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MEASURING COHABITATION IN NATIONAL SURVEYS

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Measuring Cohabitation in National Surveys

Cohabitation has increased rapidly in the United States and this growth has been termed a “Cohabitation Revolution” (Smock and Manning 2010). Today cohabitation is experienced across the life span, with the majority of young adults spending some time in a cohabiting union (Manning and Stykes 2015) and an increasing share of older Americans living with their cohabiting partner (Brown, Bulanda and Lee 2012). The number of cohabiting couples is at a historic high point, surpassing 8 million in 2015 (U.S. Bureau of the Census 2015). The measurement of cohabitation status and experience has implications for demographic research. Demographers have relied on many different surveys to assess the correlates associated with transitions into cohabiting unions, the stability of cohabiting unions, childbearing patterns of cohabiting couples, and the well-being of children and adults in cohabitation (e.g., Addo, 2014; Brown, Manning and Payne 2014; Guzzo, 2017; Kennedy and Fitch 2012; Kuo and Raley, 2016; Manning 2015; Musick and Michelmore, 2015).

Cohabitation is so common that it is now included as a relationship status in nearly all major national surveys. Demographers have long focused on the measurement of cohabitation in the United States (e.g., Bumpass and Lu 2000; Casper and Cohen 2000). Early estimates of cohabitation were based on indirect measurement, such as POSSLQ (persons of the opposite sex sharing living quarters), but more recent surveys have shifted to direct questions establishing cohabitation status. Even though recent rounds of surveys have included direct questions about cohabitation, the wording of questions measuring cohabitation varies. Rarely have researchers contrasted the measurement of different-gender cohabitation across surveys and a comparison is long overdue (for exceptions see Bumpass and Lu 2000; Casper and Cohen 2000; Hayford and

Morgan 2008). We expect gaps in measurement across surveys to exist, but anticipate the gap has narrowed during a period when cohabitation is quite common and socially accepted.

In this paper we contrast cohabitation status and experience for a comparable cohort of young adults in a specific period of time across four national, population-based surveys widely used to examine cohabitation: the Current Population Survey (CPS), National Longitudinal Study of Adolescent to Adult Health (Add Health), National Longitudinal Study of Youth-97 (NLSY-97), and National Survey of Family Growth (NSFG). Given the age and period restrictions of each data collection as well as the constraint of only ‘opposite sex’ cohabitation in the NSFG our comparisons across these major surveys are limited to young adults, 26-28 years old, and their different-gender cohabiting relationships. We assess reports of young adult different-gender cohabitation status and experience across these surveys and examine how levels differ according to gender, educational attainment, and race/ethnicity. We argue that researchers should be aware of differentials in the measurement of cohabitation across surveys to ensure accurate estimates of cohabitation and to best assess its correlates and implications.

BACKGROUND

Cohabitation was recognized as an increasingly common and important relationship status in the 1970s (e.g., Glick and Norton 1977; Macklin 1978). One strategy in early efforts to study cohabiting couples was to base work on small-scale studies and/or convenience-based samples with dedicated measurement of cohabitation status (Blumstein and Schwartz 1980; Macklin 1978). Another strategy was to rely on indirect measures in population-based surveys that inferred cohabitation status based on the age, marital status, gender, and family composition of the household. These efforts include work using the 1975 Current Population Survey data by Glick and Spanier (1980). The acronym, POSSLQ (persons of the opposite sex sharing living

quarters), referenced these indirect measurement strategies. Beginning in the late 1970s the Census Bureau classified households that contained unmarried respondents 16 or older of the ‘opposite sex’ and included no other adults (see Casper and Cohen 2000). In their review of this measure, Casper and Cohen (2000) stated, “The definition thus misses cohabitators who share households with other adults, and at the same time includes adults who live together without being couples, such as college roommates.” (p. 237). A variety of strategies were employed by researchers to establish “adjusted” indicators of cohabitation, such as limiting the age difference of partners and/or allowing cohabiting households to include related adults (Baughman et al. 2002; Casper and Cohen 2000; Fitch et al. 2005; Moffitt et al. 1998; Winkler 1993).

The research community and federal survey sponsors kept pace with the changing relationship landscape by including measures of cohabitation in national population-based surveys in subsequent years. In the late 1980s, national surveys started to add direct questions about cohabitation status (National Survey of Family Growth, NSFG) and incorporate further detail including cohabitation status and histories (National Survey of Families and Households, NSFH). In addition, these surveys added ‘unmarried partner’ as a relationship status on household rosters in the 1990 Decennial Census and 1995 Current Population Survey. In the mid-1990s several additional population-based surveys followed suit, including cohabitation as a relationship status (Survey of Income and Program Participation, SIPP, National Longitudinal Survey of Youth, NLSY-97) and asking questions to establish full cohabitation histories (National Survey of Family Growth, 1995).

Comparisons of direct and indirect measurement of cohabitation *within* surveys have revealed several types of error. Several studies have empirically demonstrated for the CPS, Decennial Census, and Survey of Income and Program Participation (SIPP) that indirect

measurement (e.g., the POSSLQ) resulted in differential counts of cohabiting couples than direct measurement based on household rosters (Baughman et al. 2002; Casper and Cohen 2000; Fitch et al. 2005; Manning 1995). Both strategies of measurement were recognized as introducing different types of bias and error. For example, the direct measures in the Census and CPS were based on household rosters identifying how individuals were related to the head of household; thus, they excluded cohabiting couples that did not involve the household head. At the same time, noncohabitators could be mistakenly coded as cohabitators based on the inferred measure (e.g., roommates are classified as cohabiting couple).

The first studies comparing levels of cohabitation *across* surveys were published over 15 years ago (and reference cohabitation levels over twenty years ago). Two key studies published in 2000 benchmarked levels of cohabitation across several surveys (Bumpass and Lu 2000; Casper and Cohen 2000). These studies compared cohabitation levels for the 1988 time period using the NSFH, NSFG and CPS (Bumpass and Lu 2000; Casper and Cohen 2000). Levels of cohabitation based on direct measures in the family surveys, NSFG and NSFH, were quite similar but much higher than levels based on the indirect methods in the CPS. For the 1995 time period Casper and Cohen (2000) compared cohabitation levels for women across the following national surveys: Consumer Expenditure Survey (CE), CPS, NSFG, and SIPP. They reported that cohabitation levels based on the direct measures in the NSFG were greater for each age group than levels based on the direct measures in the SIPP and CPS and the indirect methods in the CE. These studies demonstrate the importance of direct measures of cohabitation and the advantages of moving beyond a household roster to measure cohabitation. However, there has been no update of measurement of cohabitation across surveys, which is problematic because these studies documented levels of cohabitation in 1987/88 and 1995 when the number of cohabiting

couples and share of young adults who ever cohabited was 50% lower than today (Manning and Stykes 2015).

Nonetheless, attention to the measurement of cohabitation has continued. A significant recent development in the measurement of cohabitation is the use of ‘partner pointers’ in the CPS to more effectively identify cohabiting partners (Kreider 2008). Rather than relying solely on reports of the household head’s relationship to each household member to identify cohabiting couples, the CPS began using direct questions in 2007 to identify all members of the household who were cohabiting. The head of household was asked whether each unrelated and unmarried member of the household had a “boyfriend, girlfriend, or partner in the household.” Cohabiting partners could be linked using line numbers from the household roster. This direct strategy has identified a sample of cohabitators who differ in terms of a range of sociodemographic indicators from the sample identified through roster method (Kennedy and Fitch 2012; Kreider 2008). The ability to capture cohabiting partners who do not identify as ‘unmarried partner’ in the household roster, and cohabiting couples who are not the head of household, are important benefits of this new approach.

While prior comparative studies have focused on point estimates or snapshots of cohabitation, it is important to include cohabitation experience indicators. The short duration of cohabiting unions (18 months on average) means that point estimates are not well equipped to capture whether individual ever have cohabited. The share of Americans currently cohabiting is quite low in contrast to the share of Americans who have ever cohabited. On one hand, there may be greater variation across surveys in the point estimates than indicators of having ever cohabited, because at times the boundaries between cohabitation and singlehood are blurry. This is evident from studies that document the gradual processes of moving in and moving out along

with high rates of relationship churning in cohabitation (breaking up and getting back together) (Avellar & Smock 2005; Halpern-Meekin et al. 2012; Knab and McLanahan 2007; Manning & Smock 2005; Pollard and Harris 2007; Sassler 2004). As a result, there may be more consensus across surveys in whether young adults have ever cohabited than whether they are cohabiting at the time of interview. On the other hand, point estimates across surveys may be more similar because these indicators avoid retrospective bias, especially over long time intervals (10 years or more) (Morgan and Hayford 2008; Teitler et al. 2006).

Researchers have moved beyond traditional approaches to pioneer alternative ways to assess data quality by relying on in-depth interviews as well as surveys that rely on several indicators of cohabitation and multiple reporters of cohabitation. Questions about the terms used to be reference cohabiting partners have been addressed using in-depth interviews that showcase potential problems using the term ‘unmarried partner’ (Manning and Smock 2005). As a result several surveys have moved away from relying solely on the unmarried partner term and adding boyfriend/girlfriend to the list of relationship options. The specific wording of questions to measure cohabitation in surveys matters, Pollard and Harris (2007) rely on the third wave of the Add Health and find that referencing cohabitation as ‘marriage-like’ leads to lower estimates of cohabitation than items that ask about living together (Pollard and Harris 2007).

