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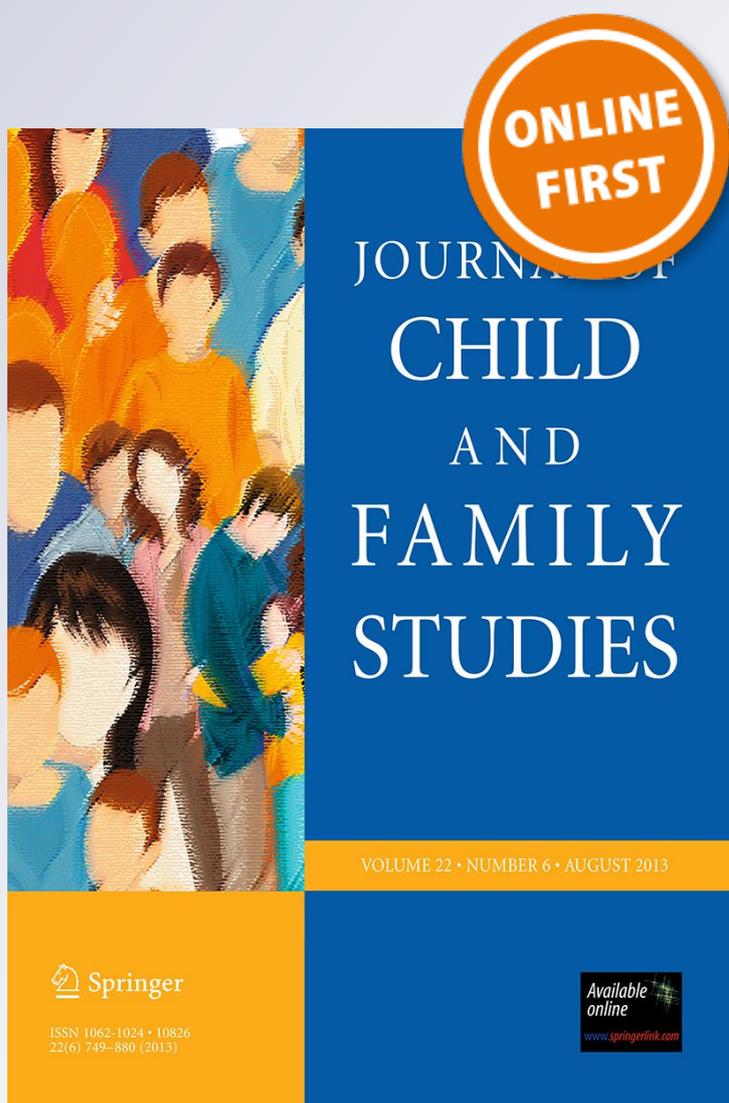
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Single Parenthood and Adolescent Sexual Outcomes

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Abstract Research suggests that children of single parents are at heightened risk of precocious sexual behavior, STDs, and other risky sexual outcomes. However, few such studies have addressed the type of single-parent family (single mother or single father), or differences across other-sex parent–child dyads. While gender essentialist models assume differences among youth living only with mothers or with fathers, constructivist models propose more flexible modes of parenting that lead to more similar outcomes. Using data from the National Longitudinal Study of Adolescent to Adult Health ($n = 2570$) on youth between the ages of 15 and 19, we compared sexually-related outcomes among adolescents, both boys and girls, who lived with a single mother or a single father. These outcomes include sexual intercourse and knowledge, use of contraception, attitudes toward intimacy and pregnancy, and diagnosis of sexually-transmitted diseases. The results from linear and logistic regression models indicated few differences between single-mother and single-father families, or between same-sex and opposite-sex parent–child matches, using p values of .05 or smaller. Our results called into question essentialist models that posit higher risks for adolescents living with a particular parent or with an opposite-sex parent.

