HHS Public Access

Author manuscript

Soc Sci Res. Author manuscript; available in PMC 2018 February 01.

Published in final edited form as:

Soc Sci Res. 2017 February; 62: 291–304. doi:10.1016/j.ssresearch.2016.08.013.

Extradyadic sex and union dissolution among young adults in opposite-sex married and cohabiting unions

Michelle L. Friscoa,*, Marin R. Wengerb, and Derek A. Kreagera

^aPenn State University, Department of Sociology & Criminology, USA

^bFlorida State University, College of Criminology & Criminal Justice, USA

Abstract

This study investigates extradyadic sex (EDS) among contemporary opposite-sex married and cohabiting young adults and examines how EDS is associated with union dissolution. By analyzing data from 8301 opposite-sex spouses and cohabiters in the National Longitudinal Study of Adolescent to Adult Health, we estimate the prevalence of self-reported EDS, reports of partners' EDS, and reports of mutual EDS (i.e., both partners' engagement in EDS). Roughly 1 in 4 respondents reported that either they, their partner or both engaged in EDS. Young men were more likely than women to self-report EDS, while young women were more likely to report partners' EDS. Relative to no EDS, partners' EDS was associated with union dissolution, but self-reported EDS and mutual EDS were not. A partner's EDS was also associated with union dissolution relative to self-reported EDS. Associations between a partner's EDS and dissolution were consistent among spouses and cohabiters and among men and women.

Keywords

Cohabitation; Divorce; Extradyadic sex; Infidelity; Union dissolution

1. Introduction

Americans strongly value sexual fidelity in committed relationships. Infidelity topped the list of morally unacceptable activities according to estimates from a Gallup poll on Americans' values and beliefs. Only 6% of those surveyed indicated that it was morally acceptable for married men and women to have an affair, compared to 16% for suicide, 14% for polygamy, 31% for pornography, and 58% for divorce (Newport and Himelfarb, 2013). These strong opinions condemning sexual infidelity are in line with academic research indicating that 99% of spouses and 94% of cohabiters expect sexual exclusivity from partners (Treas and Giesen, 2000).

Norms prohibiting extradyadic sex (EDS) are unsurprising given contemporary views of romantic partnerships. In the past, marriage was often perceived as a utilitarian arrangement meant to pool economic resources and maximize the division of household labor. Under

^{*}Corresponding author. mlfll2@psu.edu (M. L. Frisco).

these conditions, the principal threats of infidelity would have been its economic disruption and increased financial insecurity. Over the course of the 20th and 21st century, though, the meaning and purpose of marriage shifted. In the early 20th century, marriage began to serve more as source of companionship rather than solely a means of pooling resources and dividing economic and household labor (Burgess and Locke, 1945). As cohabitation and non-marital childbearing became more acceptable, and men's and women's roles in marital and cohabiting unions became more flexible in the 1960's, a modern era of marriage emerged that continued into the 21 st century. Today, marriage remains a source of social status that is useful for enforcing mutual trust, but it is increasingly seen as a choice for individual fulfillment more so than familial self-sacrifice (Cherlin, 2004). As marriage and cohabitation move further away from solely an economic foundation and increasingly towards an arrangement about self-fulling, mutually affectionate and trusting relationships, EDS is a threat to their very purpose.

Despite strong exclusivity expectations, studies of opposite-sex marriages find EDS is not entirely uncommon. One review conducted roughly a decade ago indicated that between 20 and 25% of U.S. ever-married men and 11–15% of ever-married women reported that they engaged in sexual infidelity (Allen et al., 2005). These percentages are not much lower among currently married or cohabiting couples. Estimates across several studies suggest that roughly 1 out of every 10 currently married or cohabiting individuals admit that they have had sex with someone who is not their current partner during the course of their relationship. In a nationally representative study of Americans' sexual values and behaviors conducted in the early 1990's, 8% of currently-married respondents who never cohabited, 11% of currently-married respondents who cohabited, and 12% of cohabiters admitted to sex with someone who was not their regular partner within the last year (Treas and Giesen, 2000). Very similar estimates emerged from a recent study of National Longitudinal Survey of Youth (NLSY97) participants, with men currently in opposite-sex marriages again more likely to report other sexual partners (12%) than women currently in opposite-sex marriages (10%) (Munsch, 2015). Cross-sectional analysis of adult participants in the 1991–2008 General Social Surveys (GSS), also finds that 10% of currently married respondents in opposite-sex unions reported that they engaged in EDS, with estimates higher for men (14%) than women (7%) (Allen and Atkins, 2012).

Findings also suggest a strong correlation between EDS and divorce. Allen and Atkins (2012) found that much higher percentages of women (25%) and men (40%) who are currently divorced report that they engaged in extramarital sex while married. Reports of spouses' and one's own romantic involvement with someone else prior to divorce were also not uncommon among divorced participants in the National Survey of Families and Households in the 1980s (South and Lloyd, 1995). Moreover, research of opposite-sex married adults who participated in the Marital Instability Over the Life Course study, a nationally representative sample of married adults 55 years old and younger who were first surveyed in 1980, suggest that there is an association between marital problems stemming from EDS (a spouse's or one's own EDS) and divorce that is robust to model specification (Amato and Rogers, 1997; Edwards and Booth, 1994; Previti and Amato, 2004) and does not vary substantially by gender (DeMaris, 2013).

> Although substantial, prior research leaves several important questions unanswered. First, how frequently does EDS occur among more recent generations of American married and cohabiting men and women in opposite-sex relationships? Second, how does actually being the victim of a partner's EDS differ from being the participant in EDS when predicting union dissolution? Knowing that your partner had an outside sexual relationship may not have the same consequences for relationship dissolution as the knowledge that you engaged in EDS. Finally, do associations between different EDS experiences and union dissolution vary by union type (marriage vs. cohabitation) or gender? Research has not adequately addressed these questions, primarily due to data limitations.

In this study, we draw on theories of social exchange to derive distinct suppositions about the three questions posed in the previous paragraph. We analyze data from participants in the National Longitudinal Study of Adolescent to Adult Health (Add Health) to investigate EDS among a contemporary sample of young adults. Add Health data allow us to distinguish respondents' (1) self-reported EDS, (2) perceived partners' EDS, (3) EDS by both themselves and their partners, and (4) no known EDS. To our knowledge, these are the first nationally representative estimates of this range of encounters with EDS among a recent cohort of young American opposite-sex cohabiters and spouses. Additionally, the fact that our analysis includes both married and cohabiting young adults in opposite-sex relationships is novel and important in an era where cohabiting unions are increasingly common. Thus, we are able to detail respondent and partner EDS experiences in both types of romantic unions, along with discerning if the impacts of EDS vary by gender or union type.

2. Background

2.1. Social exchange in relationships

As their titles imply, social exchange and interdependence theories (Homans, 1958; Thibaut and Kelley, 1959) focus on interpersonal dynamics to understand the development and persistence of dyadic relationships. Similar to microeconomic and subjective expected utility models (Becker, 1974, 1977; Brines and Joyner, 1999), social exchange perspectives begin with the assumption that actors enter social relationships to maximize subjective rewards and minimize subjective costs of participation. Relationships then persist if mutually agreedupon repeated exchanges allow actors to continue drawing benefits from the relationship without inequitable costs.² In romantic dyads, mutually beneficial exchanges of resources, affection, and labor result in increased partner trust and decreased relationship uncertainty (Molm et al., 2007; Stanley et al., 2010). Such arrangements also increase personal satisfaction and emotional attachment to the relationship due to partners' greater investments in, and commitment to, common long-term goals (Rusbult, 1980).

¹Note that reports of a partner's EDS could reflect respondents' perceptions of EDS or actual behavior since it is respondent-reported.

This and other measurement issues regarding EDS are discussed in more detail below.

Of course, individuals' assessments of dyadic exchanges and equitable relationships could be affected by their time horizons (i.e., preferences for shortterm vs. long-term gains), which in turn could be related to EDS and relationship dissolution. To examine this issue, we included impulsivity as a covariate in supplementary analyses predicting relationship dissolution. Although predictive of male relationship dissolution, we found no evidence that impulsivity attenuated our observed patterns.

