of Wave 3 women and men, 17.8 and 6.2%, respectively, changed their sexual orientation identity at Wave 4 (Table 2).

Discussion

Results from the Add Health survey indicated that a large majority of young adults identified as 100% heterosexual. The second largest identity group was mostly heterosexual. Comparing distributions across the two waves, the proportion of 100% heterosexual young adults decreased, which correspondingly increased the proportion of nonheterosexual identities.

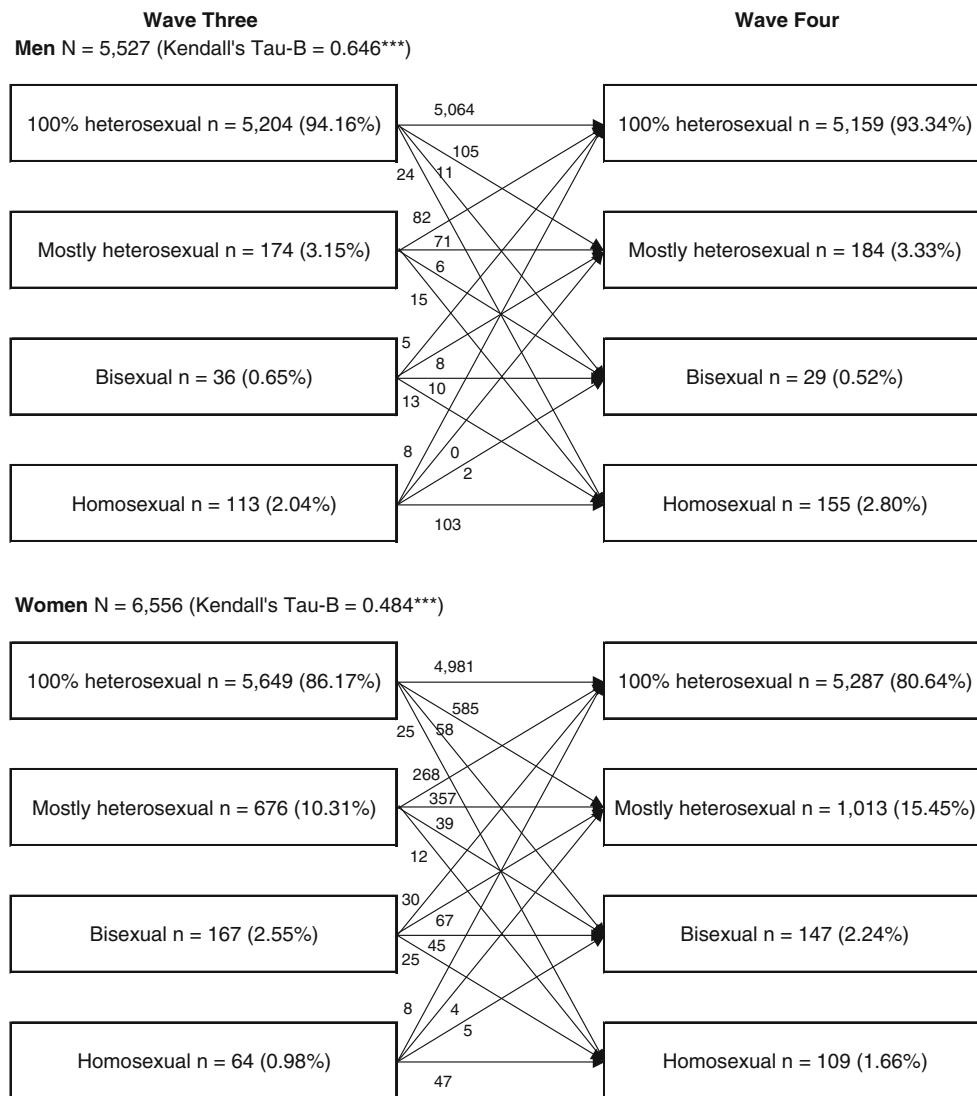


Fig. 1 Change in sexual orientation identity between waves. *** $p < .001$ (significance test for null hypothesis of independence). *Note* In this figure we combine the mostly homosexual and 100% homosexual group in order

to comply with the Add Health contract requiring displayed cell frequencies to be greater or equal to 3

Nevertheless, stability of sexual orientation identity was more prevalent than change during the 6-year period. As expected, stability was highest among men and those identifying as 100% heterosexual; however, 100% homosexual individuals reported nearly the same level of stability as 100% heterosexuals.