Another data quality issue has been establishing the start and end dates of cohabitation. Qualitative data collections demonstrate that it is not a simple transition into and out of cohabiting unions (Manning and Smock 2005; Sassler 2004). While transitions to marriage have an obvious start date that is ‘rehearsed’ annually with anniversaries, transitions to cohabitation are often gradual. For instance, using the Fragile Families data Knab (2005) introduced the idea of “cohabitation as a fuzzy concept” by showing that one in six mothers are cohabiting ‘part-

time,' fewer than 6 or 7 nights. Indeed, many young adult romantic couples in the third wave of the Add Health spend the night together on a regular basis (part-time cohabitation) prior to occupying in single residence (Pollard and Harris 2007). This ambiguity in defining cohabitation has been further illustrated when members of the same family do not always report cohabitation in the same manner. For example, in the Add Health adolescents and their parents do not always agree about their parent's cohabitation status (Brown and Manning 2009) and unmarried parents with children in the Fragile Families disagree about their cohabitation status at the time of birth (Knab and McLanahan 2007). Relatedly, married couples in the NSFH also do not share similar reports of premarital cohabitation, with about one in ten married couples not agreeing about their cohabitation experiences (Thomson and Colella 1992) and nearly half of married couples in a 2010 internet survey differed in their reporting of the timing and duration of cohabitation (Halpern-Meehin and Tach 2013).

A data quality issue specific to measurement of cohabitation experience has been questions about the reliance on retrospective reports. Teitler and colleagues (2006) reported that one in eight mothers were inconsistent in their reporting of cohabitation status at initial interview (time of child's birth) and retrospective report of cohabitation status at one year after the birth. Similarly, Morgan and Hayford (2008) determined that retrospective reporting of cohabitation experience results in lower levels of reporting cohabitation experience than more contemporaneous reporting.

Current Investigation

Cohabitation continues to garner extensive research attention, but no recent study has compared measurement of cohabitation across any of these recent surveys that have been used to study cohabitation: Add Health, CPS, NLSY-97, and NSFG. Each data set offers a different lens on

the measurement of cohabitation, with slightly different sampling, interview mode, frequency, questionnaire design and wording. Using the Add Health and NLSY-97 we present two estimates of cohabitation based on rosters and direct survey questions. We generate estimates of early adult cohabitation experience for a comparable cohort of early millennials (born 1979-82). We focus on young adults who were ages 26-28 in 2007-2008, as all four surveys cover this age group during this period.

We address three research questions. First, we examine how levels of current cohabitation status and cohabitation experience compare across all data sets (the CPS cannot be used to assess cohabitation experience). We expect estimates to differ beyond ordinary random variation across these surveys. Second, we compare levels of cohabitation across data sets according to gender, age, education attainment, and race/ethnicity. Given reported differentials in cohabitation experience by education, race/ethnicity, and gender (Hemez and Manning 2017; Kennedy and Fitch 2012), we present results separately for each subgroup. Further, some sociodemographic groups more often report potentially part-time or in-flux relationships, (e.g., Blacks, lower education and income, younger ages, men) and as a result there may be subgroup variation in the consistency across data sets in reporting of cohabitation (Knab 2005; Knab and McLanahan 2007; Nepomnyaschy and Teitler 2013; Pollard and Harris 2007; Teitler et al. 2008; Vennum, Lindstrom, Monk & Adams 2014). Third, using standardization techniques we investigate whether a potential explanation for variation in the reporting of cohabitation across data sets is the differential in the sociodemographic characteristics of each of the analytic samples. This is important because estimates of cohabitation may differ across surveys depending on the extent to which they over- or under-represent various subgroups.

DATA AND METHODS

We draw on four nationally representative population-based data collections, Add Health, CPS, NLSY-97, and NSFG. To ensure comparability across surveys, we restrict each data set to a specific birth cohort (those born 1979-1982) and period (2007-2008). We also limit our sample to respondents who are not institutionalized (i.e., in military housing, prison, or jail), as the CPS and the NSFG exclude these populations from their sampling frame. Thus, this sample reflects the experiences of a specific cohort in young adulthood (ages 26-28). The wording of the NSFG question on cohabitation is limited to ‘opposite-sex’ cohabitation so we focus on different-gender cohabitation status and experience across all surveys. All data are weighted based on the recommendations provided in the user’s guides by the respective data providers. We provide an overview of each survey focusing on the following: sampling; interview mode and frequency; sample sizes; and question design and wording below and in Table 1. We also provide extensive detail on these features of each survey in Appendix A.

[TABLE 1 About Here]

Sampling

A relevant difference in these data sets is the sampling unit. Respondents in the NSFG, Add Health, and NLSY-97 were women and men who provided information on their own behaviors so all cohabitations were identified directly from the individual who was cohabiting. The CPS is a household survey that collected information at the household level. In the CPS, respondents were ‘knowledgeable’ household heads (aged 15 or older) who provided information for all individuals currently living in the household. If the household head had a cohabiting partner, then cohabitation was identified through direct reporting. However, if the household head reported that someone else living in the household had a cohabiting partner, then cohabitation was identified through proxy reporting (described below).

The sampling frame differs somewhat across surveys. The Add Health data collection is a school-based sample that required respondents were enrolled in 7th-12th grade during the 1994-1995 school year. The NSFG, NLSY-97, and CPS are population-based surveys that did not require enrollment in school to be included in the survey. The Add Health sampling strategy may result in a more highly educated set of respondents who were potentially the least disadvantaged (i.e., respondents who had not dropped out of school). As we limit our sample to respondents from Add Health who were younger at the first wave of data collection (i.e., those in grades with lower dropout rates), it is likely that our sample of young adults from this survey may not be biased based on educational attainment and its correlates.

Interview Mode and Frequency

The respondents in the NSFG and Add Health were interviewed in person; however, Add Health used audio computer-assisted self-interviews (ACASI) to obtain information on relationship histories and other sensitive information. The NLSY-97 respondents were largely interviewed in person (in 2007 about 13% were interviewed via phone) and the CPS respondents were interviewed using a combination of phone and face-to-face interviews. These interviewer-based strategies, in contrast to self-administered surveys, provide opportunities for respondents to query about definitions of terms, such as unmarried partner and offer some assurance that the respondent understands the questions.

The Add Health and NSLY-97 are longitudinal data collections and the CPS and NSFG are based on a cross-sectional design. We selected respondents in the CPS who were interviewed in 2007 or 2008. The NSFG has segmented the 2006-2010 interview into quarters based on interview dates; we select respondents who were interviewed in the June 2006 to December 2008 period (quarters 1-10). Add Health has completed four waves of interviews: 1994-95, 1996,

2001-2002, and 2007-2008. The initial Add Health interview occurred when respondents were in grades 7-12. We limit our analyses to those who participated in the initial interview and wave 4 (2007-2008). The NSLY-97 first interviewed respondents in 1997 when they were ages 12-16 and since that time has conducted yearly interviews. The analyses are limited to respondents who met the age restrictions during the 2007-2008 period.

Sample Sizes

The sample sizes in each of these surveys vary considerably. The Add Health and NSLY-97 are cohort studies each comprising of 15,701 and 8,984 respondents while the NSFG consists of 22,682 respondents ages 15-44 and CPS is based on 75,872 respondents over age 15. As a result, the analytic sample of 26-28 years olds in 2007-2008 differ in size, with 6,264 in the Add Health, 4,349 in the NLSY-97, 1,519 in the NSFG, and 11,543 in the CPS. Unlike the cross-sectional data sets the Add Health and NLSY-97 analytic samples are subject to attrition (discussed below).

Questionnaire Design and Wording

Each survey used unique questions to identify cohabitation, which might influence cohabitation estimates. Appendix A provides a detailed description of cohabitation measurement in each survey. To summarize, the CPS asks about a “girlfriend, boyfriend or partner,” the NSLY-97 queries about living in “marriage-like” sexual relationships, the NSFG specifies a sexual relationship sharing a “usual residence,” and the Add Health refers to sharing a residence with a “romantic or sexual partner.”

Current Cohabitation Status. The current cohabitation status is based on responses between 2007 and 2008. We adopt two strategies to identify cohabiting couples in the Add Health based on the household roster as well as survey questions in the section on relationship history and compare

our estimates using each strategy. The Add Health used state-of-the-art survey methods to identify all the romantic and sexual partners of respondents and collect detailed information on them, including ACASI. One measure of cohabitation in the Add Health is based on the household roster section. In this section, Add Health asked the respondent to list all individuals living in their household. Add Health then asked “Is {INITIALS} male or female?” and “What is {INITIALS} relationship to you?” for each household member listed by the respondent. If the respondent claimed the individual is a partner/boyfriend/girlfriend of a different gender, then they were labeled as currently cohabiting. The second measure of cohabitation in the Add Health relies on information from the “relationships” section that utilized ACASI and partner rosters. ACASI not only maximizes privacy but also allows for more complicated skip patterns (Paik 2015). The relationships section asked respondents who had never married “How many romantic or sexual partners have you ever lived with for one month or more?” It asked ever married respondents “Not counting the (partner/partners) you married, how many other romantic or sexual partners have you ever lived with for one month or more? Both groups of respondents were instructed that “By 'lived with' we mean that neither of you kept a separate residence while you were living together.” Respondents with cohabitation experience were asked to list all partners with whom they had cohabited. For each cohabiting partner the respondent named, Add Health asked “Are you currently cohabiting with {initials}?” and “Is {initials} male or female?” If the respondent claimed they had any current different-gender partners with whom they were cohabiting, they were classified as currently cohabiting.