Social exchange theories are particularly effective for explaining the variability in and consequences of EDS. This is because, unlike other explanations of relationship dissolution, exchange theories emphasize noncooperation with negotiated or expected patterns of exchange as critical for understanding individuals' relationship decisions. Rather than focusing on individual differences or behavioral motivations, exchange theories focus on dyadic negotiations, the emergent properties of interpersonal relations, and the consequences of defection for future uncertainty and continued relationship investments (Blau, 1964; Cheshire et al., 2010). Thus, one can rely on these theories to explore the conditions under which EDS is more or less likely to occur within relationship dyads, as well as when such behavior will be more or less likely to result in relationship dissolution.

2.2. EDS in opposite-sex marital and cohabiting relationships

From a social exchange perspective, opposite-sex marriages and cohabiting relationships differ in their type of exchange, which we argue should predict differences in the prevalence of EDS by union type. Marriages are examples of binding negotiated exchanges whereby spouses make formal, legal, and often religious commitments to remain in monogamous and long-term relationships (with the exception being the very small proportion of couples who agree to "open" marriages³). The primary benefits of such exchanges are that they reduce future uncertainty so that partners may freely invest in long-term goals and divisions of labor with reduced risks of partner default or defection (Cheshire et al., 2010).

Conversely, opposite-sex cohabiting unions are neither formal nor legal commitments for exchange and partners generally do not take ceremonial oaths promising to be faithful. Instead, individuals often fall into these arrangements rather than make deliberate choices to cohabit (Manning and Smock, 2005), though there is heterogeneity in what cohabiting unions mean to opposite-sex couples, with some cohabiters viewing cohabitation as a path to marriage and others viewing their cohabiting union as a means of co-residential dating with no immediate marriage plans on their time horizon (Casper and Bianchi, 2002; Willoughby et al., 2011). Regardless, the absence of a binding agreement reduces relationship commitment, trust, and emotional investment when compared to marriage, while raising future uncertainty (Gerbasi, 2007).

Reciprocity in dyads is also less certain when exchanges are less formalized and not explicitly negotiated (Chesire, Gerbasi, and Cook, 2010). This helps explain why partners in opposite-sex cohabiting unions are less committed to their relationships (Stanley et al., 2004) and are vulnerable to union dissolution (Bumpass and Lu, 2000; Raley and Bumpass, 2003). It also explains why general and reciprocal exchanges are less evident among opposite-sex cohabiters. They are less likely than spouses to pool financial resources (Kenney, 2006; Oropesa et al., 2003) and to engage in joint activities requiring long-term commitments such as home buying (Leppel, 2007) and childbearing (Loomis and Landale, 1994; Manning et al., 2004).

³Estimates of open marriages from the 1970's and 80's range from a low of under 2% to a high of 6% of all marriages (Blumstein and Schwartz, 1983; Hunt, 1974; Spanier and Cole, 1975). We are not aware of more recent estimates, though Conley et al. (2013) suggest that 5% of dating relationships are consensually non-monogamous.

Distinguishing between binding and non-binding negotiated exchanges provides expectations for the prevalence of EDS in opposite-sex marital and cohabiting unions. As EDS violates the terms of the binding agreement, spouses should be less likely to risk losing their investments and incurring the affective, legal, and social costs that accompany such behavior. The deleterious consequences and opportunity costs of relationship dissolution should be weaker in opposite-sex cohabiting unions. This suggests a greater prevalence of reported EDS in such relationships, a finding already supported by prior research of older U.S. cohorts (Forste and Tanfer, 1996; Treas and Giesen, 2000).

2.3. EDS and relationship dissolution

Following the above logic, union type should also moderate the association between EDS and the probability of union dissolution. Opposite-sex cohabiters experiencing EDS should be more likely to end relationships than opposite-sex spouses experiencing the same behavior because marriages have greater interdependence and prior investments than cohabiting unions. Accordingly, spouses would have greater incentives than cohabiters to work through infidelity and maintain their relationship. However, we do note that such differences may be weaker today given the importance placed on self-fulfillment, trust and friendship in contemporary marital relationships.

Understanding how EDS is related to union dissolution also requires consideration of which partner was (or is perceived to have been) unfaithful. Taken from the perspective of a spouse or cohabiter, he or she may report engaging in EDS but have a partner who they think did not (i.e., respondent's EDS), report no engagement in EDS but believe a partner did (i.e., partner's EDS), or report engaging in EDS and believe a partner did the same (i.e., mutual EDS).

Exchange theory tenets suggest that these varied first-person experiences with EDS should have different consequences for an individual's decision to dissolve the relationship. Partner-only EDS should increase the odds of union dissolution compared to relationships with no known infidelity because a partner's unilateral EDS demonstrates his or her noncooperation with sexual exclusivity expectations, resulting in a loss of trust and increased future uncertainty that, in turn, should increase the risk of relationship dissolution. Indeed, the fact that the respondent abided by expectations for sexual fidelity while his or her partner did not (i.e., the lack of reciprocal exchange) should heighten the likelihood of union dissolution. As noted above, this may be particularly true for cohabiters given reduced barriers to relationship termination, lower average commitment to cohabiting relationships (Stanley et al., 2004), and the greater likelihood of union dissolution in cohabiting vs. marital relationships (Bumpass and Lu, 2000; Raley and Bumpass, 2003).

An individual's own EDS, however, may not influence union dissolution in the same way as a partner's known or perceived EDS. Respondents who engage in EDS may successfully conceal the behavior from their partners, or their partners may purposefully ignore clues of EDS, meaning that the unfaithful respondents are not forced to negotiate their partners' (likely negative) reactions. There are also strong incentives not to publicize or admit one's own EDS given social sentiments against this behavior (Newport and Himelfarb, 2013; Treas and Giesen, 2000). Thus, unfaithful persons who are able to conceal EDS can

simultaneously maintain their relationship investments, receive the sexual benefits of EDS, and avoid the social costs of sexual indiscretion. Although these benefits do not exist if the EDS become known or acted on by the partner, the possibility for at least some respondents to keep their EDS a secret motivates the expectation that a respondent's EDS will have a weaker association with union dissolution than a partner's EDS.⁴

Of course, whether secret or not, respondent EDS violates the trust built on repeated dyadic exchanges and mutual expectations for sexual exclusivity that should be shared across virtually all romantic relationships. Moreover, respondents who have sex outside of their relationships are less dependent on their partners for sexual satisfaction, weakening the dyadic interdependence that lies at the foundation of relationship stability. Thus, compared to relationships with no-known EDS, relationships with respondent-only EDS should have higher odds of union dissolution. Likewise, relationships where both partners have outside sexual relationships should have the highest likelihoods of relationship dissolution of all categories. Even though reciprocal on their face, relationships with mutual EDS would show the lowest levels of between-partner interdependence and mutually-beneficial exchange.

Unlike other utility-based theories, the social exchange argument presented above does not rely on the availability of perceived better alternatives from the perspective of one or both partners to predict EDS and relationship dissolution. Rather, it focuses on the type of exchange entailed in opposite-sex marriage and cohabitation and how EDS does or does not jeopardize dyadic exchanges, prior investments, and partner interdependence. We assert that this strategy is particularly useful for understanding EDS as actor and/or partner behavior and its impacts on individual-level post-EDS relationship decisions. Our approach also benefits from not having to rely on individuals' difficult-to-measure subjective perceptions of available alternatives and how these compare with their currently understood circumstances.

2.4. Gender and EDS

Studies consistently find that men are more likely to report engaging in EDS than women (e.g., Atkins et al., 2001; Petersen and Hyde, 2010; Treas and Giesen, 2000). Several explanations for this finding have been proposed including evolutionary psychology arguments that sexual infidelity is an adaptive strategy for men's genetic success (Buss, 1994, 1996; Guerrero et al., 2004) and sociological arguments that social scripts encourage male sexual risk-taking (Wiederman, 2005). Regardless of reason, past research raises expectations for gender differences in men's and women's reports of their own participation in EDS and their partner's participation in these relationships.