The self-reported sexual orientation distribution pattern in the present study was similar to other large-scale studies across several countries that assessed sexual attraction, behavior, and identity, especially regarding the low proportion of men who identify as bisexual (Bogaert, 2010; Busseri, Willoughby, Chalmers, & Bogaert, 2008; Chandra, Mosher, & Copen, 2011; Dickson et al., 2003; Ellis, Robb, & Burke, 2005; Hayes et al., 2011; Kinnish, Strassberg, & Turner, 2005; McCabe, Hughes, Bostwick, Morales, & Boyd, 2011; Ott et al., 2011; Savin-Williams & Ream, 2007; van Griensven et al., 2004). Thus, although

5–10% of young men report some degree of same-sex attraction, few identify as bisexual.

Results support the view that self-reported sexual orientation identity is a stable characteristic of individuals. Changes were relatively rare and slight, mirroring findings of the aforementioned large-scale studies. However, our results were in contrast with findings from another study that reported a far greater proportion (36%) of participants shifted sexual identity over time (Kinnish et al., 2005). We note, however, that in this study the sample was self-selected, not nationally representative, and was retrospective rather than prospective. In our study, when shifts occurred in sexual orientation identity, most were to an adjacent identity category, consistent with Diamond (2008).

For both sexes, the bisexual category or mixed-sex attraction was especially volatile over time, consistent with previous

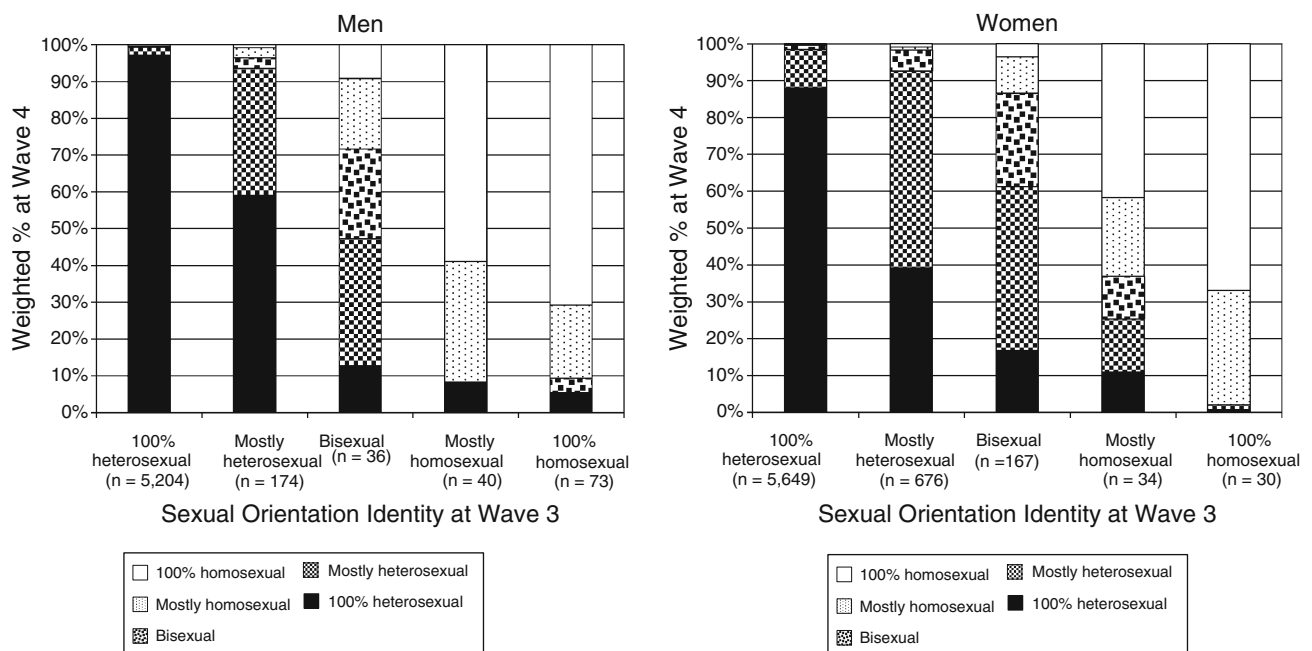
Table 2 Sexual orientation identity at Wave 3 and Wave 4