The NLSY-97 has a slightly different wording than the other surveys. As in the case of Add Health, we focus on two strategies to identify cohabitators in the NLSY-97: roster and survey questions. The roster method identifies cohabitation based on individuals who report

‘Lover/Romantic Partner’ on the household roster. The survey includes relationship questions begin with the following prompt: “In this study we define a marriage-like relationship as a sexual relationship in which partners establish one household and live together.” Respondents reply whether or not they were in a marriage-like relationship. Using responses to these questions, and information regarding past marital history, the NLSY-97 created a variable indicating marital and cohabitation status as of the survey date for each round. Possible responses include “Never married, cohabiting”, “Never married, not cohabiting”, “Married, spouse present”, “Married, spouse absent”, “Separated, cohabiting”, “Separated, not cohabiting”, “Divorced, cohabiting”, “Divorced, not cohabiting”, “Widowed, cohabiting”, “Widowed, not cohabiting”. Respondents are considered to be currently cohabitating if they report any cohabitation in the responses. The gender of the cohabiting partner(s) over the past year is established to ensure it was a different-gender cohabiting partner.

The NSFG current cohabitation status is based on a single item question. Respondents are shown a card to identify their marital or cohabiting status and the category, “not married but living together with a partner of the opposite sex” is included in the list of options (“Married, Widowed, Divorced, Separated, because you and your spouse are not getting along, Never been married.” If respondents report such a status, current cohabitation is established. These are not necessarily mutually exclusive categories as respondents could be cohabiting and separated (Gates 2011).

In the CPS, the household head reports on their relationship to all other household members and includes “boyfriend, girlfriend, or partner.” Individuals are included on the roster if it is their usual address. Starting in 2007 the CPS unmarried household heads living with unrelated adults were asked if they have a boyfriend, girlfriend, or partner in the household. If

the answer is affirmative, the respondent identifies their cohabiting partner on the household roster. The same question is then asked regarding all additional unmarried adults in the household – with the exception of members already identified as the cohabiting partner of the respondent – allowing cohabiting relationships that do not involve the household head to be identified. This strategy determines cohabitation among all household members and is called ‘partner pointers.’ The partner pointers in the CPS move beyond the basic strategy employed in the American Community Survey of only identifying cohabitation of the head of household.

Cohabiting Experience. The cohabiting experience indicator captures whether the respondent had ever cohabited with a different-gender partner. Given the short duration of cohabiting unions, this measure better captures cohabitation experience than a simple snapshot measure of current cohabitation. The CPS can only be used to establish current cohabitation status and not cohabitation experience. In the Add Health, we draw upon the relationships section (discussed earlier) to determine cohabiting experience. If respondents named at least one different-gender cohabiting partner, they were defined as having ever cohabited.

In the NLSY-97, ever having cohabited is based on monthly reports of living arrangements. Respondents are asked at each interview “Since the date of our last interview, have you been, married to someone, or lived with a partner of the opposite sex in a marriage-like relationship where you established one household and lived together?” If such a living arrangement existed in the past year, respondents are asked to specify the month(s) during which such a living arrangement began and ended. The gender of the cohabiting partner was determined to ensure it was a different-gender cohabiting partner. Respondents who affirmatively reply to a cohabiting relationship with someone of a different gender in any month of the study are coded as having ever cohabited.

The NSFG asked respondents about experiences living together with spouses and other individuals. Several questions involving the wording “Do not count “dating” or “sleeping over” as living together. By living together, I mean having a sexual relationship while sharing the same usual residence” are used to establish cohabitation experience. Respondents who were currently cohabiting or reported cohabiting with a spouse or other individual in the past are coded as ever having cohabited.

Analyses

Our primary analyses were designed to identify the percent of young women and men who were currently cohabiting or had ever cohabited. The weighted percentage currently or ever cohabiting are estimated along with 95% confidence intervals. The NSLY-97 is the reference survey in the tables, but more detailed may be obtained from the upper and lower bounds of the confidence intervals presented in Appendix B. We provide those estimates according to gender, education, and race/ethnicity. The sociodemographic indicators are measured in the same manner across surveys. *Educational attainment* was coded into four mutually exclusive and exhaustive categories: less than high school, high school graduate, some college, and a bachelor’s degree or higher. *Race/ethnicity* was coded as four mutually exclusive and exhaustive categories that are available in all the data sets: White Non- Hispanic, Black Non-Hispanic, Hispanic, and other (including multi-racial). Given the small sample sizes of Hispanics in the NSFG, we do not distinguish nativity status. *Gender* was coded into male and female based on their response at the most recent interview. *Age* was measured at time of the survey and coded into three categories.

Standardization techniques are used to assess whether differences in reports of cohabitation across surveys are due to sociodemographic compositional differences across surveys. This is important because surveys that disproportionately over- or under-represented a

subgroup, may be consequential for cohabitation estimates. Specifically, we ran logistic regression models of current cohabitation for the analytic sample of each survey that included indicator variables for the sets of variables displayed in Table 2 (i.e., education, race, gender, and age). Then, we computed two sets of predicted values for the percent cohabiting using coefficients from these models. One set utilized the sample means for each survey and the other set utilized the sample means for the CPS; these sample means are displayed in Table 2. Comparisons of these two sets of predicted values indicate the extent to which the estimates are due to sample composition differentials.

RESULTS

The weighted percentages and unweighted counts of respondents in our analytic sample are included in all tables. Table 2 demonstrates how the analytic samples differ according to education, race/ethnicity, gender, age. With respect to educational attainment, the Add Health contains greater shares of respondents with ‘some college’ education than the other data sets. Young adults in the Add Health and NSFG have lower shares with only a high school degree than the CPS.¹ The NSFG has a greater share of respondents with less than a high school degree than the CPS. About one-third of each data set is composed of college graduates. The race and ethnic distribution differs across surveys with a greater share of whites in the Add Health and NLSY-97, and the NSFG and CPS both have greater shares of Hispanics than the other data sets. The gender and age distributions across data sets are similar. We use the distribution of

¹ To check how these levels compare to Census data, we use data from the 2008 American Community Survey to determine the levels of education for a comparable age group (25-34): 14% less than a high school degree, 25% high school degree, 32% some college, and 29% college graduate. The NSFG and CPS match the racial and ethnic distributions in the ACS. Perhaps reasons the NLSY-97 and Add Health differ is greater attrition in longitudinal data by youth from more disadvantaged backgrounds (Aughinbaugh and Gardecki 2008; Brownstein et al. 2011).

respondents in the CPS for our standardizations below.

[Table 2 About Here]

Current Cohabitation Status

Figure 1 presents the percentage currently cohabiting along with 95% confidence intervals of young adults who reported cohabiting at the time of the survey. (The estimates are also presented in Table 3 and their confidence intervals in Appendix Table B1.) Overall, similar shares of respondents (i.e., about one-fifth of respondents) in all surveys, except the CPS, were classified as cohabiting at the time of interview. The levels are highest in the Add Health (22.6% in the relationship survey questions) and lowest in the CPS (13.4%). Figure 1 shows that estimates based on the CPS are statistically different than estimates based on the other surveys. The NSFG estimates are significantly lower than the Add Health and NSLY-97 estimates. The Add Health estimates surpass the NSLY-97 estimates. The Add Health and NLSY-97 estimates based on the survey relationship questions do not significantly differ from their respective roster estimates. Given the relatively large size of this age group, these relatively small percentage differentials result in substantial differences in population counts. In terms of counts over one million more cohabitators are identified relying on the Add Health than the CPS.

Several supplemental analyses were conducted to determine the potential source of differentials in the CPS and other surveys. To account for the indirect reports of cohabitation in the CPS (household heads report on the status of other household members) we restricted the other data sets to household heads, and to assess whether the CPS strategy of asking cohabitation status only of unmarried household members was driving differentials we analyzed only unmarried individuals in the other surveys. These analyses indicate that the differentials between the CPS and the other surveys were greater when these restrictions were applied (results not

shown). Additional sensitivity analyses demonstrated that differentials were not due to the specific age range or period. We find that the lower levels of cohabitation in CPS compared to the Add Health and NSFG persisted with the use of an older age range (29-31). This contrast was not possible with the NSLY-97 because of the age restrictions of the initial interview. Similarly, comparing the NSFG and CPS for a more recent time period (2013-2015) also yields significantly lower estimates in the CPS (results not shown).

[Table 3 About Here]

Table 3 presents the percentage of respondents who indicated they were currently cohabiting with a different-gender partner at the time of interview according to the sociodemographic indicators across the surveys. We report whether the differences between the estimates are significant based on 95% confidence intervals presented in Appendix Table B1. For the sake of parsimony, we highlight significant differences between the NLSY-97 survey and other data sources. The CPS has significantly lower levels of cohabitation for each education category than the NSLY-97 survey as well as the Add Health and NLSY-97 roster (Appendix B). High school graduates and college graduates in the NSFG share similar levels of cohabitation as the CPS and lower levels than in the other surveys. An education gradient is apparent in all of the surveys; the CPS education gradient distinguishes only the college educated (See Appendix B). It appears that cohabitation among the least educated may be the most seriously undercounted in the CPS.

Reports of current cohabitation status are significantly lower for each race and ethnic group considered in the CPS than the NSLY-97 survey. White respondents in the NSFG report lower levels of cohabitation than in the Add Health or NLSY-97 survey but not different from NSLY-roster or CPS. The levels of current cohabitation among Blacks was significantly lower in

the CPS than the NSLY-97 or Add Health. Black respondents in the Add Health report greater levels of cohabitation than in the NSFG and NLSY-97. Hispanic reports of cohabitation are similar across the Add Health, NSLY-97, and NSFG. Reports of cohabitation in the NLSY-97 survey and roster do not significantly differ for the race/ethnic groups considered. However, within the Add Health, roster-based estimates of the levels of cohabitation among Blacks are lower than survey-based estimates. These differentials between the Add Health roster and survey suggest that it is the way information on cohabitation is obtained (e.g detailed question sequences and ACASI) rather than the sample that generates higher reports of cohabitation among Blacks.