Keywords Family structure · Single mothers · Single fathers · Adolescence · Sexual behavior

Introduction

Adolescent sexuality continues to be an important public health concern. Although trend data indicate that the rates of initiating sexual intercourse and sexual risk behaviors among adolescents have diminished in recent years (Eaton et al. 2011), a substantial proportion of youths engage in various risky behaviors. Moreover, many adolescents lack accurate knowledge of sexual practices and the health risks associated with these practices (Kershaw et al. 2003). Yet, the prevalence of these risk behaviors and knowledge is not uniform across adolescents in the U.S. For example, youth who reside with only one parent are at higher risk of certain sexual behaviors than those who live with two biological parents (Bruckner et al. 2004; Ellis et al. 2003). However, some scholars have speculated that even among youth in single parent families, there is systematic variation in these risks. Numerous studies have determined that children of single parents are at heightened risk of precocious sexual behavior, early premarital pregnancy, STDs, or other risky sexual outcomes compared to youth in two-parent families (Bruckner et al. 2004; Davis and Friel 2001; DeLeire and Kalil 2002; Ellis et al. 2003; Manlove et al. 2003; Miller 2002). However, there are limitations to this literature that should be addressed if we are to better understand the consequences of single parenthood for adolescent sexual outcomes.

First, previous studies have generally failed to address the type of single-parent family, in particular whether the custodial parent is a mother or a father. Yet, there are important reasons why the sex of the parent may matter. Moreover, in a study that took a limited view of adolescent sexual behavior, Newcomer and Udry (1987) determined that there was a higher risk of early sexual intercourse among adolescents who live with single mothers compared

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to those with single fathers. Pearson et al. (2006) also examined first sexual intercourse among youth in single mother and single-father families, but found similar levels of risk of intercourse relative to adolescents living with both parents (see also DeLeire and Kalil 2002). Examining other risk behaviors, such as illicit drug use, has revealed, though, a particularly high risk among youth living with single fathers (Hoffmann and Johnson 1998). Taken together, these studies suggest more work is needed.

A second limitation is that the range of sexual outcomes examined has been limited, with most studies focusing on intercourse or contraceptive use (see Bruckner et al. 2004 for an important exception). Yet, there are numerous other risk factors that apply to adolescents, such as attitudes about and knowledge of sexual topics, and motivations for initiating or engaging in sex (e.g., Rostosky et al. 2003). Attitudes, knowledge, and motivations are important not only because they predict risky or precocious sexual behaviors, but because they are also components of effective prevention and intervention programs (Bennett and Assefi 2005; Miller 2002; Miller and Olson 1988).

Third, most research on family structure and adolescent sexuality has focused on females living in single-mother families (e.g., Ellis et al. 2003; Wu and Thomson 2001). Conceptualizations of parenting styles suggest that the relationship between mothers and daughters differs from the relationship between mothers and sons on a number of dimensions (Santrock and Warshak 1979). The same may also be true for fathers' relationships with daughters and sons. Thus, it is important to consider the sex of the parent and the child (e.g., Krein and Beller 1988; Newcomer and Udry 1987).

Although several models have been proposed to explain why youth in single-parent families may be at higher risk of various outcomes than youth from two-parent families, differences in outcomes between youth in single-mother and single-father families have garnered much less theoretical attention. Nevertheless, two models have developed to explain general differences among these youth: essentialist and constructivist models (Downey et al. 1998; Dufur et al. 2010). The essentialist perspective posits that, due to fundamental differences between the sexes that may be traced to biological mechanisms or early socialization, women and men are simply different (Popenoe 1996; Udry 2000; for a critique of this position see Risman 1987). The growing literature on fathering has suggested that the fact that fathers do not engage in exactly the same child-care behaviors as mothers does not necessarily mean that fathers are not parenting, but rather that mothering and fathering are two separate components of parenting (Coltrane 1996; Lamb 2000; Lewis and Lamb 2003; Marsiglio et al. 2000). Some research has suggested that these gendered differences in parenting vary little across men's marital status, indicating

they may not be related to the ways couple construct gender together. Assumptions about gender essentialism are so prevalent some scholars have argued they shape the very ways scientific inquiry about gender are undertaken, a pattern evident in the scholarship on father absence cited above.

The constructivist perspective or gendered systems theory contends that gender is not a set of immutable traits linked inextricably to biological sex, but that men and women face different expectations throughout life (Downey et al. 1998; Risman 1987; West and Zimmerman 1987). Meta-analyses in the psychological literature (which tend to call this perspective gender similarities theory) have shown few differences between men and women across a number of psychological dimensions (Hyde 2005). The constructivist perspective connects distinct kinds of parenting to broader societal norms about acceptable gendered behaviors in family relations (Sayer et al. 2004). In contrast to the essentialist position, it predicts that single mothers and single fathers parent similarly because, whether female or male, they bear the sole responsibility for providing the resources all children need (e.g., food, shelter, and clothing; financial support; discipline; comfort) (Dufur et al. 2010). Evidence from two-parent families has provided intriguing support for this position: though mothers and fathers interact with children at similar rates in dyadic interactions, fathers reduce their involvement in triadic interactions where they expect mothers to play the societally accepted role of parenting (de Mendonça et al. 2011).