	Wave 3		Wave 4		No change		Towards homosexual		Towards heterosexual	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Men (<i>N</i> = 5,527)					93.8	(92.6,95.1)	3.4	(2.5,4.4)	2.7	(2.1,3.4)
100% heterosexual	94.2	(93.3,95.1)	93.6	(92.4,94.8)	97.1	(96.4,97.9)	2.9	(2.1,3.6)	–	–
Mostly heterosexual	3.3	(2.7,4.0)	3.5	(2.7,4.3)	34.6	(24.4,44.8)	6.4	(2.4,10.3)	59.0	(48.3,69.8)
Bisexual	0.7	(0.4,0.9)	0.5	(0.2,0.8)	24.4	(5.9,43.0)	28.3	(7.2,49.3)	47.3	(29.0,65.6)
Mostly homosexual	0.6	(0.3,0.9)	0.7	(0.4,1.0)	32.9	(13.4,52.4)	58.8	(38.1,79.6)	8.3	(0.0,18.6)
100% homosexual	1.2	(0.8,1.6)	1.7	(1.2,2.2)	70.8	(54.3,87.2)	–	–	29.2	(12.8,45.7)
Women (<i>N</i> = 6,556)					82.2	(80.6,83.9)	11.6	(10.5,12.7)	6.1	(5.1,7.2)
100% heterosexual	85.6	(84.1,87.1)	80.2	(78.7,81.6)	88.1	(86.8,89.3)	11.9	(10.7,13.2)	–	–
Mostly heterosexual	10.8	(9.5,12.1)	15.8	(14.6,17.1)	53.4	(47.1,59.7)	7.4	(4.7,10.0)	39.2	(32.8,45.6)
Bisexual	2.6	(2.0,3.1)	2.3	(1.8,2.9)	25.4	(16.6,34.2)	13.4	(7.7,19.1)	61.2	(52.4,70.1)
Mostly homosexual	0.6	(0.4,0.9)	0.8	(0.5,1.1)	21.4	(2.5,40.3)	41.7	(20.5,62.9)	36.9	(18.6,55.2)
100% homosexual	0.4	(0.2,0.7)	0.9	(0.6,1.1)	66.9	(37.8,95.9)	–	–	33.1	(4.1,62.2)

Notes: Statistics adjusted to take into account design effects using weight from same wave as measure displayed (i.e., gswgt3_2 or gswgt4_2)

Measures of change use the Wave 4 weight

Less than 2% (*N* = 204) of participants were excluded for providing a response of “no attraction” or “don’t know” to the sexual identity question or refusing to provide an answer to this question

**Fig. 2** Sexual orientation identity at Wave 4 by sexual orientation identity at Wave 3

investigations (Dickson et al., 2003; Kinnish et al., Strassberg, & Turner, 2005; Mock & Eibach, 2011; Ott et al., 2011; Savin-Williams & Ream, 2007). In the present study, for both sexes, only one quarter of bisexual-identified individuals maintained that status at Wave 4 and change was greater toward heterosexuality than toward homosexuality, although this was more common in women than men. Thus, there was little evidence that bisexuality (and mostly heterosexuality) is simply a “transitional stage” from heterosexuality to gay/lesbian status. This is counter

to possible interpretations based on previous research among men that found one third of bisexual men moved toward homosexuality during the course of one year, with half remaining bisexual (Stokes, Damon, & McKirnan, 1997). However, this study was based on data collected in an earlier cohort from a nonrepresentative sample.