Social exchange perspectives typically do not posit strong gender differences in the exchange process or its associated mechanisms. However, Baumeister and Vohs (2004) use social exchange propositions to argue that sexual intercourse is not a gender-equitable exchange. They assert that men on average desire sex more than women, making sex a more

⁴Note that this argument does not require that all respondents who engage in EDS want to conceal that behavior and stay in their relationships. For example, some of these individuals may engage in EDS to signal to their partners that they desire the relationship to dissolve. Rather, the hypothesis is that, because a respondent's EDS *can* remain secret and not otherwise affect the relationship, a respondent's EDS is less likely to result in relationship dissolution compared to perceptions of a partner's EDS.

valued female than male resource. A primary implication of this sexual asymmetry is that within heterosexual couples, women are more likely than men to exchange sexual access for material or social resources. The authors therefore argue that women's EDS, but not men's, involves giving away an important resource and support this claim with studies suggesting that women are judged more (McClosky and Brill, 1983; Mongeau et al., 1994) and punished more for EDS (Tannahill, 1980) than men. Betzig's (1989) cross-cultural research is also cited. It suggests that when gender differences in adultery as grounds for divorce exist, they more often are for women's than men's adultery. Following this logic, men should be less tolerant than women of their partners' extramarital sex because they are losing something of great value, partners' sexual faithfulness. If Baumeister and Vohs' (2004) argument is accurate, men should thus end unions more readily than women when a partner engages in EDS.

3. Methods

3.1. Data and sample

This study utilizes data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), a longitudinal, school-based, nationally representative sample of adolescents that were in grades 7-12 during the 1994-1995 academic year (Wave I). At Wave 1, 20,745 7^{th} –12th graders participated in an in-depth, in-home questionnaire asking about a range of subjects including family and school experiences, relationships and sexual experiences, and indicators of health and risk-taking behavior. All respondents except Wave I high school seniors were followed up in 1996 (Wave II) (N = 14,378). Since 1996, all Wave I respondents (including seniors) were targeted for follow-up in 2001-2002 when respondents ranged in age from 18 to 26 (Wave III, N = 15,197) and 2007-2008 when respondents ranged in age from 24 to 32 (Wave IV, N = 15,701). More information on the sampling design can be found on the Add Health website (http://www.cpc.unc.edu/projects/addhealth) (Harris et al., 2009).

This study's sample is restricted to participants in the Wave III and IV interviews who reported at Wave IV that their current or most recent relationship was an opposite-sex marital or cohabiting union (N = 10,658 or 67.9% of the Wave IV sample). The sample is also constrained to respondents whose data included the Add Health survey weight for participating in Waves I, III, and IV (N = 8355) and to respondents whose data allowed us to calculate the timing of union dissolution (N = 8301).

We imputed missing data for all independent variables using multiple imputation techniques available in Stata 12.0. The procedure iteratively replaces missing values on all variables with predictions based on random draws from the posterior distributions of parameters observed in the sample, creating multiple complete data sets (Allison, 2001). We averaged empirical results across ten imputation samples and accounted for random variation across samples to calculate standard errors (Royston, 2005). Missing information due to non-response was largest for personal income (4% missing). In total, 10% of all cases had missing data on at least one analytic variable, including reports of EDS (1%).

3.2. Measures

We are interested in experiences of union dissolution among Wave IV respondents who indicate that their most recent relationship (which may be ongoing or dissolved) was an opposite-sex marital or cohabiting union. Union dissolution is coded "1" if a respondent's most recent union had ended, and "0" if it had survived until Wave IV. As shown in Table 1, 9% of women and 13% of men in our sample experienced union dissolution by Wave IV. We account for the fact that union dissolution is right censored by accounting for union duration in months calculated from the start date of the marriage or cohabiting union and either the reported date of union dissolution (for respondents who experienced dissolution) or censored at the Wave IV interview date (if the cohabiting or marital union had not ended).⁵ Note that for Wave IV respondents who reported that their most recent relationship was an opposite-sex marriage, union duration reflects length of marriage only. It does not account for length of premarital cohabitation if it occurred. This is because the Add Health study only asked respondents to report the date of marriage and whether premarital cohabitation occurred (yes/no), not the date when premarital cohabitation occurred.

Extradyadic sex (EDS) is based on two Wave IV questions asked to Add Health respondents about their most recent relationship. Respondents were asked, "As far as you know, during the time you and xx (have had/had) a sexual relationship, (has/did) xx ever (had/have) any other sexual partners?"(1 = yes) and "During the time you and xx (have had/had) a sexual relationship (have/did) you ever (had/have) any other sexual partners?"(1 = yes). We used these responses to create 4 dummy variables indicating no known EDS (reference), respondent-reported EDS, but no partner EDS (respondent's EDS), no respondent-reported EDS but reported partner EDS (partner's EDS), and reported respondent and partner EDS (mutual EDS).

As is the case in all studies of EDS, this measure and the data used to construct it have strengths and weaknesses. An obvious strength is that respondents report which partner (or both) engaged in EDS. We can thus show estimates of four distinct EDS experiences and compare how each relates to union dissolution relative to the others. This is an important study contribution.

Limitations are that questions used to assess EDS only reference other sexual partners and not specific behaviors; and the questions do not specifically ask if EDS occurred before or after cohabitation or marriage. Thus, we cannot fully assess the specific sexual behavior respondents are reporting (e.g., intercourse versus oral sex or opposite-sex versus same sex partners), the timing of EDS during respondents' relationships, or whether respondents may have open relationships. This drives our decision to use the term "extradyadic sex" rather than "infidelity" or "cheating". Note, though, that estimates of respondents' self-reported EDS in our study sample are quite similar to estimates from previous infidelity research

⁵We calculate union duration using reported union start dates and end dates/Wave IV interview dates rather than the Add Health union duration variable because for 310 respondents, the Add Health calculated union duration variable exceeded the duration calculated from respondents' reported dates of union entry and either interview (for those still in relationships) or exit (for those whose relationships ended). For respondents missing data on our calculated union duration measure due to missing relationship beginning or end dates (N = 120), we replaced missing values with the Add Health calculated union duration values. Supplementary analyses indicated that study results are not sensitive to using our calculated union duration variable versus the Add Health union duration variable.

indicating that 1 in 10 respondents admit engaging in EDS. As noted earlier in the manuscript, these estimates are similar in national studies of married and cohabiting individuals in the 1990s (Treas and Giesen, 2000), married young adults (Munsch, 2015) and currently married GSS respondents (Allen and Atkins, 2012). In our Add Health study sample, 10% of women and 13% of men who are either married or cohabiting report that they engaged in EDS; among the married sample, 9% of women and 12% of men report this behavior (see Table 2). These estimates of self-reported EDS by gender among spouses are nearly identical to estimates in previous research using the NLSY97 (Munsch, 2015).

Additional limitations of our measure are found in all studies of EDS. There is likely to be some reporting bias of respondents' EDS due to social desirability concerns. In general, reports of EDS tend to be downwardly biased (Whisman and Snyder, 2007). There is also likely bias in partners' (and mutual) EDS due to unknown partner EDS (i.e., downward bias) or reported partner EDS that in fact did not occur but is suspected (i.e., upward bias). Given that Table 2 indicates that reports of partners' EDS are much lower than reports of respondents' own EDS, we suspect bias in reports of partners' EDS is more likely attributable to partners successfully concealing their behavior.

Union type indicates whether Wave IV respondents indicate that their current or most recent relationship was a cohabiting (1) or marital (0) union. Wave IV questions about union dissolution and EDS are in reference to these reported unions. In supplementary analyses, we disaggregated married respondents into two separate groups: those who did and those who did not cohabit prior to marriage. There were no significant differences in results for these two groups, so we do not use this distinction in our final models.

Control variables are included in multivariate models to help account for the fact that any observed associations between experiences with EDS and union dissolution could be spurious. Our choice of confounders is guided by previous studies of infidelity and divorce (e.g., DeMaris, 2013; Previti and Amato, 2004), EDS (Munsch, 2012) and union dissolution (Amato, 2010; Lyngstad and Jalovaara, 2010). Most control variables were constructed using Wave III data to help ensure that possible confounders were not measured after union dissolution. In fact, for 65% of respondents, their marriages (57%) and cohabiting unions (79%) began after Wave III data collection efforts. We control for respondents' sociodemographic characteristics including their age at Wave III, race/ethnicity (White = reference, Black, Hispanic, or other race/ethnicity; Wave I), not completing a high school degree by Wave III (1 = yes), personal income measured in thousands of dollars at Wave III, unemployment at Wave III (1 = yes), and whether respondents had biological, step, or adopted children in the household at Wave III (1 = yes).