These two models offer distinct general predictions about youth outcomes, with the essentialist model positing that risks differ for youth in single-mother vs. single-father families and the constructivist model suggesting similar risks for these youth. When it comes to sexual outcomes, however, there are additional reasons for suggesting that the risks may differ by the sex of the single parent.

First, meta-analyses of studies of sexual behavior have generally shown that men tend to report initiating sex at younger ages and having more sexual partners than do women (Petersen and Hyde 2010). One potential explanation for these differences is that females bear greater consequences for casual or unprotected sex. As a result, women make more conservative choices about contraception and selection of sexual partners than do men. Unsurprisingly, men and women also report different reasons for and reactions to contraception use, with women more concerned about pregnancy and contraceptive availability and less concerned with how a contraceptive method might affect sexual pleasure than men are (Grady et al. 1999). Women also report greater rates of sexual assault, including acquaintance rape and greater fear of experiencing sexual assault, than do men (Elliott et al. 2004; Gustafson 1998). Single mothers may pass down this more cautious attitude

to their children, especially as they model dating, romantic, and sexual behaviors.

Second, men and women tend to have divergent sexual attitudes and behaviors because of the ways masculinity and femininity are constructed through sexuality (Connell and Messerschmidt 2005; West and Zimmerman 1987). Masculinity is constructed in part through the idea of sexual conquest and voraciousness, perhaps leading men to engage in more or riskier sexual behavior—or at least to report that they do—in an effort to express their successful engagement of masculine norms (Jonason 2007). Femininity, by contrast, is often constructed as including gatekeeping to control men's sexual behavior and being the objects of conquest. Although societal shifts have occurred that encompass views of female sexuality as pleasurable and under women's own control, there are still persistent echoes of social shaming for women and social rewards for men who are sexually active in the same ways (Jonason and Fisher 2009). Parents who have internalized these ideas about their own sexuality may have different approaches to teaching their children about sex, with single mothers perhaps more likely to emphasize social costs of sexual behavior and single fathers modeling more traditional masculine sexual attitudes. Such an emphasis on social costs might also explain patterns found in previous research suggesting that single fathers set fewer rules and provide less supervision of offspring than do single mothers (Biblarz and Stacey 2010; Coles 2015). If men pass on more relaxed attitudes toward sexual attitudes and behaviors by imposing fewer restrictions on youths' behaviors, we would expect to see more expansive attitudes about sex and more involvement in sexual behavior among children raised by single fathers.

Third, discussions about sexuality are a more sensitive issue than feeding or clothing offspring. Men who did not take on the roles of educating their children about romantic or sexual topics while coupled may be reluctant to do so as single parents. Since mothers do more work helping children process memories and emotions and tend to take on more responsibility for sexual education of children than do fathers in two-parent families (Hutchinson 2003; Hutchinson and Montgomery 2007; Zaman and Fivush 2013), single mothers may be more prepared, practiced, or willing to engage these topics with their children.

Although these three arguments suggest that single mothers may socialize youth to take a more cautious approach to sexual behaviors and attitudes, a contrary view is that reported differences between men's and women's sexual behaviors and attitudes may be exaggerated. When respondents think they are being monitored or that exaggerations can be detected, behaviors and attitudes reported by men and women about extradyadic sex become much more similar (Alexander and Fisher 2003; Fisher 2007).

This is in line with previous work on outcomes in single-mother and single-father families, where, consistent with the constructivist perspective, men and women were much more alike than might previously have been expected (Downey and Powell 1993). It is possible that, in the absence of an opposite-sex partner with which to "do gender," single parents will view sex even more similarly. If this is the case, we would not expect the sexual attitudes and behaviors they model for their offspring to differ.

The same reasons that adult females and males may differ in sexual knowledge, attitudes, or behaviors likely exist among adolescents, as well. For example, research has shown that girls are more likely than boys to initiate discussion with sexual partners about contraception and disease (Ryan 2007). By contrast, some studies have found that boys, especially those with sexual experience, correctly answer more questions about sexual knowledge than do girls (e.g., Lauszus et al. 2011).