Estimates of current cohabitation in the CPS are lower for men than in the other surveys. Women in the CPS, NSFG, and NLSY-97 roster report similar levels of cohabitation and these levels are significantly lower than the NLSY-97 survey or Add Health survey or roster. Contrasts within surveys indicate there are no gender differences in reports of cohabitation (Appendix B). Each age group reports lower levels of cohabitation in the CPS than other surveys. The youngest respondents (26 years old) in the Add Health survey and roster report higher levels of cohabitation than in the other surveys. Among 28 year olds the NSFG has significantly lower levels than the NLSY-97 survey and roster, but similar levels as the Add Health and CPS.

Ever Cohabit

Figure 2 presents the percentages and the 95% confidence intervals for cohabitation experience (shown in Table 4 and Appendix Table B2). In terms of having ever lived with a cohabiting partner, levels are highest in the Add Health (69.6%) and significantly lower in the NSFG and the NLSY-97 (60.5% and 59.0%), respectively. With regard to numbers of young

adults experiencing cohabitation, the Add Health estimates result in 1.5 million more young adults who ever having cohabited than the NLSY-97 (results not shown).

[Figure 2 About Here]

Table 4 shows the percentage of young adults who indicate they have ever cohabited and demonstrates considerable variation according to sociodemographic indicators (Appendix Table B2 presents the upper and lower bounds of the confidence intervals). An education gradient is once again evident, with cohabitation experience decreasing as education rises. At each education level greater shares of Add Health respondents report having ever cohabited than NLSY-97 respondents. Respondents with the highest education levels (some college or college graduates) in the Add Health more often report having ever cohabited than similarly educated respondents in the NSFG. With regard to race/ethnicity, levels of cohabitation for Hispanic respondents are similar across the surveys. White respondents in the Add Health report greater cohabitation experience than white respondents in the NSFG or NLSY-97. Black respondents in the NLSY-97 report lower levels of cohabitation experience than their counterparts in the NSFG and Add Health. There are more differentials in reports of cohabitation among males than females. Two-thirds of males in Add Health have ever cohabited, in comparison to 61% in the NSFG and 55% in the NLSY-97. Cohabitation experience is more commonly reported in the Add Health among 26 and 27 year olds than the other surveys. The differentials in cohabitation experience are not significant for the oldest age category, 28 year olds, across surveys.

[Table 4 About Here]

Standardization

As documented above, overall estimates of the percent currently and ever cohabiting differ across the analytic samples we selected from these surveys. On the one hand, this could

reflect the fact that the demographic composition of these samples differs slightly. On the other hand, it could reflect the fact that estimates differ across surveys for specific demographic groups (e.g., respondents who did not graduate from high school). Given the patterns in the prior tables, we suspect that differences in cohabitation across the analytic samples of these surveys are driven more by survey features than by sample composition. To investigate this issue, we computed standardized estimates of current cohabitation for the Add Health, NSFG, and NLSY97 that constrain the demographic composition of these surveys to be identical to that of the CPS (e.g., Casper and Cohen 2000) (Table 5). A comparison of standardized values for the different analytic sample reveals the extent to which differences in estimates of current cohabitation are due to measurement, as opposed to sampling.

[Table 5 about Here]

The first panel shows the estimates of the percent currently cohabiting in Add Health, NSFG, and NLSY97 barely change when their distributions are standardized to match that of the CPS. Standardization increases the percent cohabiting slightly for Add Health and the NLSY97 while decreasing it marginally for the NSFG. To offer a specific example, the percent cohabiting in Add Health increases from 20.15% to 20.64% with the switch from Add Health sample means to CPS sample means. Additional analyses (not shown) suggest that differences between the CPS and the other three surveys in the predicted percent currently cohabiting are driven more by the intercept than the coefficients. Of course, predicted probabilities for logit models estimated using sample means sample will not necessarily match the observed probabilities (e.g., Cancian et al. 2014). It is reassuring to note how closely the predicted values for percent currently cohabiting based on own sample means for Add Health, NSFG, and NLSY97 (rather than the CPS means) are extremely close to the values displayed in Table 2. Similar patterns are obtained as presented

in the lower panel when analyzing the share of young men and women who have ever cohabited using the CPS as the baseline estimates of composition of the age group (i.e., minimal shifts in the survey estimates). Importantly, the results from Table 5 suggest that differences across these surveys are largely an artifact of measurement rather than sampling.

DISCUSSION

A critical task in family studies and demography is to assess measurement of key family events, including cohabitation (e.g., Brown and Manning 2011). These data provide an opportunity to reassess the quality of data on cohabitation. Our study yielded four key conclusions. First, overall estimates of current cohabitation status and any cohabitation experience are different across the four surveys that we examined. We find these differences appear to be a result of the measurement strategy and not the composition of the surveys. The CPS produced comparably modest estimates of current cohabitation status. Consistent with our expectations and findings from older studies (Bumpass and Lu 2000; Casper and Cohen 2000), direct reports from respondents NLSY-97, Add Health, and NSFG produced higher population estimates of cohabitation than household head reports of cohabitation for all household members in the CPS. The CPS is typically used to report levels and trends in cohabitation family living arrangements and may be underreporting current cohabitation status, especially for those with the lowest education levels. We determined that these gaps persist when we use a different age range or relied on a more recent time period.

Each survey with direct questions (Add Health, NLSY-97, and NSFG) differ somewhat in levels of cohabitation. Relying on the NSFG results in significantly lower levels of current cohabitation than the NSLY-97 or Add Health and significantly lower levels ever cohabiting than the Add Health. Respondents in the NSLY-97 and Add Health share similar levels of

current cohabitation, but the Add Health respondents report significantly higher levels of ever cohabiting. These differentials in cohabitation experience are likely most consequential for research predicting factors that are associated with entry and exists from cohabitation as well as implications of cohabitation for child and adult well-being.

More specifically, the question wording in the NSLY references ‘marriage-like’ relationships which may mean only the most stable relationships will be defined by respondents as cohabiting. The lower levels of ever cohabiting in the NLSY-97 than the Add Health is consistent with prior work that shows questions about ‘marriage-like’ questions yielded lower estimates of cohabitation than ‘ever cohabited’ questions (Pollard and Harris 2007). While problematic to change how relationships are measured in a longitudinal data, this approach should be reconsidered as this question wording persists in the current data collection.

The NSFG question sequence used to determine current cohabitation status is anchored around questions about marital status. This strategy means that NSFG respondents could be framing cohabitation as a more formal relationship status and must select whether they are currently married or currently cohabiting, but these categories are not technically mutually exclusive (Gates 2011). In contrast, the cohabitation histories in the NSFG are separate from the marital history questions and specify what does not constitute cohabitation, “dating” or “sleeping over,” and is quite specific about the nature of the relationship, “sexual relationship while sharing the same usual residence.” Even though they adopt unique approaches the NSFG and NLSY-97 obtain similar estimates in having ever cohabited.

The Add Health provides the most detailed question sequences on cohabitation status and along with their use of the audio-ACASI may explain the relatively high levels of cohabitation. Yet, higher levels do not mean they are the ‘best’ or most accurate indicators of cohabitation.

The higher estimates in Add Health may be due to the strategy of referencing each “romantic or sexual partner” to anchor questions about key events in the relationship and is not based on one item requiring respondents to choose one status among many (e.g. married). Such a method was pioneered in the National Survey of Adolescent Males (NSAM) to obtain more complete reports on fertility by improving recall and appears to have been effective (Lindberg et al. 1998).

Further the question items were quite specific about the time frame of cohabitation (one month or more) and the independence of the residence (“neither of you kept a separate residence while you were living together”). This strategy requires more complex interview instruments and may not be feasible in general surveys. Our view is that a strategy based on a single question that is akin to the Add Health item may provide a balance of a clear definition of cohabitation and a parsimonious approach.

Second, rosters and survey estimates of current cohabitation status do not significantly differ and this finding holds for each socioeconomic group considered in the paper. The levels of cohabitation relying on the roster and the relationship questions more closely mirror one another in the NLSY-97 (95% concordance) than in the Add Health (85% concordance). These findings have implications for ongoing and future survey collections and suggest there is not a serious problem with relying on rosters for identifying cohabiting couples. Thus, the CPS roster itself does not seem to be the reason why there are lower reports of cohabitation. All the rosters reference ‘usual’ residence to ensure that all relevant individuals are included on rosters.

Third, we found variation in reports of cohabitation according to race/ethnicity, education level, gender, and age. Prior research (Bumpass and Lu 2000; Casper and Cohen 2000) has not examined differentials in levels of cohabitation across surveys according to sociodemographic indicators. The sociodemographic variation depends somewhat on the survey under

consideration and whether current or ever cohabitation experience is being measured. One exception is that Hispanics report similar levels of currently cohabiting and ever cohabited across the surveys (except lower levels in the CPS). A related issue is whether the same sociodemographic gradients exist within each survey. An education gradient is evident across all surveys (only in the CPS for the college educated) with lower cohabitation levels amongst the most educated. The racial patterns in current cohabitation differ: in the CPS significantly fewer Blacks cohabit than Whites, in the NLSY-97 and NSFG similar shares of Blacks and Whites currently cohabit, and in the Add Health more Blacks cohabit than Whites. No gender differences exist in reporting cohabitation within surveys, except higher shares of women in the NLSY-97 claim to have ever cohabited. Thus, assessments of cohabitation differentials for sociodemographic subgroups are not always consistent across surveys and are likely dependent on measurement. It is possible that findings related to magnitudes of sociodemographic differentials in precursors and implications of cohabitation may differ across surveys.