Additional control variables include behaviors and personal characteristics associated with EDS or union dissolution including whether respondents did not live with both biological or adoptive parents during adolescence (1 = respondent did not live in a household with both biological parents at either Waves I, II, or both waves), and alcohol use, drug use, and religiosity at Wave III. Alcohol use is based on questions asking respondents how many days in the previous twelve months the respondent drank alcohol; how many days the respondent drank 5 or more drinks in a row; and how many days the respondent was drunk or very high

on alcohol. Responses to each question ranged from 0 (none) to 6 (every day or almost every day). Responses to the three questions were summed and then averaged, with higher scores indicating greater levels of heavy drinking ($\alpha = 0.84$). Drug use indicates how often in the previous 30 days respondents used: marijuana; any kind of cocaine; crystal meth; and any other type of drug. We dichotomized each of these items and summed the responses to generate a drug use scale ranging from 0 (no drug use) to 4 (all four types). Religiosity indicates how often respondents attended religious services throughout the year (responses range from 0 (never) to 3 (once a week or more).

Finally, we control for respondent-reported indicators of sexual and relationship histories and their attitudes about relationship infidelity. These variables include their lifetime number of sexual partners at Wave III (truncated at 21), number of marriages prior to the marital or cohabiting union reported during Wave IV, number of cohabiting unions prior to the marital or cohabiting union reported at Wave IV (truncated at 3), and the age when respondents began dating their partner in the current or most recent marital or cohabiting union reported at Wave IV. We also account for a Wave III variable that asked respondents how important fidelity is for a successful marriage or serious committed relationship (note this was a general question asked to all respondents regardless of whether they were in a relationship at Wave III). Responses range from 1 (not important at all) to 10 (extremely important).

3.3. Analysis

Given documented differences in EDS by gender (Atkins et al., 2001; Petersen and Hyde, 2010; Treas and Giesen, 2000; Munsch, 2015) and Baumeister and Voh's (2004) arguments regarding gendered exchanges involved in EDS, we present study results by gender, including descriptive statistics in Table 1. We conducted supplementary analyses to estimate statistically significant gender differences in EDS and its consequences for union dissolution. These differences are documented in the text and tables.

We first describe the sample and then show the percentage of young adult women and men with different EDS experiences by gender and union type. This provides a general picture of EDS among U.S. young adult cohabiters and spouses in opposite-sex relationships.

We then use weighted Cox proportional hazard models to estimate how EDS is associated with union dissolution. Because women and men report the start date of their marital or cohabiting unions retrospectively at Wave IV, the timing of when their unions started is not tied to any Add Health Survey wave. Further, the women and men who remain married or cohabiting at Wave IV are right-censored in our hazard models since their relationships have not dissolved, but could do so in the future. Hazard models provide unbiased estimates of right-censored data (Cox, 1972). We structured our data so that each respondent represents one observation, with union duration (in months) as the unit of time and union dissolution (1 = yes) as the failure event.

We should note that tests of the proportional hazard assumption yielded mixed results.⁶ Adding interactions between time and covariates into the model suggested that the proportional hazard assumption was not violated, ⁷ but when we graph the log-log survival plot, which some argue is not a preferred test (Schemper, 1992), the lines representing

> survival by experiences of EDS were parallel across nearly all of the distribution. The exception was that the lines for reports of a respondent's EDS and mutual EDS crossed towards the very end of the distribution. Thus, we estimated supplementary models using discrete-time hazard models and logistic regression models predicting a dichotomous indicator of union dissolution and found substantively similar results. Allison (2010) suggests that if the proportional hazard assumption is violated (something for which he also suggests there is excessive concern), then coefficients estimated for a variable are akin to average effects over time. Given that we cannot measure timing of EDS and results are consistent across other models, this interpretation is appropriate.

> For both men and women, the first cox model presents the basic association between EDS and dissolution, controlling only for union type. In a second model, we include interactions between union type and EDS categories to estimate whether the hazard of union dissolution varies for spouses and cohabiters. A third model then adjusts results for confounders.

> Since EDS is a series of four dummy variables, tables presenting results show coefficients from models where no known EDS is the reference category. In supplementary models, we varied the reference category to test for other between-category differences. We report statistically significant between-category differences using superscripts next to the appropriate coefficients.

4. Results

4.1. Characteristics of women and men in opposite-sex cohabiting and marital unions

Table 1 shows characteristics of the women and men who report at Wave IV that they are currently or were recently in an opposite-sex marital or cohabiting union. Among women, 66% report that their most recent or current relationship was an opposite-sex marriage and 34% report an opposite-sex cohabiting union. Similar percentages of young men report opposite sex marriages (60%) and cohabiting unions (40%). The majority of these relationships are current, with only 9% of young women and 13% of young men reporting union dissolution. This is not surprising given that our sample is comprised of younger adults. Women report longer marital durations than men, likely reflecting the fact that women marry at younger ages than men. Women are also more likely to report that they have children living in their household. Only 16% of men report having children compared to 34% of women.

Data on respondents' relationship histories suggest that the large majority of young men and women in our sample have no previous marriages. Only 12% of young women and 9% of young men report previous marriages. Conversely, almost half of the women in our sample and more than half of men report cohabiting with someone other than their current opposite-

⁶The assumption here being that the difference between the hazard of dissolution for those who experience no EDS and those who

experience respondent-only EDS (or partner-only EDS or mutual EDS) is proportionally the same over time.

The proportionality assumption does not assume that the hazards for two groups are equal over time, but rather that the ratio of their hazards is the same at each time point. The interactions between time and the covariates for infidelity create a metric of assessing the hazard ratio over time.

sex partner. Men's and women's reports of total sexual partners are relatively similar, though men report almost one partner more than women.

One striking finding in Table 1 is the strong importance that both men and women place on sexual fidelity. Recall that respondents were asked how important fidelity is for a successful marriage or serious committed relationship on a scale of 1–10 at Wave III, roughly 6–7 years prior to their reports of EDS at Wave IV (depending on whether they were interviewed in 2001 or 2002). The average importance reported by women is 9.84 with only a 0.86 standard deviation and men's average rating of importance of fidelity is 9.68 with only a 1.15 standard deviation.

4.2. EDS among young adults

We now describe young adult's reports of EDS in opposite-sex marital and cohabiting unions in Table 2. The first two rows of results indicate that roughly three quarters of men and women report no known EDS in their current or most recent relationship. The first rows in Table 2 also show that men are more likely than women to report engaging in EDS and women are more likely than men to report a partner's EDS. Statistical tests confirmed that these differences were significant and consistent with gender differences in EDS found in previous studies (Atkins et al., 2001; Munsch, 2015; Petersen and Hyde, 2010; Treas and Giesen, 2000). Estimates for married and cohabiting men and women indicate that this gender difference is observed regardless of union type. However, men's and women's reports of mutual EDS are similar, with 8% of men and 8% of women reporting this EDS category.

Men's and women's reports of respondents' and partners' EDS also suggest that individuals are often successful at concealing outside sexual partners. Estimates indicate that 10% of women report their own EDS, but close to half as many men (5%) report a partner's EDS. Similarly, 13% of men report their own EDS, but only 8% of women report a partner's EDS. These patterns are consistent for spouses and cohabiters.

Results in Table 2 also show that EDS varies by union type. Among women and men, cohabiters are significantly less likely than spouses to report no known EDS, with roughly 30% reporting that they, their partner, or both have engaged in EDS. Among women, this finding is primarily driven by the fact that there is a statistically significant difference in the percentage of married versus cohabiting women's reports of mutual EDS. Among men, there are statistically significant differences in the percentage of married versus cohabiting men who self-report EDS and who report mutual EDS.

4.3. EDS and union dissolution

We now examine how different EDS experiences are associated with union dissolution. We first show results for young women (Table 3) and then show results for young men (Table 4). The coefficients presented in Tables 3 and 4 represent the change in the log hazard of union dissolution for a one-unit increase in the independent variable. To ease the interpretation of results, we exponentiate coefficients into hazard ratios in the text.

Estimates in Model 1 of Table 3 suggest that neither a respondent's EDS nor mutual EDS are associated with the hazard of union dissolution among young women net of union type (though mutual EDS was associated with union dissolution without union type in the model). However, the hazard of union dissolution among women who report a partner's EDS is over twice as large as that for women who report no known EDS ($e^{82} = 2.28$). In supplementary models, we also found that a partner's EDS is positively associated with the hazard of union dissolution relative to a respondent's EDS and mutual EDS.

Model 2 includes interaction terms between different EDS experiences and union type. None are statistically significant. This suggests that among women, even before adjusting models for confounders, a partner's EDS has the same estimated association with the hazard of union dissolution for cohabiting and married women. Neither respondent's own EDS nor mutual EDS is significantly associated with the hazard of union dissolution for either group.