There are also reasons to believe that parents may view sons' and daughters' sexual behaviors differently. Girls' sexuality may be viewed as something to be feared and controlled, leading to greater supervision and more explicit disapproval of the onset of sexual behaviors. This could lead to fewer other-sex friendships, which is in turn related to delayed sexual activity (Poulin and Denault 2012). Boys' sexual activity, by contrast, may be viewed as inevitable or even appropriate male behavior, leading to less monitoring of sons' whereabouts or romantic partners (Nikken and de Graaf 2013; Regnerus and Luchies 2006). For example, research has suggested that father–daughter relationships are negatively associated with sexual onset, yet mothers' relationships with adolescents do not predict this outcome (Regnerus and Luchies 2006; Rink 2007). At the same time, research has shown that although mothers are the primary providers of sexual information and socialization for both sons and daughters, this pattern is especially true for girls, who report little discussion of sexual matters with fathers (e.g., Hutchinson 2002; Hutchinson and Cederbaum 2011; Jerman and Constantine 2010). The patterns in two-parent families where paternal communication with girls is unlikely and maternal communication and disapproval have little effect on boys' sexual behaviors may be exacerbated when only one parent is regularly available (McNeely et al. 2002). This pattern might be especially likely when we consider evidence that single fathers provide less supervision (Biblarz and Stacey 2010; Coles 2015). Some of the mixed evidence from previous research suggests that girls raised by single mothers will exhibit the least risk of various sexual outcomes relative to children of either sex raised by single fathers or boys raised by single mothers, but our knowledge of what happens in the single-parent family setting is far from clear.

A final possibility is that the constructivist perspective is operative: parental gender and its interaction with child gender make little difference when it comes to sexual outcomes. Family systems research has shown little difference between sons and daughters in the ways fathers and mothers pass on gender stereotypes. This was an especially notable finding in families with both sons and daughters, where instead of using comparisons across boys and girls to differentiate gender, living in families and observing children's behaviors and attitudes made parents less likely to maintain gendered stereotypes (Endendijk et al. 2013). In addition, previous research explicitly comparing single mothers to single fathers has found few attitudinal or behavioral differences between the two types of parents, and the few differences that did exist did not translate into differences in child outcomes (Downey et al. 1998; Dufur et al. 2010). There is also little evidence that children in single-parent families benefit from living with the same-sex parent in terms of parent-child communication or closeness (Downey and Powell 1993). Although this research has not examined a range of sexual outcomes, it is suggestive of little to no difference between boys and girls raised by single mothers or fathers.

We elaborate previous research on single parents and adolescent sexual outcomes by, first, examining a variety of outcomes rather than typical ones such as sexual intercourse and, second, comparing the sex of the parent and the sex of the adolescent. Although previous research on single-mother and single-father families provides more support for constructivist arguments, the sensitive nature of sexual issues and discussions may favor traditionally gendered parenting roles and behaviors. We therefore hypothesize that youth living in single father families are more likely to have experienced sexual outcomes (e.g., intercourse) or engaged in risky sexual behaviors (e.g., intercourse without birth control) than youth living in single mother families. We further hypothesize that youth living in single father families reported more expansive sexual attitudes (e.g., more social encouragement and fewer social inhibitors to participate in sex) than youth living in single mother families. Moreover, we expect there to be differences that depend on the sex of the parent and the sex of the child, with youth living with an opposite-sex parent more likely to experience negative sexual outcomes than youth living with a same-sex parent.

Method

Participants

This study is based on data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), a

nationally representative study of adolescents in grades 7 through 12 in the U.S. in 1994 (Harris et al. 2003). The data include in-depth interviews with adolescents and their parents, which provide detailed information regarding child outcomes, family and peer relationships, and school and neighborhood characteristics. Add Health used a multistage, stratified, school-based, cluster-sampling design. Included in the sample were students from 80 high schools (both public and private), and a corresponding sample of feeder junior high or middle schools. The large sample size allows for examination of a group of single-father families that is not limited to snowball samples or other limiting sampling techniques. The Add Health also includes an extensive set of questions on adolescents' sexual attitudes, knowledge, and behaviors that allow for broader examination of youths' sexual lives than in previous research.