Compared to men, women reported lower levels of sexual orientation identity stability (lower Kendall Tau correlation), a finding corresponding with women’s higher level of “sexual

fluidity” (reviewed in Diamond, 2008). Sexual fluidity has been used to imply either mixed-sex (nonexclusive) attractions or changes in sexuality over time. Self-reported sexual orientation patterns among women in the present study supported both definitions of fluidity. First, women were more likely than men to initially identify their sexuality not in absolute terms (100% heterosexual, 100% homosexual) but as nonexclusive (mostly heterosexual, bisexual, mostly gay/lesbian). Second, perhaps as a result of their nonexclusive identities, women may have positioned themselves for more shifts between waves in either direction. One possible mechanism behind this finding is that the co-occurrence of nonexclusivity and instability is due to a third factor, which could be, for example, a specific personality trait (e.g., openness to experience) or greater exposure to moderating social factors (e.g., influences from the media) (Diamond, 2008). Despite the documented sex difference in stability and change, our findings also provided evidence that sexual fluidity is not solely a female phenomenon. Although the prevalence of male fluidity was considerably lower than among women, it was not absent. For example, over one in 20 young men shifted their sexual orientation identity over the 6-year period, especially in regard to changes in and out of the mostly heterosexual category. Future research should document whether this finding is aberrant, an upper limit, or a growing secular trend toward greater male sexual fluidity.

The finding that 100% homosexuality was a relatively stable identity for Wave 3 young women and men is noteworthy given that this developmental timeframe is usually considered to be the last volatile period for identifying as lesbian or gay (Perrin, 2002; Savin-Williams, 2005). At Wave 4, the number of self-reported 100% homosexual individuals increased by half among men and doubled among women. The growth was primarily the result of two migrations: from the mostly homosexual to the 100% homosexual category (not shown) and from Wave 3 100% heterosexuals identifying as 100% homosexual in Wave 4. The first migration likely indicates an emergent commitment to exclusive same-sex identity; the second, represents individuals who “came out of the closet” between the two waves. The reverse, 100% homosexuals transitioning to heterosexuality, seldom occurred.

The Add Health research design allowed us to document the prevalence and stability of a mostly heterosexual identity. Consistent with other research assessing sexual orientation, the prevalence of this identity was larger than all other nonheterosexual identities combined and was more prevalent among women than men (Bogaert 2010; Chandra et al., 2011; Dickson et al., 2003; Ellis et al., 2005; Hayes et al., 2011; McCabe et al., 2011; McConaghy et al., 2006; Ott et al., 2011; Pedersen & Kristiansen, 2008; Saewyc et al., 2009; Smith, Rissel, Richters, Grulich, & de Visser, 2003; Vrangalova & Savin-Williams, 2012). Because mostly heterosexual identified individuals are often grouped by investigators with heterosexuals or nonheterosexuals, or are omitted altogether, our findings are important because they suggest that

they may be a viable and unique group that has been ignored (Vrangalova & Savin-Williams, 2012). Regarding sex differences, in the present study, the mostly heterosexual identity category was three to five times larger, increased more over time, and was more temporally stable among women than men. When mostly heterosexual women *and* men shifted over time it was primarily to and from the 100% heterosexual category. For both sexes, mostly heterosexuality grew in prevalence because more heterosexuals moved to mostly heterosexuality than mostly heterosexuals moved to heterosexuality. Thus, there was little evidence that mostly heterosexuality was a transition stage to bisexuality or homosexuality.