We exclude the interaction terms from Model 3 because they were not statistically significant and did not improve model fit. In this model, we assess whether adjusting for confounders explains the association between a partner's EDS and women's hazard of union dissolution. The estimate for a partner's EDS is actually larger and remains statistically significant relative to no known EDS, a respondent's EDS, and mutual EDS.

Table 4 shows estimated associations between EDS and the hazard of union dissolution for young men. In Model 1, a partner's EDS is associated with a 66% ($e^{.51} = 1.66$) increase in the hazard of union dissolution relative to no known EDS. Supplementary models varying the reference category for EDS suggest that a partner's EDS is also positively associated with the hazard of union dissolution relative to mutual EDS. Similar to findings for women, results from Model 2 suggest that the estimated relationships between EDS and the hazard of union dissolution are similar for cohabiting and married men. Model 3 suggests that confounders do not explain the estimated correlation between a partner's EDS and union dissolution. Instead a partner's EDS is now associated with a two-fold increase in the hazard of union dissolution relative to no reported EDS ($e^{77} = 2.17$) and it significantly increases the estimated hazard of dissolution relative to respondent's own EDS and mutual EDS in supplementary analyses.

Before turning to a discussion of results, we should note that statistical tests comparing results in Tables 3 and 4 provide no support for significant gender differences in the association between any of the EDS categories and the hazard of union dissolution. Even in models predicting the hazard of union dissolution that only included EDS categories and no confounders, there were no statistically significant gender differences.

We also conducted supplementary analyses to test the robustness of findings in Tables 3 and 4. We constrained analyses to subsamples of men and women in first unions to ensure that study findings are not biased by selectivity resulting from potentially different patterns of repartnership among those with multiple marital and cohabiting unions. These analyses only included the 2168 married women, 738 cohabiting women (Total N for women = 2906), 1584 married men and 656 cohabiting men (Total N for men = 2240) with no prior marriages or cohabiting unions (some married individuals did cohabit with their current

spouse but no other partners). They allowed us to investigate whether study findings hold among those young people in their first unions (number of prior marriages and cohabiting relationships were excluded as covariates). Results from these models were substantively and statistically similar to models shown here. Only a partner's EDS was associated with the hazard of union dissolution and the estimated associations between a partner's EDS and the hazard of dissolution were statistically similar for cohabiting and married men and women with no evidence of gender differences in this finding (results available upon request).

5. Discussion and conclusion

This study drew on exchange theories to make suppositions about the prevalence of EDS and its association with union dissolution among a contemporary cohort of married or cohabiting young adults in opposite-sex relationships. A primary study contribution was that it disaggregated EDS into categories indicating whether respondents' reported their own EDS, a partner's EDS, mutual EDS, or no known EDS. To our knowledge, this is the first study to examine if these four distinct EDS experiences are differentially associated with union dissolution net of confounders and among a recent cohort of opposite-sex married and cohabiting young adults.

The gendered patterns of EDS that we observed in our young adult sample are consistent with those found in other studies. Respondents' reports of their own EDS were similar to previous studies (Allen and Atkins, 2012; Munsch, 2015; Treas and Giesen, 2000). EDS was also more common among young men versus women (Atkins et al., 2001; Petersen and Hyde, 2010; Treas and Giesen, 2000); women were significantly less likely than men to self-report their own EDS and significantly more likely than men to report a partner's EDS. Men's and women's reports of mutual EDS were virtually identical, demonstrating that differentiating between the range of experiences of EDS within romantic unions helps to better understand where patterns of EDS are gendered.

Descriptive findings were also consistent with prior studies showing that the prevalence of EDS varies by union type, with opposite-sex cohabiters reporting more EDS than opposite-sex married respondents (Forste and Tanfer, 1996; Treas and Giesen, 2000). We interpret this finding through a social exchange lens, arguing that EDS should be more prevalent in opposite-sex cohabiting unions because the deleterious consequences and opportunity costs of relationship dissolution are weaker in these relationships compared to opposite-sex marriages.

What our descriptive findings contribute to the literature is a detailed breakdown of who young men and women report as participants in EDS in their opposite-sex marital and cohabiting unions. In previous nationally representative studies, these estimates tend to be limited to the EDS of only one partner or either partner, married individuals, and/or older cohorts who are not representative of young adults today.

Turning to multivariate analyses, we show that, for the most part, social exchange theory is useful for understanding how varying EDS experiences are associated with union dissolution. Consistent with expectations, a partner's EDS was associated with a greater

hazard of union dissolution relative to reporting no known EDS and respondents reporting their own EDS. As expected, believing that a partner violated sexual exclusivity expectations was found to significantly increase relationship dissolution decisions. That a partner's EDS was more likely to result in relationship dissolution than a respondent's EDS is also consistent with the exchange idea that some respondents are capable of keeping their EDS secret, giving them sexual benefits without the costs of ending their relationships. Indeed, findings that women's reports of their own EDS are nearly twice as high as men's reports of a partner's EDS and that the proportion of men who report their own EDS is 40% larger than women's reports of a partner's EDS suggest that many partners may be able to successfully conceal EDS.

Surprisingly, respondents' reports of their own EDS were not associated with union dissolution compared to no known EDS. Similarly, mutual EDS was not associated with relationship exit compared to no known EDS. These findings appear inconsistent with social exchange theory, as both situations include one or both partners violating sexual exclusivity expectations and decreasing partner interdependence. How might we explain these unexpected results? One explanation may be that individuals engaging in EDS are able to justify their behavior to such an extent that, as long as it remains unknown to their partner, the behavior has little impact on the relationship and thus does not increase the likelihood of relationship dissolution. However, this explanation does not explain why mutual EDS also fails to increase the odds of relationship dissolution compared to no known EDS. Mutual EDS implies that respondents are aware of a partner's EDS, which should increase relationship dissolution regardless of a respondent's EDS. It may be that the symmetry of EDS keeps the partners on equal terms and better able to overcome the behavior's destabilizing effects, but this appears unlikely given the prioritization of trust in contemporary relationships and near-universal expectations for sexual exclusivity. In the end, further research is required to understand if the relationship dynamics or motives for mutual EDS differ from the other relationship categories.

Moving to other findings, the estimated relationship between a partner's EDS and the hazard of union dissolution did not vary by union type. This is the first study to our knowledge to show that, at least among young adults in opposite sex unions, cohabiters are not different than spouses with respect to how EDS is associated with union dissolution. This pattern is consistent with the idea that modern marriages are generally expected to provide self-fulfillment, affection and trust, not simply economic security. Thus, a partner's EDS directly attacks the foundation of both marital and cohabiting unions in ways that lead to relationship dissolution in both union types despite the fact that cohabiting unions are generally more tenuous than marriages.

We also may arrive at these conclusions because the cohabiters in our study largely expected to marry and may have similar expectations as spouses. Add Health Wave IV respondents who reported that they were currently cohabiting were asked what the chances were that they would marry their current partner (Wave IV respondents who reported that their most recent cohabiting union had ended were not asked retrospectively about chances of marrying their ex-partner). Among the Wave IV opposite-sex cohabiters in our study who had not experienced union dissolution, the majority (68%) reported that there was a pretty good

chance (23%) or that they would almost certainly (45%) marry their current partner. Of course, since we do not know whether the cohabiters in our study who had experienced union dissolution by Wave IV also had such high expectations of marrying their ex-partner, we cannot definitively arrive at this conclusion.

Arguments made by Baumeister and Vohs (2004) led us to explore whether there were gender differences in the association between EDS and union dissolution, though we were uncertain whether we would find them because social exchange theory does not generally posit a gendered exchange process. Results suggested that relationship inequity resulting from partner's EDS is associated with both men and women's relationship longevity in opposite-sex unions and that only the prevalence of reported EDS significantly varies by gender. It thus appears that the experience of a partner's EDS is equally likely to hasten the dissolution of men's and women's relationships.

Although this study makes several contributions, it has limitations. As is the case with all studies of EDS, there are limitations to how EDS is operationalized and the likely bias in reports of this behavior. The limitations of our EDS measure were described in detail in the methods section of the manuscript. An additional study limitation is that we focus on young adults who were involved in opposite-sex cohabiting or marital unions in their twenties and early thirties, so findings may not be applicable to older opposite-sex cohabiting and married individuals or individuals in relationships with longer durations. For example, we may find larger gender differences in the prevalence of EDS as respondents age, with relationship longevity, or with the addition of a child (or new children for those who had them) in the household. We may also find greater differences between some cohabiters and spouses if we were able to account for the different types of cohabiters (i.e., those with plans to marry versus those without plans). Findings are also not generalizeable to young adults in same-sex cohabiting and marital unions. Given recent legislative changes granting a legal right to marry to same-sex couples, this is an especially fruitful line for future investigation (note that our data were collected prior to this court decision). A third limitation of our study is that we do not account for neighborhood-level factors that may shape the availability of alternative partners for married and cohabiting individuals in our sample. Thus our study cannot address macrostructural-opportunity theories of union dissolution tested by others (South and Lloyd, 1995; South et al., 2001).