The Add Health had 20,745 respondents in the Wave I in-home sample. We limited our analysis to the Wave I data because we were interested in capturing non-normative sexual experiences. Using later time points increases the likelihood of capturing more normative experiences with sex. We excluded 5676 respondents who were younger than 15 years old at the time of the study because younger respondents were not asked about most attitudes and behaviors regarding sex. Of the remaining sample, we excluded 12,499 respondents we identified as not being in single-mother or single-father families (see below). The final analytic sample was 2570 of youth between the ages of 15 and 19; among these, 2326 lived with single mothers and 244 with single fathers. Missing values were treated with multiple imputation (Enders 2010; see Table 1 for the percent of the sample that required imputed values for each variable) using Stata's *mi impute chained* procedure to generate 20 imputed data sets. Based on graphical diagnostics from exploratory analysis, each imputed data set was separated by 100 iterations. The imputation process included all variables in the study. The multiple imputation data were analyzed using Stata's *mi estimate regress* and *mi estimate logistic* procedures, which use Rubin's (1987) formulas to combine parameter estimates and standard errors into a single set of results.

Measures

Single-parenthood

Due to the centrality of single-parenthood to the questions addressed by this study, we drew from the parent-report data and the household roster from the in-home data to confirm single-parent status. To be included in the sample, the responding parent must have reported valid data on their sex and must have reported being a single parent (i.e., single, widowed, divorced, or separated). The parent report

Table 1 Mean, standard deviation, minimum, and maximum of study variables, by family structure

	Single dad		Single mom		Min	Max	Percent imputed
	Mean ^a	SD	Mean ^a	SD			
Ideal romantic relationship							
We would hold hands	.96		.94		0	1	2
We would talk about contraception or STD's	.75		.74		0	1	2
We would kiss	.97		.95		0	1	2
We would touch each other under our clothing or with no clothes on	.72		.63		0	1	2
We would have sex	.67		.59		0	1	2
My partner or I would get pregnant	.15		.17		0	1	2
We would get married	.25		.29		0	1	2
Sexual knowledge quiz	6.44	1.75	6.28	1.73	0	10	0
Motivations for sexual intercourse							
Physical pleasure	2.47	.89	2.76	.92	1	5	3
Social promoters	3.41	.84	3.51	.82	1	5	1
Social inhibitors	3.38	.98	3.33	.96	1	5	2
I have had sexual intercourse	.52		.57		0	1	1
External barriers to birth control	3.96	.86	3.87	.85	1	5	2
Birth control is morally wrong	4.22	1.01	4.15	1.04	1	5	2
Friends will think I want sex if I use birth control	3.59	1.23	3.55	1.21	1	5	3
Birth control self-efficacy ^b	4.16	.92	4.21	.85	1	5	3
Females only^c							
I have taken birth control pills regularly for at least one cycle	.10		.10		0	1	0
I currently take birth control pills	.07		.05		0	1	0
My partner or I used birth control the first time I had sex ^d	.33		.36		0	1	0
My partner or I used birth control the last time I had sex ^d	.39		.38		0	1	1
It wouldn't be bad to get pregnant	4.27	1.00	4.08	1.07	1	5	1
Motivations for pregnancy	2.69	.79	2.81	.82	1	5	1
A doctor has told me that I have an STD	.06		.05		0	1	0
Controls							
Female	.37		.53		0	1	0
Age (in years)	16.31	1.09	16.43	1.17	15	21	0
Race-ethnicity							
White	.66		.37		0	1	1
Black	.15		.39		0	1	1
Asian	.04		.03		0	1	1
Native American	.13		.17		0	1	1
Hispanic	.03		.03		0	1	1
Parent educational attainment							
No HS degree	.17		.19		0	1	0
HS degree	.25		.29		0	1	0
Some college	.34		.31		0	1	0
College degree	.25		.20		0	1	0
Income (logged)	3.47	.72	2.93	.85	0	7	12
Full-time employed parent	.84		.63		0	1	1

Source: National Longitudinal Study of Adolescent to Adult Health

^a Proportions for dichotomous variables

^b Excludes 21 respondents who reported never wanting to use birth control

^c Includes only respondents who reported having sex ($N = 1443$)

^d Includes only female respondents who reported having sex ($N = 722$)

was checked against the household roster and any cases where the household roster suggested two parents present in the home were excluded from the sample. Single parenthood was coded 1 for single mother and 0 for single father.

Sexual outcomes

We included a range of attitudes and behaviors related to sex and sexual activity (Schuster 2013). Adolescent respondents were asked a series of questions about what would happen in their ideal romantic relationship. We used seven questions that were specifically related to sexual behaviors, which included holding hands, talking about contraception or STD's, kissing, touching each other under clothing or with no clothes on, having sex, getting pregnant (self or partner), and getting married. Affirmative responses were coded 1; negative responses were coded 0.