One limitation of the present study was that the assessment of sexual orientation was based solely on self-report. Whether findings would be similar for physiological or behavioral measures of sexuality (e.g., genital arousal, neurological arousal, or gaze patterns) are unknown. Neither is there any way to know what proportion of the instability is due to real change versus measurement error. Finally, we did not assess the motivations for sexual orientation identity stability and change because the dataset did not provide such information. We believe this to be a viable research agenda for future investigations.

Future waves of Add Health will likely allow investigators to further assess prevalence and stability statistics into adulthood. If, for example, future research shows that fewer changes in sexual orientation identity become evident, then one explanation is that by adulthood sexual experimentation and uncertainty are less necessary and hence sexual stability becomes more the norm. In addition, stability could be the result of mobility maxed out due to the considerable contemporary acceptance of sexual diversity. In particular, media attention highlights the prevalence and life histories of nonheterosexual individuals and, perhaps as a result, societal stigma and prejudice toward all sexualities other than heterosexuality may have reached their zenith of influence to censor identifying as nonheterosexual. Thus, further shifts in sexuality during young adulthood may have reached their peak in the current generation.

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Bisexuality for Project No.: 63660/A001 “Sexual Identity and Attraction: Understanding Understudied Groups.” A version of this article was presented at the University of Lethbridge Workshop, The Puzzle of Sexual Orientation: What Is It and How Does It Work?, Lethbridge, Alberta, Canada, June 2010.