A longstanding concern about cohabitation is whether it is a full-time or part-time living arrangement. The surveys attempt to clarify 'usual' residence, but there are certainly 'part-time' cohabitations along with relationships that are more ambiguous and in flux. Part-time cohabitation may occur as couples 'slide' into and out of cohabitation indicating a gradual and blurry (Binstock and Thornton 2003; Manning and Smock 2003; Pollard and Harris 2007; Sassler 2004). Knab (2005) argues that part-time cohabitation is relatively common (one in seven) among unmarried mothers and using an earlier wave of the Add Health (2001/2002) Pollard and Harris (2007) report that 12% of cohabiting women and 17% of men had an additional separate residence. Further, cohabitators experience churning with periods of breaking up and getting back together, about half of young adult cohabiting couples (Halpern-Meehin et

al. 2012) and about one-quarter of cohabiting parents (Nepomnyaschy and Teitler 2013) experienced churning. The evidence shows these relationships that are in more flux were more common among African Americans, younger respondents, men, and lower education groups. Thus, our work is consistent with prior research as it appears that cohabitation estimates among some population subgroups are more highly dependent on the measurement strategy (Knab 2005).

Fourth, compositional differences in the varying samples do not appear to be driving the differing levels of cohabitation across surveys. Given differences in reports of cohabitation according to sociodemographic characteristics, it is possible that the compositional differences in the varying samples are responsible for the differing levels of cohabitation. However, the standardized estimates suggested that the differences in the levels of currently or ever cohabiting among young adults are not due to the composition of the sample. Thus, it appears that it is the measurement of cohabitation rather than sample composition that explains differences in the reporting of cohabitation.

While this paper provides an in-depth investigation of four major surveys there are many other data collection efforts that merit scrutiny. Attention to more recent estimates of cohabitation is warranted and may become more complex as men and women experience greater numbers of cohabiting unions or serial cohabitation (Lichter, Turner, and Sassler 2010; Vespa 2014). Further contrasts across surveys in cohabitation measurement in other federally sponsored surveys such as the Panel Study of Income Dynamics, National Health Interview Survey, and National Longitudinal Survey of Youth 1979 is warranted. Cohabitation is certainly an increasingly common context for having and raising children (Kennedy and Fitch 2012) so attention to measurement of cohabitation in surveys targeted at children is important, such as the

Fragile Families, National Survey of Children's Health and Early Childhood Longitudinal Study (ECLS-K, ECLS-B). A next step is to focus on how measurement issues influence research on the implications for children. Given growing levels of cohabitation among older adults (Brown et al. 2012), further attention to cohabitation measurement in surveys targeting their health and well-being is also important, such as the Health and Retirement Survey and National Social Life and Aging Project.

Our analysis is limited to one age group and one point in time, and we expect similar differentials to exist across the life course. Our work is limited to different-gender couples because the NSFG items are restricted to only different-gender relationships meaning that same-gender cohabiting couples are excluded from the NSFG. Comparisons of the measurement of cohabitation among same-gender couples across surveys is an important next step. Finally, possible testing of how responses to questions on cohabitation differ according to education level, race and ethnic groups as well as for men and women is warranted.

Researchers must develop valid survey instruments that can produce accurate estimates that capture diversity in family dynamics. Unfortunately, there is no 'gold standard' for measurement of cohabitation, such as a federal registry or administrative data on cohabitation. We present the variation in the measurement of cohabitation across nationally representative surveys and suggest a more uniform strategy to measure cohabitation and the inclusion of all unions, not just different-gender unions. Even though cohabitation is widespread, it remains an "incomplete institution" with resulting measurements challenges, including blurred lines about the starting and ending of cohabiting unions (e.g., Avellar and Smock 2005; Binstock and Thornton 2003; Manning and Smock 2005; Pollard and Harris 2007). The inclusion of cohabiting relationships that are in flux or churning are important and may be better measured

with specific direct questions than rosters. Our findings not only have implications for the design of national surveys, but also results based on the surveys we compared. Attention to differences in sampling and questionnaire strategies are important factors in producing accurate estimates of cohabitation as well as correlates predicting the formation and stability of cohabitation along with research on the implications of cohabitation for children and adults. Researchers need to be more aware of the limitations and benefits of each strategy to collect data on cohabitation and to clearly specify how cohabitation is measured. Casper and Cohen's (2000) conclusion is still on point, "we must consider more carefully how cohabitation ought to be conceptualized and whether it should be conceptualized different across surveys, depending on the purpose of the study." We urge family scholars and policy makers to consider these implications when interpreting results about cohabitation across data collections.

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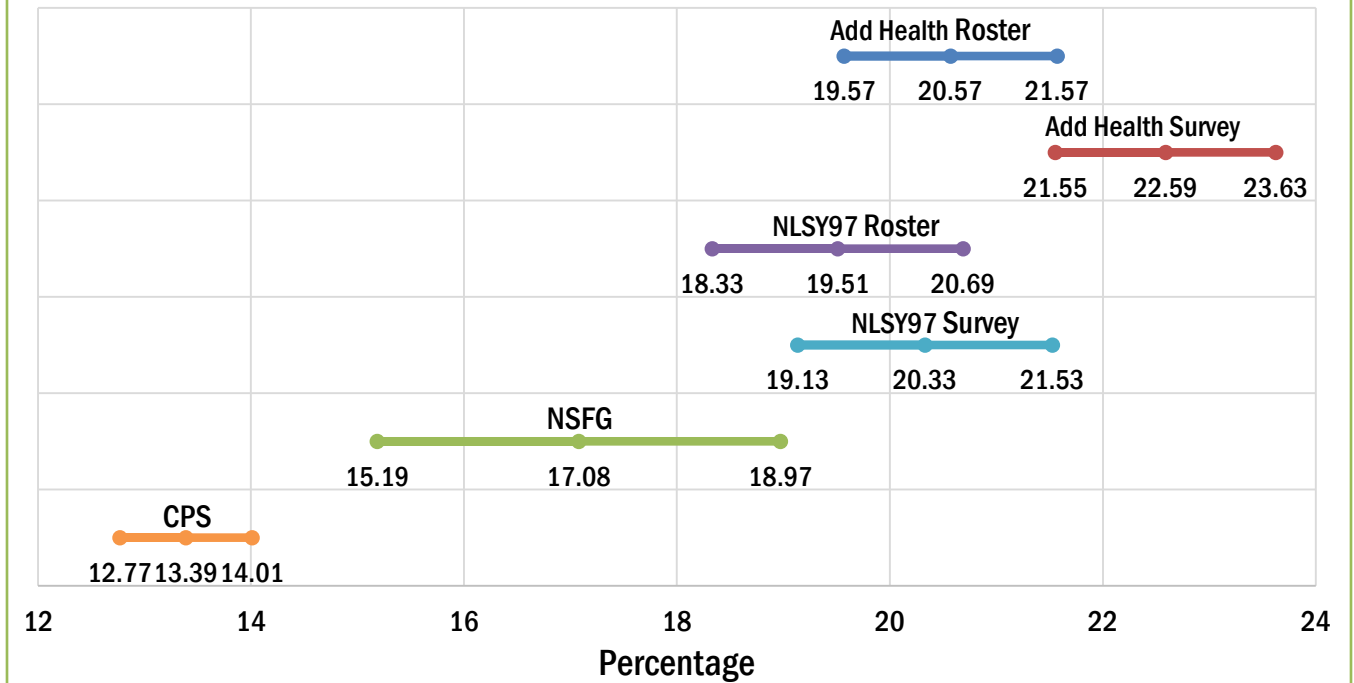
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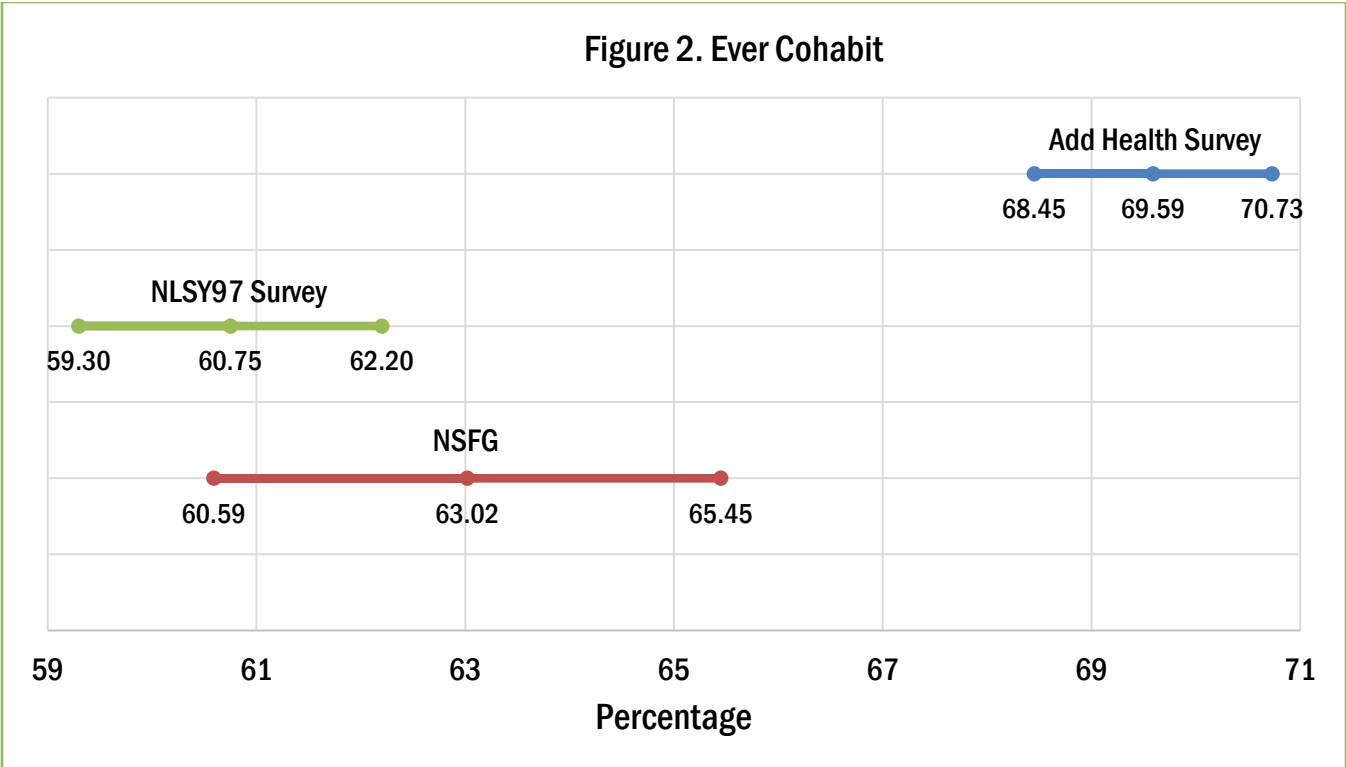
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Figure 1. Currently Cohabiting