Respondents also completed a ten-item quiz about sexual knowledge. Example items included, "When a woman has sexual intercourse, almost all sperm die inside her body after about 6 h," "Most women's periods are regular, that is, they ovulate (are fertile) 14 days after their periods begin," and "In general, a woman is most likely to get pregnant if she has sex during her period, as compared with other times of the month." The number of correct responses was used to construct this variable. Higher scores indicate more correct answers.

Seven questions asked about motivations for engaging in or avoiding sexual behavior. Respondents were asked, "If you had sexual intercourse..." (1) your friends would respect you more; (2) your partner would lose respect for you; (3) afterward, you would feel guilty; (4) it would give you a great deal of physical pleasure; (5) it would relax you; (6) it would make you more attractive to men [women]; and (7) you would feel less lonely. Responses ranged from 1 "strongly agree" to 5 "strongly disagree." We submitted these items to a principle components factor analysis which resulted in three factors that related to motivations or barriers related to physical pleasure (items 4 and 5), social promoters (items 1, 6, and 7), and social inhibitors (items 2 and 3). Each factor was scaled so that higher values indicate experiencing more motivation of each kind. Corresponding Cronbach's alphas for each scale were .78, .68, and .64, respectively. We also ran models for each item individually to ensure that our approach was not masking important differences between family types on specific motivations or inhibitors. We found no patterns of difference for the individual items compared to the indices, so we do not pursue them further here. Respondents were asked to agree or disagree with the statement that "Getting [someone] pregnant at this time in your life is one of the worst things that could happen to you." Responses ranged from 1 "strongly agree" to 5 "strongly disagree."

Seven items addressed barriers to using birth control. Respondents were asked to agree or disagree on a 5-point scale ranging from 1 "strongly agree" to 5 "strongly disagree" to the following statements: "In general, birth control is too much of a hassle to use"; "In general, birth control is too expensive to buy"; "It takes too much planning ahead of time to have birth control on hand when you're going to have sex"; "It is [would be] too hard to get a girl [boy] to use birth control with you"; "Using birth control interferes [would interfere] with sexual enjoyment"; "Using birth control is morally wrong"; and "If you used birth control, your friends might think that you were looking for sex." The mean score of the items was included in the analyses with higher values indicating greater barriers to using birth control. Cronbach's alpha for the seven items was .81. As above, we ran models for each item individually as well and found no patterns of difference for the individual items compared to the indices.

Six questions asked about motivations for becoming pregnant. Respondents were asked, "If you got [someone] pregnant..." (1) it would be embarrassing for your family; (2) it would be embarrassing for you; (3) you would have to quit school; (4) you might marry the wrong person, just to get married; (5) you would be forced to grow up too fast; (6) you would have to [help her] decide whether or not to have the baby, and that would be stressful and difficult. Responses ranged from 1 "strongly agree" to 5 "strongly disagree." The mean score of the items was included in the analyses. Cronbach's alpha for the seven items was .72. Tests on individual items showed similar patterns to models using the index.

The mean score of three items tapping birth control self-efficacy was also included. Respondents were asked: "If you wanted to use birth control, how sure are you that you could stop yourself and use birth control once you were highly aroused or turned on?"; "How sure are you that you could plan ahead to have some form of birth control available?"; and "How sure are you that you could resist sexual intercourse if your partner did not want to use some form of birth control?" Responses ranged from 1 "very sure" to 5 "very unsure." Cronbach's alpha was .66. We reverse coded these items so that higher values represent more birth control self-efficacy. Those who reported never wanting to use birth control were not included in analyses of this measure. Tests on individual items showed similar patterns to models using the index.

Respondents also reported whether they had ever had penis-in-vagina intercourse. Affirmative responses were coded 1 and negative responses were coded 0. Some research suggests particularly negative effects of early onset of sexual intercourse prior to age 15 (Zimmer-Gembeck and Helfand 2008). A variable on whether the respondent had engaged in penis-in-vagina intercourse was available for

respondents under the age of 15, a group we otherwise do not include in the sample. Analyses of 463 youth below the age of 15 suggested a substantial but non-significant effect of living in a single-mother home for early onset sexual intercourse. In addition, the confidence intervals for these coefficients were very large; this finding is likely affected by the very small number of youth in single-father families in this younger, smaller sample ($N_{\text{singlefathers}} = 25$). We therefore do not discuss them further here.