Finally, three important data limitations inhibit our ability to account for relationship characteristics that may explain associations between a partner's EDS and union dissolution. First, at Wave IV, Add Health sample members *currently* in relationships indicated how much they loved their partner, how happy they are in their relationship with their partner, and how committed they are to their relationship with their partner. Respondents who experienced union dissolution did not answer these questions. Second, at Wave IV, all respondents in ongoing and dissolved relationships were asked how much they enjoy doing ordinary things with their partner, whether they were satisfied with how problems, disagreements and finances were handled, if their partner listens to them and expresses love and affection, whether they are satisfied with their sex life, and if they trust their partner to be faithful. Unfortunately, for Wave IV respondents who had experienced union dissolution, these questions are asked after union dissolution and with respect to ex-partners. These

retrospective accounts may be biased due to the break-up and by virtue of when they were asked (after individuals experienced union dissolution), making them unreliable predictors of dissolution or mediators of the association between EDS and union dissolution. We did estimate supplemental models with these variables treated as confounders. A partner's EDS remained significantly associated with union dissolution for women, but was explained for men by the variable indicating that they trusted their partner to be faithful. This finding further suggested the salience of a partner's EDS for the longevity of men's marital and cohabiting unions. Future research would benefit by prospectively exploring these and other relationship characteristics as mediators of the association between a partner's EDS and union dissolution. Finally, Wave III data are also not a viable alternative for assessing relationship characteristics in our study because of the large proportion of opposite-sex marriages and cohabiting unions reported at Wave IV that began after Wave III. Our supplementary analyses suggest that at least 57% of marriage and 79% of cohabiting unions reported at Wave IV began after Wave III data collection efforts.

Despite limitations, this study provides a detailed description of the prevalence of EDS among married and cohabiting young adults and its association with the risk of union dissolution. To our knowledge, it provides the first nationally representative estimates of EDS by different partners among contemporary young adults who are married and cohabiting. Further, though we cannot pinpoint the timing of when partners engaged in EDS, we can show that it is associated with an increased risk of later union dissolution, while respondents' EDS has no significant estimated association with the hazard of union dissolution. To our knowledge, this is the first study to show this contrast.

We also show the utility of exchange tenets for understanding EDS and its association with union dissolution. Durkheim (1951) was among the first to argue that behavioral norms provide group members structure and stability which, in turn, increase well-being. More so today than in the past, individuals enter marriages and cohabitations for self-fulfillment, mutual friendship, trust, and the provision of emotional support. A partner's EDS attacks the very foundation of such relationships by reducing trust and increasing future uncertainty, undergirding strong norms of sexual exclusivity and increasing relationship dissolution when such behavior becomes known. But holding oneself to the same standards as a partner appears in doubt. The capacity to conceal and justify EDS suggests that at least some individuals will engage in the behavior, increase relationship inequity, and not increase the likelihood of relationship dissolution.

Acknowledgments

This research uses data from Add Health, a program project directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill, and funded by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Information on how to obtain the Add Health data files is available on the Add Health website (http://www.cpc.unc.edu/addhealth). No direct support was received from grant P01-HD31921 for this analysis. We also want to acknowledge assistance provided by the Population Research Institute at Penn State University, which is supported by an infrastructure grant by the Eunice Kennedy Shriver National Institute of Child Health and Human Development (R24-HD041025). Finally, we thank Richard Felson and the University of Texas Family Demography Seminar participants for their helpful comments on this manuscript.

References

Allen, Elizabeth S., Atkins, David C. The association of divorce and extramarital sex in a representative U.S. Sample. J Fam Issues. 2012; 33(11):1477–1493. http://dx.doi.org/10.1177/0192513X12439692.

- Allen, Elizabeth S., Atkins, David C., Baucom, Donald H., Snyder, Douglas K., Coop, Gordon Kristina, Glass, Shirley R. Intrapersonal, interpersonal, and contextual factors in engaging in and responding to extramarital involvement. Clin Psychol Sci Pract. 2005; 12(2):101–130. http://dx.doi.org/10.1093/clipsy.bpi014.
- Allison, Paul D. Missing Data. Sage Publications; Thousand Oaks, CA: 2001.
- Allison, Paul D. Survival Analysis Using SAS: a Practical Guide. Sas Institute; 2010.
- Amato, Paul R. Research on divorce: continuing trends and new developments. J Marriage Fam. 2010; 72(3):650–666. http://dx.doi.org/10.1111/j.1741-3737.2010.00723.x.
- Amato, Paul R., Rogers, Stacy J. A longitudinal study of marital problems and subsequent divorce. J Marriage Fam. 1997; 59(3):612–624. http://dx.doi.org/10.2307/353949.
- Atkins, David C., Baucom, Donald H., Jacobson, Neil S. Understanding infidelity: correlates in a national random sample. J Fam Psychol. 2001; 15(4):735–749. http://dx.doi.org/10.1037/0893-3200.15.4.735. [PubMed: 11770478]
- Baumeister, Roy E., Vohs, Kathleen D. Sexual economics: sex as female resource for social exchange in heterosexual interactions. Personal Soc Psychol Rev. 2004; 8(4):339–363. http://dx.doi.org/10.1207/s15327957pspr0804_2.
- Becker, Gary S. A theory of marriage. In: Schultz, Theodore W., editor. Economics of the Family: Marriage, Children, and Human Capital. University of Chicago Press; Chicago, IL: 1974. p. 299-351.
- Becker, Gary S., Landes, Elisabeth M., Michael, Robert T. An economic analysis of marital instability. J Political Econ. 1977; 85(6):1141–1187. http://dx.doi.org/10.1086/260631.
- Betzig, Laura. Causes of conjugal dissolution: a cross-cultural study; Curr Anthropol. 1989. p. 654-676.http://dx.doi.org/10.1086/203798
- Blau, Peter M. Exchange and Power in Social Life. Transaction Publishers; New Brunswick, NJ: 1964.
- Blumstein, Philip, Schwartz, Pepper. American Couples: Money, Work, Sex. William Morrow and Company; New York: 1983.
- Brines, Julie, Joyner, Kara. The ties that bind: principles of cohesion in cohabitation and marriage. Am Sociol Rev. 1999; 64(3):333–355. http://dx.doi.org/10.2307/2657490.
- Bumpass, Larry, Lu, Hsien-Hen. Trends in cohabitation and implications for children's family contexts in the United States. Popul Stud. 2000; 54(1):29–41. http://dx.doi.org/10.1080/713779060.
- Burgess, Ernest Watson, Locke, Harvey James. The Family: from Institution to Companionship. American Book; New York: 1945.
- Buss, David M. The Evolution of Desire: Strategies of Human Mating. Basic Books; New York, NY: 1994.
- Buss, David M. Paternity uncertainty and the complex repertoire of human mating strategies. Am Psychol. 1996; 51(2):161–162. http://dx.doi.org/10.1037/0003-066X.51.2.161.
- Casper, Lynne M., Bianchi, Suzanne M. Continuity and Change in the American Family. Sage Publications; Thousand Oaks, CA: 2002.
- Cherlin, Andrew J. The deinstitutionalization of American marriage. J Marriage Fam. 2004; 66(4): 848–861. http://dx.doi.org/10.1111/j.0022-2445.2004.00058.x.
- Cheshire, Coye, Gerbasi, Alexandra, Cook, Karen S. Trust and transitions in modes of exchange. Soc Psychol Q. 2010; 73(2):176–195. http://dx.doi.org/10.1177/0190272509359615.
- Conley, Terri D., Moors, Amy C., Matsick, Jes L., Ziegler, Ali. The fewer the merrier?: Assessing stigma surrounding consensually non-monogamous romantic relationships. Analyses Soc Issues Public Policy. 2013; 13(1):1–30. http://dx.doi.org/10.1111/j.1530-2415.2012.01286.x.
- Cox DR. Regression models and life-tables. J R Stat Soc Ser B Methodol. 1972; 34(2):187–220. http://dx.doi.org/10.2307/2985181.