Sources: Add Health: National Longitudinal Survey of Adolescent to Adult Health
NLSY-97: National Longitudinal Survey of Youth 1997
NSFG: National Survey of Family Growth
CPS: Current Population Survey

Figure 2. Ever Cohabit



Sources: Add Health: National Longitudinal Survey of Adolescent to Adult Health
NLSY-97: National Longitudinal Survey of Youth 1997
NSFG: National Survey of Family Growth

Table 1. Cohabitation Measurement in Four National Surveys

	Add Health		NLSY-97		NSFG	CPS
	Roster	Survey	Roster	Survey		
Survey Year	2007-2008	2007-2008	2008; 2007 if not interviewed in 2008	2008; 2007 if not interviewed in 2008	2006-2008	2007-2008
Sampling Unit	Individual	Individual	Individual	Individual	Individual	Household
Interview Mode	Face to face	ACASI	Face to face & Phone	Face to face & Phone	Face to face	Face to face & Phone
Survey Type	Longitudinal	Longitudinal	Longitudinal	Longitudinal	Cross-Sectional	Cross-Sectional
Interview Cycle	Wave 4	Wave 4	Rounds 11 & 12	Rounds 11 & 12	First 8 Quarters of 2006-2010	2007 & 2008
Respondent N	6,264	6,264	4,349	4,349	1,518	11,543
Roster Determined	"How many people live with you? Don't count yourself. If someone usually lives with you but is away temporarily include him or her."	N/A	"Here is a list of people who usually live in the household at your current residence at this time. Besides the people on this list, are there any other people who usually live in your current household at this time?"	N/A	N/A	"What are the names of all persons living or staying here? / What is the name of the next person. Is this (name of person talking about)'s usual place of residence?"

Table 1. Cohabitation Measurement in Four National Surveys (continued)

	Add Health		NLSY-97		NSFG	CPS
	Roster	Survey	Roster	Survey		
Wording of Current Cohabitation Measure	"Partner/boy friend/girlfriend" on the household roster	"How many romantic or sexual partners have you ever lived with for one month or more? By 'lived with' we mean that neither of you kept a separate residence while you were living together."	"Lover/romantic partner" on the household roster	"In this study we define a marriage-like relationship as a sexual relationship in which partners establish one household and live together."	Aa card Is shown and respondents who select "not married but living with a partner of the opposite sex" are considered currently cohabiting.	Unmarried head of households has "boyfriend, girlfriend, or partner" or the head of household identifies the cohabiting partner for each unmarried adults in the household.
Wording of Ever Cohabited Measure	N/A	If at least one identified above.	N/A	"Since the date of our last interview, have you been, married to someone, or lived with a partner of the opposite sex in a marriage-like relationship where you established one household and lived together?"	"Have you ever lived together with a man? Do not count "dating" or "sleeping over" as living together. By living together, I mean having a sexual relationship while sharing the same usual residence. "	N/A

Add Health: National Longitudinal Survey of Adolescent to Adult Health

NLSY-97: National Longitudinal Survey of Youth 1997

NSFG: National Survey of Family Growth

CPS: Current Population Survey

ACASI: Audio computer-assisted self-interview

Table 2: Demographic Characteristics of Analytical Samples

Variable	Analytical Sample			
	Add Health	NLSY97	NSFG	CPS (ref)
Total	100.00	100.00	100.00	100.00
Education				
Less than HS	10.26	10.87	18.98 *	12.31
HS	17.40 *	25.86	22.21 *	28.66
Some College	42.49 *	29.60	25.10	28.03
College and Above	29.86	33.66	33.71	31.00
Race				
Non-Hispanic White	67.71 *	70.83 *	60.83	60.08
Non-Hispanic Black	13.41	15.02	13.89	12.64
Hispanic	11.56 *	12.95 *	19.08	20.20
Other	7.32	1.20 *	6.20	7.08
Gender				
Male	49.04	50.69	49.96	51.03
Female	50.96	49.31	50.04	48.97
Age				
26	31.03	35.58	36.30	33.29
27	33.13	34.61	31.19	34.18
28	35.84	29.81	32.51	32.53
<i>N</i>	6,264	4,349	1,518	11,543

*Significantly different from CPS ($p < 0.05$)

Notes: Sample is limited to respondents aged 26-28 in 2007 and 2008.

The percentages are weighted.

Sources: National Longitudinal Study of Adolescent to Adult Health (Add Health); National Longitudinal Survey of Youth (NLSY-97); National Survey of Family Growth (NSFG); Current Population Survey (CPS).

Table 3: Percentages Currently Cohabiting by Demographic Characteristic

	Add Health		NLSY97		NSFG	CPS
	Roster	Survey	Roster	Survey (ref)		
Total	20.57	22.59 *	19.51	20.33	17.08 *	13.39 *
Education						
Less than HS	29.61	33.22	27.60	29.81	30.12	12.87 *
HS	23.62	26.65	21.82	22.25	15.03 *	13.81 *
Some College	19.79	22.03	19.98	20.82	20.02	14.72 *
College and Above	16.81	17.37	14.72	15.37	8.91 *	12.01 *
Race						
Non-Hispanic White	20.54	21.70	19.92	20.47	16.05 *	15.33 *
Non-Hispanic Black	22.58 *	29.14 *	16.80	17.91	12.60	10.25 *
Hispanic	17.90	19.35	20.56	22.61	24.74	10.60 *
Other	21.45	23.95	18.03	18.03	13.68	10.49
Gender						
Male	20.50	22.31	18.83	19.47	17.61	13.32 *
Female	20.64	22.86	20.22	21.22	16.56 *	13.46 *
Age						
26	23.89	26.79 *	20.59	21.16	20.60	13.72 *
27	21.31	22.87	17.86	19.16	15.46	13.54 *
28	17.02	18.69	20.16	20.71	14.71 *	12.90 *

*Significantly different from NLYS97-Survey ($p < 0.05$) lower and upper confidence intervals shown in Appendix Table B1.

Notes: Sample is limited to respondents aged 26-28 in 2007 and 2008. Percentages are weighted.

Sources: National Longitudinal Study of Adolescent to Adult Health (Add Health); National Longitudinal Survey of Youth (NLSY-97); National Survey of Family Growth (NSFG); Current Population Survey (CPS).

Table 4: Percentages Ever Cohabit by Demographic Characteristic

	Add Health Survey	NLSY97 Survey (ref)	NSFG
Total	69.59 *	60.75	63.02
Education			
Less than HS	86.63 *	77.18	83.21
HS	74.54 *	68.97	74.55
Some College	73.06 *	64.05	64.42
College and Above	55.92 *	46.12	43.03
Race			
Non-Hispanic White	71.20 *	62.27	64.15
Non-Hispanic Black	69.79 *	56.10	64.93 *
Hispanic	63.29	58.75	65.84
Other	64.31	54.74	39.03
Gender			
Male	68.26 *	54.76	60.96 *
Female	70.87 *	66.76	65.09
Age			
26	66.58 *	57.36	60.01
27	73.42 *	60.81	62.20
28	68.66	64.87	67.17

*Significantly different from NLYS97-Survey ($p < 0.05$) lower and upper confidence intervals shown in Appendix Table B2.

Notes: Sample is limited to respondents aged 26-28 in 2007 and 2008.

Percentages are weighted.

Sources: National Longitudinal Study of Adolescent to Adult Health (Add Health); National Longitudinal Survey of Youth (NLSY-97); National Survey of Family Growth (NSFG).

Table 5. Predicted Percent Currently Cohabiting and Ever Cohabit Using Survey Sample Coefficients and Means Versus CPS Means

Means	Survey Sample Coefficients of Currently Cohabiting					NSFG	CPS
	Add Health		NLSY-97				
	Roster	Survey	Roster	Survey			
Sample Characteristics	20.15	25.98	19.08	19.42	15.48	13.39	
CPS Characteristics	20.64	27.21	19.32	19.74	15.10	13.39	

Means	Survey Sample Coefficients of Ever Cohabit				NSFG	CPS
	Add Health		NLSY-97			
	Household	Relationship	Roster	Relationship		
Sample Characteristics	N/A	70.80	N/A	61.70	64.76	N/A
CPS Characteristics	N/A	70.27	N/A	62.13	64.01	N/A

Notes: Predicted values based on logistic models of current cohabitation status and ever cohabit that includes indicators for variables shown in Table 2.

Sources: National Longitudinal Study of Adolescent to Adult Health (Add Health); National Longitudinal Survey of Youth (NLSY-97); National Survey of Family Growth (NSFG); Current Population Survey (CPS).