Respondents who reported having had heterosexual intercourse were asked whether they or their partner used birth control (1) the first time and (2) the last time they had sex. Responses were coded 1 for yes and 0 for no. Female respondents were asked if (1) they had taken birth control pills regularly for at least one cycle and (2) if they currently take birth control pills. Responses were coded 1 for yes and 0 for no. We note that the items concerning birth control pills indicated low use of such approaches; these variables also cannot account for the possibility that female respondents eschewed this form of birth control in favor of others, including condom use by male partners, nor for the possibility of respondents taking birth control pills for purposes beyond reproductive planning, such as polycystic ovarian syndrome or menstruation problems. Still, girls who reported using birth control in this sample also reported more accurate sexual knowledge and more willingness to use any kind of birth control. Considered together, these items provide a picture of birth control usage among the respondents.

Participants reported whether or not a doctor or nurse had ever told them they had one of the following sexually transmitted infections: chlamydia, syphilis, gonorrhea, HIV or AIDS, genital herpes, genital warts, trichomoniasis, hepatitis B, bacterial vaginosis (females only), and non-gonococcal vaginitis (females only). The variable was coded 1 if respondents reported yes to having any and 0 if they reported having none of these conditions.

Control variables

We also included some basic control variables. The adolescent's sex was coded 1 for female and 0 for male. Age was measured in years. Adolescent's race-ethnicity was coded 1 for white, 2 for black, 3 for Asian, 4 for Hispanic, and 5 for Native American. In Add Health, Hispanic ethnicity is assessed using a separate question than race. In our variable, those who reported Hispanic ethnicity were coded as Hispanic regardless of their racial classification. The responding parent was asked, "How far did you go in school?" If a parent report was not available, we used the Wave I Child In-Home data (when available) or the In-School data. Parent household income was measured in \$1000s. Parent employment status was coded 1 if parent

was employed full time and 0 if parent was not employed full time. Although these characteristics are not an exhaustive list of factors that might affect the outcomes we study here, our goal is to provide a conservative test of the effects of parental sex in single-parent families.

Data Analyses

We first describe the sample, including both sexual attitudes and behaviors and demographic characteristics. We then explore potential differences between youth in single-mother families and single-father families across these variables (Table 1). Since we examine a range of continuous and binary indicators of sexual outcomes, we rely on both ordinary least squares and logistic regression to examine the associations with living with a single mother or a single father. In order to test whether the outcomes differ for adolescents living with a same-sex or an opposite-sex parent, we examine an interaction between parent and child sex in a series of regression models.

Results

A comparison between single mothers and single fathers revealed that the latter had, on average, higher incomes and that they were more likely to be employed full-time. They were also more likely to be white, whereas single mothers were more likely to be black (see Table 1). A higher percentage of girls than boys lived with a single mother. These findings were consistent with previous studies of single parenthood and suggested that youth residing with single mothers live in somewhat different social contexts than do those residing with single fathers (Dufur et al. 2010; Hof-ferth 2006).

Among the potential outcome variables, youths living with single fathers were more likely to claim that it wouldn't be bad if they or their partner got pregnant; that sexual intercourse would provide a great deal of physical pleasure; and that there were more social barriers to intercourse than were those living with a single mother. They also reported that they were more motivated to use birth control. There was also a small increase among those from single-father families in the likelihood of perceiving the ideal romantic relationship would involve physical intimacy (touching and sex). While these differences provided some evidence for more flexible norms around sexual behavior among youth in single-father families, these youth also perceived greater social barriers to sexual activity, and the two groups did not differ across most of the outcomes we study here. The conclusions from descriptive analyses, then, were somewhat mixed.

To further untangle these patterns, Table 2 shows the results of two sets of models. The first set of models included only the bivariate associations from regression models between single parenthood status (1 = single mother; 0 = single father) and the sexual attitude and behavioral outcomes. The second set extended the regression models by including not only parental status, but also the set of control variables: child gender, age, race-ethnicity, parental education, logged parental income, and parental employment.