DeMaris, Alfred. Burning the candle at both ends: extramarital sex as a precursor of marital disruption. J Fam Issues. 2013; 34(11):1474–1499. http://dx.doi.org/10.1177/0192513x12470833. [PubMed: 24634559]

- Durkheim, Emile. Suicide. The Free Press; New York: 1951.
- Edwards, John N., Booth, Alan. Sexuality, marriage, and well-being: the middle years. In: Rossi, Alice S., editor. Sexuality across the Life Course. University of Chicago Press; Chicago, IL: 1994. p. 233-259.
- Forste, Renata, Tanfer, Koray. Sexual exclusivity among dating, cohabiting, and married women. J Marriage Fam. 1996; 58(1):33–47. http://dx.doi.org/10.2307/353375.
- Gerbasi, Alexandra. Attribution and Commitment in Different Types of Exchange. Stanford University; 2007.
- Guerrero, Laura K., Spitzberg, Brian H., Yoshimura, Stephen M. Sexual and emotional jealousy. In: Harvey, John H.Wenzel, Amy, Sprecher, Susan, editors. The Handbook of Sexuality in Close Relationships. Lawrence Erlbaum Associates, Inc; Mahwah, NJ: 2004. p. 311-41.
- Harris, Kathleen M., Halpern, Carolyn T., Whitsel, Eric A., Hussey, Jon M., Tabor, Joyce W., Entzel, Pamela P., Richard, Udry J. The National Longitudinal Study of Adolescent Health: Research Design. 2009. [WWW Document], http://www.cpc.unc.edu/projects/addhealth/design
- Homans, George C. Social behavior as exchange. Am J Sociol. 1958; 63(6):597–606. http://dx.doi.org/10.1086/222355.
- Hunt, Morton. Sexual Behavior in the 1970s. Playboy Press; Oxford, England: 1974.
- Kenney, Catherine T. The power of the purse: allocative systems and inequality in couple households. Gend Soc. 2006; 20(3):354–381. http://dx.doi.org/10.1177/0891243206286742.
- Leppel, Karen. Married and unmarried, opposite- and same-sex couples: a decomposition of homeownership differences. J Hous Res. 2007; 16(1):61–81.
- Loomis, Laura Spencer, Landale, Nancy S. Nonmarital cohabitation and childbearing among Black and white American women. J Marriage Fam. 1994; 56(4):949–962. http://dx.doi.org/10.2307/353605.
- Lyngstad, Torkild, Jalovaara, Marika. A review of the antecedents of union dissolution. Demogr Res. 2010; 23:257–292. http://dx.doi.org/10.4054/DemRes.2010.23.10.
- Manning, Wendy D., Smock, Pamela J. Measuring and modeling cohabitation: new perspectives from qualitative data. J Marriage Fam. 2005; 67(4):989–1002. http://dx.doi.org/10.1111/j. 1741-3737.2005.00189.x.
- Manning, Wendy D., Smock, Pamela J., Majumdar, Debarun. The relative stability of cohabiting and marital unions for children. Popul Res Policy Rev. 2004; 23(2):135–159. http://dx.doi.org/10.1023/B:POPU.0000019916.29156.a7.
- McClosky, Herbert, Brill, Alida. The Dimensions of Tolerance: What Americans Believe about Civil Liberties. Russell Sage Foundation; 1983.
- Molm, Linda D., Schaefer, David R., Collett, Jessica L. The value of reciprocity. Soc Psychol Q. 2007; 70(2):199–217. http://dx.doi.org/10.1177/019027250707000208.
- Mongeau, Paul A., Hale, Jerold L., Alles, Marmy. An experimental investigation of accounts and attributions following sexual infidelity. Commun Monogr. 1994; 61(4):326–344. http://dx.doi.org/10.1080/03637759409376341.
- Munsch, Christin L. The science of two-timing: the state of infidelity research. Sociol Compass. 2012; 6(1):46–59. http://dx.doi.org/10.1111/j.1751-9020.2011.00434.x.
- Munsch, Christin L. Her support, his support: money, masculinity, and marital infidelity. Am Sociol Rev. 2015; 80(3):469–495. http://dx.doi.org/10.1177/0003122415579989.
- Newport, Frank, Himelfarb, Igor. In U.S., record-high say gay, lesbian relations morally OK: American's tolerance of a number of moral issues up since 2001. Gallup Polit. May 20. 2013 Retrieved June 30, 2016 http://www.gallup.com/poll/162689/record-high-say-gay-lesbian-relations-morally.aspx
- Oropesa RS, Landale Nancy S, Kenkre Tanya. Income allocation in marital and cohabiting unions: the case of mainland Puerto Ricans. J Marriage Fam. 2003; 65(4):910–926. http://dx.doi.org/10.1111/j.1741-3737.2003.00910.x.

Petersen, Jennifer L., Hyde, Janet Shibley. A meta-analytic review of research on gender differences in sexuality, 1993–2007. Psychol Bull. 2010; 136(1):21–38. http://dx.doi.org/10.1037/a0017504. [PubMed: 20063924]

- Previti, Denise, Amato, Paul R. Is infidelity a cause or a consequence of poor marital quality? J Soc Personal Relat. 2004; 21(2):217–230. http://dx.doi.org/10.1177/0265407504041384.
- Raley, Kelly, Bumpass, Larry. The topography of the divorce plateau: levels and trends in union stability in the United States after 1980. Demogr Res. 2003; 8:245–260. http://dx.doi.org/10.4054/DemRes.2003.8.8.
- Royston, Patrick. Multiple imputation of missing values: update of ICE. Stata J. 2005; 5(4):527-536.
- Rusbult, Caryl E. Commitment and satisfaction in romantic associations: a test of the investment model. J Exp Soc Psychol. 1980; 16(2):172–186. http://dx.doi.org/10.1016/0022-1031(80)90007-4.
- Schemper, Michael. Cox analysis of survival data with non-proportional hazard functions. J R Stat Soc Ser D (The Statistician). 1992; 41(4):455–465. http://dx.doi.org/10.2307/2349009.
- South, Scott J., Lloyd, Kim M. Spousal alternatives and marital dissolution; American Sociological Review. 1995. p. 21-35.http://dx.doi.org/10.2307/2096343
- South, Scott J., Trent, Katherine, Shen, Yang. Changing partners: toward a macrostructural-opportunity theory of marital dissolution. Journal of Marriage and Family. 2001; 63(3):743–754. http://dx.doi.org/10.1111/j.1741-3737.2001.00743.x.
- Spanier, Graham B., Cole, Charles L. Mate swapping: perceptions, value orientations, and participation in a midwestern community. Archives of Sexual Behavior. 1975; 4(2):143–159. http://dx.doi.org/10.1007/bf01541079. [PubMed: 1119933]
- Stanley, Scott M., Rhoades, Galena K., Whitton, Sarah W. Commitment: functions, formation, and the securing of romantic attachment. Journal of Family Theory & Review. 2010; 2(4):243–257. http://dx.doi.org/10.1111/j.1756-2589.2010.00060.x. [PubMed: 21339829]
- Stanley, Scott M., Whitton, Sarah W., Markman, Howard J. Maybe I do. Interpersonal commitment and premarital or nonmarital cohabitation. Journal of Family Issues. 2004; 25(4):496–519. http://dx.doi.org/10.1177/0192513X03257797.
- Tannahill, Reay. Sex in History. Stein and Day; New York: 1980.
- Thibaut, John W., Kelley, Harold H. The Social Psychology of Groups. Wiley; New York: 1959.
- Treas, Judith, Giesen, Deirdre. Sexual infidelity among married and cohabiting Americans. Journal of Marriage and Family. 2000; 62(1):48–60. http://dx.doi.org/10.1111/j.1741-3737.2000.00048.x.
- Whisman, Mark A., Snyder, Douglas K. Sexual infidelity in a national survey of American women: differences in prevalence and correlates as a function of method of assessment. Journal of Family Psychology. 2007; 21(2):147–154. http://dx.doi.org/10.1037/0893-3200.212.147. [PubMed: 17605537]
- Wiederman, Michael W. The gendered nature of sexual scripts. The Family Journal. 2005; 13(4):496–502. http://dx.doi.org/10.1177/1066480705278729.
- Willoughby, Brian J., Carroll, Jason S., Busby, Dean M. The different effects of 'living together': determining and comparing types of cohabiting couples. Journal of Social and Personal Relationships. 2011; 29(3):397–419. http://dx.doi.org/10.1177/0265407511431184.