APPENDIX A: DETAILED DESCRIPTION OF COHABITATION MEASURES AND CODING IN EACH DATA SET

CURRENT COHABITATION

ADD HEALTH: National Longitudinal Study of Adolescent to Adult Health

Relationship File:

- A. Respondent's gender: (response categories: Male, Female)
- B. If respondent has never been married, he/she is asked "How many romantic or sexual partners have you ever lived with for one month or more? By 'lived with' we mean that neither of you kept a separate residence while you were living together." If respondent has been married, he/she is asked "Not counting the (partner/partners) you married, how many other romantic or sexual partners have you ever lived with for one month or more? By 'lived with' we mean that neither of you kept a separate residence while you were living together." Respondents are asked this question before questions C-E, providing them with a definition of cohabitation.
(response categories: 0-20, Refused, Don't know)
- C. Respondent lists all partners with whom they have married, cohabited, or had a "romantic relationship or sexual encounter that resulted in a pregnancy." Respondent is also asked to list any additional partners with whom he/she has had a "romantic or sexual relationship" since 2001. Add Health assigns a label to each partner to indicate relationship type. If respondent married the partner, the relationship is designated as a marriage. If he/she cohabited with the partner but did not marry him/her, the relationship is labeled a cohabitation. If respondent had a pregnancy with the partner but did not cohabit or marry him/her, the relationship is labeled a pregnancy. All other partners are classified as currently dating or most recently dating based on whether they are current or not. (response categories: Marriage, Cohabitation, Pregnancy, Currently dating, Most recently dating)
- D. For each partner, respondents asked "Is {initials} male or female?" (response categories: Male, Female, Refused, Don't know)
- E. If answer to (C) is cohabitation, respondent asked "Are you currently cohabiting with {initials}?"
(response categories: No, Yes, Refused, Don't know)

If answer to (B) is yes, and answers to (A) and (D) are either (female and male) or (male and female), respectively, then currently cohabiting=1; if answer to (B) is yes, but answer to (A) is missing or answer to (D) is refused, don't know, or missing, then currently cohabiting= missing; otherwise currently cohabiting=0

Household Roster:

- A. Respondent's gender (response categories: Male, Female)
- B. Respondent is told, "I'd like to record the initials of all persons living in your household. Not counting yourself, please list the initials of all persons living in your household."
- C. For each household member respondent is asked, "Is {INITIALS} male or female?"
(response categories: Male, Female, Refused, Don't know)
- D. For each household member respondent is asked, "What is {INITIALS} relationship to you?"
(response categories: husband/wife, partner/boyfriend/girlfriend, son/daughter,

brother/sister, brother's male partner/sister's female partner, sister's husband/brother's wife, sister's male partner/brother's female partner, father/mother, male partner/mother's female partner, mother's husband/father's wife, mother's male partner/mother's female partner, father-in-law/mother-in-law, grandfather/grandmother, great-grandfather/great-grandmother, uncle/aunt, cousin, nephew/niece, other relative, non-relative, refused, don't know)

If answer to (D) is partner/boyfriend/girlfriend, and answers to (A) and (C) are either (female and male) or (male and female), respectively, then currently cohabiting=1; if answer to (D) is partner/boyfriend/girlfriend, but answer to (A) is missing or answer to (C) is refused, don't know, or missing, then currently cohabiting= missing; otherwise currently cohabiting = 0.

NSFG 2006-2010: National Survey of Family Growth

Female Questionnaire:

A. Year 1: "Now I'd like to ask about your marital status. Please look at Card 1. What is your current marital status?"

Starting in Year 2: "Now I'd like to ask about marital status and living together. Please look at Card 1. What is your current marital or cohabiting status?"

(response categories: Married, Not married but living together with a partner of the opposite sex, Widowed, Divorced, Separated because you and your spouse are not getting along, Never been married)

If answer to (A) is "Not married but living together with a partner of the opposite sex," then currently cohabiting = 1; otherwise = 0.

Male Questionnaire:

A. Asked in Year 1: "Now I'd like to ask about your marital status. Please look at Card 1. What is your current marital status?"

Asked Starting in Year 2: "Now I'd like to ask about marital status and living together. Please look at Card 1. What is your current marital or cohabiting status?"

(response categories: Married, Not married but living together with a partner of the opposite sex, Widowed, Divorced, Separated because you and your spouse are not getting along, Never been married, Refused, Don't know)

If answer to (A) is "Not married but living together with a partner of the opposite sex," then currently cohabiting = 1; otherwise currently cohabitation = 0.

NLSY-97: National Longitudinal Survey of Youth - 1997

Survey:

A. Since the date of our last interview, have you been, married to someone, or lived with a partner of the opposite sex in a marriage-like relationship where you established one household and lived together? (response categories: Yes, No)

B. Can you tell me the names (initials) of these different partners who aren't already on the [household roster]? Please begin with the first partner you lived with and continue to the (most recent/current) partner. (response categories: Enter all name or initials on empty line in the roster below)

C. Identify the current (spouse/partner). Highlight the line which contains R's current spouse or partner.

D. Have you lived with [this partner] continuously since our last interview? (response

categories: Yes, No)

E. Have you lived with [this partner] continuously since [(date)/the time you first started living together]? (response categories: Yes, No)

F. In what month and year did you start living with [this partner] for the first time? (respondent enters date)

G. In what month and year did you first stop living with [this partner]? Respondent enters date

H. Here is a list of people who usually live in the household at your current residence at this time. What is [this person]'s relationship to you? (response categories: Wife, Husband, Mother, Father, Sister (Full/Half/Step/Adoptive), Brother (Full/Half/Step/Adoptive), Lover/Romantic Partner, etc.)

I. Is [this person] male or female? (response categories: Male, Female)

J. Respondent's gender (response categories: Male, Female)

The NLSY-97 created an indicator of marital and cohabitation status on the date of interview for each survey round using responses to questions (A), (B), (C), (D), (E), (F), and (G). Possible responses include *Never Married and Cohabiting*, *Never Married and not Cohabiting*, *Married with Spouse Present*, *Married with Spouse Absent*, *Separated and Cohabiting*, *Separated and Not Cohabiting*, etc. If respondents are recorded as cohabiting with any other marital status (Never Married/Separated/Divorced/Widowed), they are considered to be currently cohabiting. Prior to round 8, the NLSY-97 only asked respondents about cohabitation with partners of the "opposite sex." To capture different-gender cohabitation in the 11th and 12th rounds (2007 and 2008 respectively), we compare the gender of any household member, within these years, recorded as a "Lover/Romantic Partner" (attained from questions (H) and (I)) to the respondent's gender (question J attained during screening process).

Household Roster:

A. Here is a list of people who usually live in the household at your current residence at this time. What is [this person]'s relationship to you? (response categories: Wife, Husband, Mother, Father, Sister (Full/Half/Step/Adoptive), Brother (Full/Half/Step/Adoptive), Lover/Romantic Partner, etc.)

B. Is [this person] male or female? (response categories: Male, Female)

C. Respondent's gender (response categories: Male, Female)

If the respondent reports that a household member's relationship to them is a "Lover/Romantic Partner," from question (A), and if this household member's gender, from question (B), is different than the respondent's gender (C), currently cohabitation = 1; otherwise currently cohabitation = 0.

CPS: Current Population Survey

The roster is established based on a series of questions about who counts this household as their usual residence. Respondents answer, "What are the names of all persons living or staying here?" They are then asked, "What is the name of the next person. Is this (name of person talking about)'s usual place of residence?"

A. How is this person related to Person 1? (response categories: husband or wife, biological son or daughter, adopted son or daughter, stepson or stepdaughter, brother or sister, father or mother, grandchild, parent-in-law, son-in-law or daughter-in-law, other relative, roomer or boarder, housemate or roommate, unmarried partner, foster child, other

nonrelative)

- B. Do you have a boyfriend, girlfriend or partner in this household? (response categories: Yes, No)

This question is asked of all unmarried adults in the household except persons identified as the unmarried partner of the household head. This question provides the line number of the cohabitators on the household roster.

- C. What is Person X's sex? (response categories: Male, Female)

If a household member is related to the household head through an unmarried partnership, identified through question (A), both the household head and this individual are considered to be cohabitators. Furthermore, if the household head reports having a boyfriend, girlfriend or partner in the household, identified through question (B), both the household head and their boyfriend, girlfriend or partner are coded as cohabitators. Finally, cohabiting relationships that do not involve the household head are identified using question (B), as this question is posed about all unmarried adults in the household except persons identified as the unmarried partner of the household head. The genders of both respondents involved in a cohabiting union are compared to ensure that only different-gender cohabitators are included in our analyses (question (C)).

COHABITATION EXPERIENCE

ADD HEALTH: National Longitudinal Study of Adolescent to Adult Health

- A. Respondent's gender (response categories: Male, Female)

- B. If respondent has never been married, he/she is asked "How many romantic or sexual partners have you ever lived with for one month or more? By 'lived with' we mean that neither of you kept a separate residence while you were living together." If respondent has been married, he/she is asked "Not counting the (partner/partners) you married, how many other romantic or sexual partners have you ever lived with for one month or more? By 'lived with' we mean that neither of you kept a separate residence while you were living together." Respondents are asked this question before questions C-F, providing them with a definition of cohabitation.