References

- Bogaert, A. F. (2010). Physical development and sexual orientation in men and women: An analysis of NATSAL-2000. *Archives of Sexual Behavior*, *39*, 110–116.
- Busseri, M. A., Willoughby, T., Chalmers, H., & Bogaert, A. R. (2008). On the association between sexual attraction and adolescent risk behavior involvement: Examining mediation and moderation. *Developmental Psychology*, *44*, 69–80.
- Chandra, A., Mosher, W. D., & Copen, C. (2011, March). Sexual behavior, sexual attraction, and sexual identity in the United States: Data from the 2006–2008 National Survey of Family Growth. *National Health Statistics Reports*, Number 36. U.S. Department of Health and Human Services.
- Chantala, K., & Tabor, J. (2010). *National Longitudinal Study of Adolescent Health: Strategies to perform a design-based analysis using the add-health data*. Retrieved from <http://www.cpc.unc.edu/projects/addhealth/data/guides/weight1.pdf>. Accessed 19 Aug 2011.
- Diamond, L. M. (2008). *Sexual fluidity: Understanding women's love and desire*. Cambridge, MA: Harvard University Press.
- Dickson, N., Paul, C., & Herbison, P. (2003). Same-sex attraction in a birth cohort: Prevalence and persistence in early adulthood. *Social Science and Medicine*, *56*, 1607–1615.
- Ellis, L., Robb, B., & Burke, D. (2005). Sexual orientation in United States and Canadian college students. *Archives of Sexual Behavior*, *34*, 569–581.
- Harris, K. M., Florey, F., Tabor, J., Bearman, P. S., Jones, J., & Udry, J. R. (2003). *The National Longitudinal Study of Adolescent Health: Research Design*. Chapel Hill, NC: Carolina Population Center. <http://www.cpc.unc.edu/projects/addhealth/design> and <http://www.cpc.unc.edu/projects/addhealth/design>. Accessed 19 Aug 2011.
- Hayes, J., Chakraborty, A. T., McManus, S., Bebbington, P., Brugha, T., Nicholson, S., & King, M. (2011). Prevalence of same-sex behavior and orientation in England: Results from a national survey. *Archives of Sexual Behavior*. doi:10.1007/s10508-011-9856-8.
- Kinnish, K. K., Strassberg, D. S., & Turner, C. W. (2005). Sex differences in the flexibility of sexual orientation: A multidimensional retrospective assessment. *Archives of Sexual Behavior*, *34*, 173–183.
- McCabe, S. E., Hughes, T. L., Bostwick, W., Morales, M., & Boyd, C. J. (2011). Measurement of sexual identity in surveys: Implications for substance abuse research. *Archives of Sexual Behavior*. doi:10.1007/s10508-011-9768-7.
- McConaghy, N., Hadzi-Pavlovic, D., Stevens, C., Manicavasagar, V., Buhrich, N., & Vollmer-Conna, U. (2006). Fraternal birth order and ratio of heterosexual/homosexual feelings in women and men. *Journal of Homosexuality*, *51*, 161–174.
- Mock, S. E., & Eibach, R. P. (2011). Stability and change in sexual orientation identity over a 10-year period in adulthood. *Archives of Sexual Behavior*. doi:10.1007/s10508-011-9761-1.
- Ott, M. Q., Corliss, H. L., Wypij, D., Rosario, M., & Austin, S. B. (2011). Stability and change in self-reported sexual orientation identity in young people: Application of mobility metrics. *Archives of Sexual Behavior*, *40*, 519–532.
- Pedersen, W., & Kristiansen, H. W. (2008). Homosexual experience, desire and identity among young adults. *Journal of Homosexuality*, *54*, 68–102.
- Perrin, E. C. (2002). *Sexual orientation in child and adolescent health care*. New York: Kluwer/Plenum.
- Saewyc, E. M., Homma, Y., Skay, C. L., Bearinger, L. H., Resnick, M. D., & Reis, E. (2009). Protective factors in the lives of bisexual adolescents in North America. *American Journal of Public Health*, *99*, 110–117.
- Savin-Williams, R. C. (2005). *The new gay teenager*. Cambridge, MA: Harvard University Press.
- Savin-Williams, R. C. (2006). Who's gay? Does it matter? *Current Directions in Psychological Science*, *15*, 40–44.
- Savin-Williams, R. C., & Ream, G. L. (2007). Prevalence and stability of sexual orientation components during adolescence and young adulthood. *Archives of Sexual Behavior*, *36*, 385–394.
- Smith, A. M. A., Rissel, C. E., Richters, J., Grulich, A. E., & de Visser, R. O. (2003). Sexual identity, sexual attraction and sexual experience among a representative sample of adults. *Australian and New Zealand Journal of Public Health*, *27*, 138–145.
- Stokes, J. P., Damon, W., & McKirnan, D. J. (1997). Predictors of movement toward homosexuality: A longitudinal study of bisexual men. *Journal of Sex Research*, *34*, 304–312.
- Tourangeau, R., & Hee-Choon, S. (1998). *National longitudinal study of adolescent health grand sample weight*. Chapel Hill, NC: Carolina Population Center, University of North Carolina at Chapel Hill. <http://www.cpc.unc.edu/projects/addhealth/data/guides/weights.pdf>. Accessed 26 Dec 2011.
- Udry, J. R., & Bearman, P. S. (1998). *The national longitudinal study of adolescent health*. Retrieved from <http://www.cpc.unc.edu/projects/addhealth/>. Accessed 3 Jan 2011.
- Udry, J. R., & Chantala, K. (2005). Risk factors differ according to same-sex and opposite-sex interest. *Journal of Biosocial Science*, *37*, 481–497.
- van Griensven, F., Kilmarx, P. H., Jeeyapant, S., Manopaiboon, C., Korattana, S., Jenkins, R. A., et al. (2004). The prevalence of bisexual and homosexual orientation and related health risks among adolescents in northern Thailand. *Archives of Sexual Behavior*, *33*, 137–147.
- Vrangalova, Z., & Savin-Williams, R. C. (2012). Mostly heterosexual and mostly gay/lesbian: Evidence for new sexual orientation identities. *Archives of Sexual Behavior*. doi:10.1007/s10508-012-9921-y.