Frisco et al. Page 21

 $\label{eq:Table 1} \textbf{Table 1}$ Descriptive characteristics of the sample by gender (N = 8301).

	Women (N = 4692)		Men (N = 3609)	
	Mean/%	SD	Mean/%	SD
Wave IV Focal Union Type (Current or Most Recent if Dissolved)				
Married	66%		60%	
Cohabiting	34%		40%	
Union Dissolution by Wave IV	9%		13%	
Union Duration (in months) ^a	52.07	38.04	44.50	35.41
Children in the Household $(1 = yes)$	34%		16%	
# of Marriages Prior to Wave IV Focal Union	0.12	0.33	0.09	0.29
# of Cohabiting Unions Prior to Wave IV Focal Union	0.46	0.74	0.54	0.82
Age when Wave IV Focal Union Began	23.83	3.22	24.60	3.05
# of Sexual Partners during Adolescence/Young Adulthood (by Wave III)	4.92	4.89	5.84	6.04
Wave III Report that Fidelity is Important for Successful Relationships	9.84	0.86	9.68	1.15
Respondent Characteristics				
Wave III Age	21.80	1.74	22.05	1.73
Race/Ethnicity				
White	70%		68%	
Black	13%		14%	
Hispanic	11%		12%	
Other	6%		6%	
No High School Degree at Wave III	15%		21%	
Personal Income at Wave III	11.57	11.86	16.97	15.90
Unemployed at Wave III	18%		13%	
Did Not Live with Both Parents during Adolescence (Wave I, II or Both)	46%		45%	
Alcohol Use at Wave III	1.28	1.20	1.87	1.56
Drug Use at Wave III	0.24	0.55	0.39	0.69
Religiosity at Wave III	1.32	1.05	1.12	1.03

Source: National Longitudinal Study of Adolescent Health.

Notes: All estimates are weighted.

^aFor respondents who did not experience union dissolution, union duration represents the time from their reported union start date (which is the date of marriage for respondents who were married and date cohabitation began for respondents who cohabited) to their Wave IV interview date. If respondents reported union dissolution, union duration is the time from their reported union start date to their reported union end date.

Frisco et al.

Table 2

The prevalence of extradyadic sex (EDS) among young adults in opposite-sex marital and cohabiting unions (N = 8301).

	Z	No known EDS	No known EDS Respondent's EDS Partner's EDS Mutual EDS	Partner's EDS	Mutual EDS
All Women	4692	75%	10%m	m%8	%8
All Men	3609	74%	13%W	5% W	%8
Women					
Married	3094	78% a	m%6	7%m	e%9
Cohabiting	1598	q%69	10%m	10%m	11%b
Men					
Married	2223	77% a	12% <i>wa</i>	5% W	e %9
Cohabiting	1386	q%69	15% wb	м %9	10% b

Source: National Longitudinal Study of Adolescent Health.

Notes: All values are population weighted.

 $^{I\!I}$ Significantly different from percentage of men with same EDS experience in same union type.

 $^{\prime\prime}$ Significantly different from percentage of women with same EDS experience in same union type.

 3 Significantly different from percentage of cohabiters of the same gender with the same EDS experience.

 b Significantly different from percentage of married people of the same gender with the same EDS experience.

Page 22

Table 3 The association between extradyadic sex (EDS) and the hazard of union dissolution (log-odds) for young women in opposite-sex cohabiting and marital unions (N = 4692).

	Model 1	Model 2	Model 3
	<u>b</u>	<u>b</u>	<u>b</u>
	se	se	se
Extradyadic Sex (EDS), ref = No known EDS			
Respondent's EDS	0.06 ^p 0.22	0.09 0.62	0.21^{p} 0.20
Partner's EDS	0.82 ***rm 0.17	1.09** 0.37	1.02 ***rm 0.17
Mutual EDS	0.08 ^p 0.18	0.01 0.51	0.30 ^p 0.19
Wave IV Focal Union Type (Current or most recent if dissolved), ref = Married			
Cohabiting	2.65 *** 0.15	2.70 *** 0.20	2.53 *** 0.17
EDS × Wave IV Focal Union Type			
Respondent's EDS × Cohabiting		-0.04 0.67	
Partner's ED × Cohabiting		-0.32 0.40	
Mutual EDS × Cohabiting		0.07 0.52	
Respondent Characteristics			
Wave III Age			-0.36*** 0.06
Children in Household, 1 = yes			-0.24 0.18
Race/Ethnicity, ref = White			
Black			0.11 0.19
Hispanic			-0.52 0.27
Other			-0.07 0.26
No High School Degree at Wave III			-0.13 0.16
Personal Income at Wave III			-0.01 0.01
Unemployed at Wave III			-0.01 0.16
Did Not Live with Both Parents during Adolescence (Wave I, II or Both)			-0.08 0.13
Alcohol Use at Wave III			-0.13* 0.06
Drug Use at Wave III			0.03 0.09
Religiosity at Wave III			0.11 0.07

Model 1 Model 2 Model 3 # of Sexual Partners during Adolescence/Young Adulhtood (by Wave III) 0.03* 0.01 -0.05 0.05 Wave III Report that Fidelty is Important for Successful Relationships # of Marriages Prior to Wave IV Focal Union -0.010.17 # of Cohabiting Unions Prior to Wave IV Focal Union 0.11 0.08 0.41 *** Age when Wave IV Focal Union Began

Page 24

0.05

Source; National Longitudinal Study of Adolescent Health.

Notes:

*** p<,001;

Frisco et al.

** p < 0.01;

* p < 0.05.

 T Significantly different from coefficient for respondent's EDS.

PSignificantly different from coefficient for partner's EDS.

 $^{\it m}{\rm Significantly}$ different from coefficient for mutual EDS.

Table 4 The association between extradyadic sex (EDS) and the hazard of union dissolution (log-odds) for young men in opposite-sex cohabiting and marital unions (N = 3609).

	Model 1	Model 2	Model 3
	b	b	b
	se	se	se
Extradyadic Sex (EDS), ref = No known EDS			
Respondent's EDS	0.04 0.17	-0.51 0.59	0.05 <i>P</i> 0.17
Partner's EDS	0.51 *m 0.24	0.76 0.46	0.77 **rm 0.24
Mutual EDS	-0.39P 0.24	-0.93 1.18	-0.25^{p} 0.28
Wave IV Focal Union Type (Current or most recent if dissolved), ref = Married			
Cohabiting	2.65 *** 0.18	2.59*** 0.21	2.49 *** 0.20
$EDS \times Wave IV Focal Union Type$			
Respondent's EDS × Cohabiting		0.61 0.60	
Partner's EDS × Cohabiting		-0.29 0.52	
Mutual EDS × Cohabiting		0.58 1.21	
Wave III Age			-0.26*** 0.06
Children in Household, 1 = yes			-0.53* 0.25
Race/Ethnicity, ref = White			
Black			0.05 0.17
Hispanic			0.18 0.22
Other			0.24 0.25
No High School Degree at Wave III			0.14 0.15
Personal Income at Wave III			0.00 0.01
Unemployed at Wave III			0.24 0.17
Did Not Live with Both Parents during Adolescence (Wave I, II or Both)			-0.05 0.12
Alcohol Use at Wave III			-0.12* 0.05
Drug Use at Wave III			0.05 0.09
Religiosity at Wave III			-0.05 0.08

	Model 1	Model 2	Model 3
	<u>b</u>	<u>b</u>	<u>b</u>
	se	se	se
# of Sexual Partners during Adolescence/Young Adulthood (by Wave III)			0.00 0.01
Wave III Report that Fidelity is Important for Successful Relationships			0.01 0.05
# of Marriages Prior to Wave IV Focal Union			-0.20 0.25
# of Cohabiting Unions Prior to Wave IV Focal Union			0.00 0.07
Age when Wave IV Focal Union Began			0.24 *** 0.05

Page 26

Source: National Longitudinal Study of Adolescent Health.

Notes:

*** p<,001;

Frisco et al.

** p < 0.01;

*p < 0.05.

^rSignificantly different from coefficient for respondent's EDS.

 $p_{\mbox{Significantly different from coefficient for partner's EDS.}$

 $^{\it m}\!{\rm Significantly}$ different from coefficient for mutual EDS.