(response categories: 0-20, Refused, Don't know)

- C. Respondent lists all partners with whom they have married, cohabited, or had a "romantic relationship or sexual encounter that resulted in a pregnancy." Respondent is also asked to list any additional partners with whom he/she has had a "romantic or sexual relationship" since 2001. Add Health assigns a label to each partner to indicate relationship type. If respondent married the partner, the relationship is designated as a marriage. If he/she cohabited with the partner but did not marry him/her, the relationship is labeled a cohabitation. If respondent had a pregnancy with the partner but did not cohabit or marry him/her, the relationship is labeled a pregnancy. All other partners are classified as currently dating or most recently dating based on whether they are current or not. (response categories: Marriage, Cohabitation, Pregnancy, Currently dating, Most recently dating)
- D. For each partner, respondents asked "Is {initials} male or female?" (response categories: Male, Female, Refused, Don't know)
- E. If answer to (C) is marriage, respondent asked "Did you and {initials} ever live together for a month or more in the same residence as romantic or sexual partners when you were not married?" (response categories: No, Yes, Refused)
- F. If answer to (C) is cohabitation, respondent asked "How many times did you live with

{initials}? By 'times' we mean periods of living together separated by times when you were not living together." If answer to (C) is marriage and answer to (E) is yes, respondent asked "How many times did you live with {initials} when you were not married? By 'times' we mean periods of living together separated by times when you were not living together." (response categories: 1-70, Refused, Don't know)

If answer to (F) is 1-70 and answers to (A) and (D) are either (female and male) or (male and female), respectively, then cohabiting experience = 1; if answer to (F) is 1-70, but answer to (A) is missing or answer to (D) is refused, don't know, or missing, then cohabiting experience = missing; otherwise cohabiting experience = 0.

NSFG 2006-2010: National Survey of Family Growth

Female Questionnaire:

- A. "Some couples live together without being married. By living together, we mean having a sexual relationship while sharing the same usual address. Have you ever lived together with a man? Do not count "dating" or "sleeping over" as living together. Living together means having a sexual relationship while sharing the same usual address." (response categories: Yes, No)
- B. "Some couples live together without being married. By living together, we mean having a sexual relationship while sharing the same usual address. Not counting anyone we've already talked about, have you ever lived together with any other man? Do not count "dating" or "sleeping over" as living together. Living together means having a sexual relationship while sharing the same usual address." (response categories: Yes, No)
- C. "Have/Not counting anyone we've already talked about, have/Besides [NAMES OF CURRENT HUSBAND/PARTNER AND FORMER HUSBANDS] have you ever lived together with (a/any other) man?" (response categories: Yes, No, Refused, Don't know)
- D. Whether the man in the HH is R's husband or cohabiting partner (determined through household roster) (response categories: Inapplicable, Husband, Male cohabiting partner)
- E. Year 1: "Now I'd like to ask about your marital status. Please look at Card 1. What is your current marital status?"
Starting in Year 2: "Now I'd like to ask about marital status and living together. Please look at Card 1. What is your current marital or cohabiting status?"
(response categories: Married, Not married but living together with a partner of the opposite sex, Widowed, Divorced, Separated because you and your spouse are not getting along, Never been married)

If answer to (A) is "yes", or answer to (B) is "yes", or answer to (C) is "yes", or answer to (D) is "male cohabiting partner", or answer to (E) is "not married but living together with a partner of the opposite sex", then cohabiting experience = 1; otherwise cohabiting experience = 0.

Male Questionnaire:

- A. "Not including the woman you married, have you ever lived together with any other female sexual partner? By living together, I mean having a sexual relationship while sharing the same usual residence. Do not count 'dating' or 'sleeping over' as living together." (response categories: Yes, No)
- B. "Have you ever lived together with a female sexual partner? By living together, I mean having a sexual relationship while sharing the same usual residence." (response categories: Yes, No)

C. Asked in Year 1: “Now I'd like to ask about your marital status. Please look at Card 1. What is your current marital status?”

Asked Starting in Year 2: “Now I'd like to ask about marital status and living together. Please look at Card 1. What is your current marital or cohabiting status?”

(response categories: Married, Not married but living together with a partner of the opposite sex, Widowed, Divorced, Separated because you and your spouse are not getting along, Never been married, Refused, Don't know)

If answer to (A) is “yes”, or answer to (B) is “yes”, or answer to (C) is “not married but living together with a partner of the opposite sex”, then cohabiting experience = 1; otherwise cohabiting experience = 0.

NLSY-97: National Longitudinal Survey of Youth - 1997

- A. Since the date of our last interview, have you been, married to someone, or lived with a partner of the opposite sex in a marriage-like relationship where you established one household and lived together? (response categories: Yes, No)
- B. Can you tell me the names (initials) of these different partners who aren't already on the [*Household Roster*]? Please begin with the first partner you lived with and continue to the (most recent/current) partner. (response categories: Enter all name or initials on empty line in the roster below)
- C. Identify the current (spouse/partner). Highlight the line which contains R's current spouse or partner.
- D. Have you lived with [this partner] continuously since our last interview? (response categories: Yes, No)
- E. Have you lived with [this partner] continuously since [(date)/the time you first started living together]? (response categories: Yes, No)
- F. In what month and year did you start living with [this partner] for the first time? (response categories: Respondent enters date)
- G. In what month and year did you first stop living with [this partner]? (response categories: Respondent enters date)
- H. Here is a list of people who usually live in the household at your current residence at this time. What is [this person]'s relationship to you? (response categories: Wife, Husband, Mother, Father, Sister (Full/Half/Step/Adoptive), Brother (Full/Half/Step/Adoptive), Lover/Romantic Partner, etc.)
- I. Is [this person] male or female? (response categories: Male, Female)
- J. Respondent's gender (response categories: Male, Female)

The NLSY-97 created an indicator of monthly cohabitation status for each survey round using responses to questions (A), (B), (C), (D), (E), (F), and (G). Possible responses include *Cohabiting with Partner 1*, *Cohabiting with Partner 2* *Cohabiting with Partner N*, and *Cohabiting with Spouse 1*, *Cohabiting with Spouse 2* *Cohabiting with Spouse N*. If respondents are recorded as cohabiting with a partner during any given month of any interview round, they are considered as having cohabited in their lifetime. Prior to round 8, the NLSY-97 only asked respondents about cohabitation with partners of the “opposite sex.” To capture different-gender cohabitation during and after the 8th round, we compare the gender of any household member recorded as a “Lover/Romantic Partner” (attained from questions (H) and (I)) to the respondent's gender (item J attained during screening process).

APPENDIX B: CONFIDENCE INTERVALS OF CURRENT AND EVER COHABITATION ESTIMATES

Appendix Table B1: Confidence Interval Boundaries of Percentage Currently Cohabiting by Demographic Characteristics

CI Boundaries	Add Health				NLSY97				NSFG		CPS	
	Roster		Survey		Roster		Survey		Lower	Upper	Lower	Upper
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper				
Total	19.57	21.57	21.55	23.63	18.33	20.69	19.13	21.53	15.19	18.97	12.77	14.01
Education												
Less than HS	25.71	33.51	29.19	37.25	23.92	31.28	26.05	33.57	25.09	35.15	11.18	14.56
HS	20.94	26.30	23.86	29.44	19.47	24.17	19.88	24.62	11.33	18.73	12.66	14.96
Some College	18.29	21.29	20.47	23.59	17.83	22.13	18.63	23.01	16.06	23.98	13.52	15.92
College and Above	15.19	18.43	15.73	19.01	12.77	16.67	13.38	17.36	6.27	11.55	10.89	13.13
Race												
Non-Hispanic White	19.21	21.87	20.34	23.06	18.25	21.59	18.78	22.16	13.48	18.62	14.46	16.20
Non-Hispanic Black	20.30	24.86	26.66	31.62	14.66	18.94	15.71	20.11	8.73	16.47	8.55	11.95
Hispanic	15.28	20.52	16.65	22.05	17.97	23.15	19.93	25.29	20.19	29.29	9.42	11.78
Other	18.17	24.73	20.54	27.36	5.96	30.10	5.96	30.10	7.20	20.16	8.62	12.36
Gender												
Male	19.00	22.00	20.77	23.85	17.18	20.48	17.79	21.15	14.70	20.52	12.43	14.21
Female	19.29	21.99	21.46	24.26	18.54	21.90	19.51	22.93	14.08	19.04	12.59	14.33
Age												
26	21.82	25.96	24.64	28.94	18.61	22.57	19.16	23.16	17.15	24.05	12.62	14.82
27	19.53	23.09	21.05	24.69	15.95	19.77	17.20	21.12	12.29	18.63	12.47	14.61
28	15.57	18.47	17.19	20.19	17.89	22.43	18.41	23.01	11.57	17.85	11.84	13.96

Notes: Sample is limited to respondents aged 26-28 in 2007 and 2008. Percentages are weighted.

Sources: National Longitudinal Study of Adolescent to Adult Health (Add Health); National Longitudinal Survey of Youth (NLSY-97); National Survey of Family Growth (NSFG).

Appendix Table B2: Confidence Interval Boundaries of Percentage Ever Cohabit by Demographic Characteristic

CI Boundaries	Add Health Survey		NLSY97 Survey		NSFG	
	Lower	Upper	Lower	Upper	Lower	Upper
Total	68.45	70.73	59.30	62.20	60.59	65.45
Education						
Less than HS	83.72	89.54	73.73	80.63	79.11	87.31
HS	71.79	77.29	66.34	71.60	70.04	79.06
Some College	71.39	74.73	61.47	66.63	59.69	69.15
College and Above	53.77	58.07	43.38	48.86	38.45	47.61
Race						
Non-Hispanic White	69.71	72.69	60.24	64.30	60.79	67.51
Non-Hispanic Black	67.28	72.30	53.26	58.94	59.37	70.49
Hispanic	60.00	66.58	55.60	61.90	60.84	70.84
Other	60.48	68.14	39.12	70.36	29.83	48.23
Gender						
Male	66.53	69.99	52.65	56.87	57.23	64.69
Female	69.36	72.38	64.79	68.73	61.91	68.27
Age						
26	64.29	68.87	54.94	59.78	55.84	64.18
27	71.50	75.34	58.38	63.24	57.95	66.45
28	66.87	70.45	62.17	67.57	63.00	71.34

Notes: Sample is limited to respondents aged 26-28 in 2007 and 2008. Percentages are weighted.

Sources: National Longitudinal Study of Adolescent to Adult Health (Add Health); National Longitudinal Survey of Youth (NLSY-97); National Survey of Family Growth (NSFG).