The bivariate results indicated that adolescents from single-mother families were less likely to think that an ideal romantic relationship involves touching or having sex. However, they were more likely to say that they would be motivated to have intercourse as a way to experience physical pleasure, to report fewer social inhibitors to having intercourse, and to believe that it wouldn't be bad for them or their partner to get pregnant. Finally, female adolescents in single-mother families were less likely to report they use birth control. While these findings produced mixed

Table 2 Single-parenthood and sex attitudes and behaviors

	Bivariate ^a		Multivariate ^{a,b}	
	<i>b</i> (95% CI)	<i>p</i>	<i>b</i> (95% CI)	<i>p</i>
Ideal romantic relationship ^c				
We would hold hands	-.324 (-.982, .335)	.336	.005 (-.679, .690)	.988
We would talk about contraception or STD's	-.044 (-.350, .262)	.779	-.120 (-.441, .201)	.464
We would kiss	-.529 (-1.305, .246)	.181	-.047 (-.857, .763)	.909
We would touch each other under our clothing or with no clothes on	-.382*(-.675, -.090)	.010	-.195 (-.507, .117)	.220
We would have sex	-.358*(-.639, -.078)	.012	-.297 (-.599, .005)	.054
My partner or I would get pregnant	.134 (-.235, .504)	.477	-.084 (-.472, .305)	.673
We would get married	.193 (-.111, .497)	.213	-.093 (-.413, .227)	.570
Sexual knowledge quiz	-.170 (-.403, .063)	.152	-.104 (-.341, .133)	.391
Motivations for sexual intercourse				
Physical pleasure	.288***(.165, .411)	.000	.152*(.036, .268)	.010
Social promoters	.102 (-.006, .211)	.065	.029 (-.075, .133)	.588
Social inhibitors	-.043 (-.171, .085)	.514	-.019 (-.149, .110)	.769
I have had sexual intercourse ^c	.208 (-.057, .472)	.124	.046 (-.237, .329)	.748
External barriers to birth control	-.089 (-.203, .025)	.127	-.057 (-.172, .058)	.330
Birth control is morally wrong	-.068 (-.206, .071)	.338	-.045 (-.187, .096)	.530
Friends will think I want sex if I use birth control	-.016 (-.178, .147)	.850	.013 (-.151, .177)	.874
Birth control self-efficacy ^d	.056 (-.059, .171)	.341	.028 (-.089, .146)	.638
My partner or I used birth control the first time I had sex ^{c,e}	-.011 (-.393, .371)	.954	.032 (-.370, .435)	.874
My partner or I used birth control the last time I had sex ^{c,e}	-.404 (-.823, .015)	.059	-.227 (-.665, .211)	.309
Females only ^{c,f}				
I have taken birth control pills regularly for at least one cycle	-.580 (-1.162, .003)	.051	-.549 (-1.175, .077)	.086
I currently take birth control pills	-.784*(-1.412, -.155)	.015	-.606 (-1.295, .082)	.084
It wouldn't be bad to get pregnant	-.194**(-.335, -.053)	.007	-.025 (-.167, .117)	.731
Motivations for pregnancy	.123*(.014, .232)	.027	-.029 (-.139, .080)	.600
A doctor has told me that I have an STD ^c	-.231 (-.786, .324)	.415	-1.020**(-1.638, -.402)	.001

Unstandardized coefficients from OLS regression unless otherwise indicated

N = 2570 unless otherwise indicated

Source: National Longitudinal Study of Adolescent to Adult Health

^a Single father is the reference category for structure (i.e., single moms = 1, single dads = 0)

^b Controls include gender, age, race, parent education, logged parental income, and parental employment

^c Log odds from logistic regression

^d Excludes 21 respondents who reported never wanting to use birth control

^e Includes only respondents who reported having sex (*N* = 1443)

^f Includes only female respondents who reported having sex (*N* = 722)

p* < .05; *p* < .01; ****p* < .001

evidence for comparing essentialist and constructivist theoretical approaches, only two of these bivariate associations persisted when statistically adjusting for several control variables. Adolescents from single-mother families remained less likely to say that having sex is part of an ideal romantic relationship and were more likely to say that they would be motivated to have intercourse as a way to experience physical pleasure. The lack of significant results provided little support for the essentialist perspective arguing differences across parent gender, and the findings that were significant do not point to an essentialist conclusion: the two findings concerning differences pointed in opposite directions. Moreover, the two differences in sexual attitudes were not linked to action; youth in single-father families were no more likely to report engaging in intercourse than were those in single-mother families. It is true,

however, that once we statistically adjusted for the other variables, those living with a single father were more likely to report being diagnosed with an STD.

Table 3 provided a set of regression models that extended the models shown in Table 2 by including an interaction term between parents' gender and adolescents' gender. This provided a method to compare males and females living in the two types of family structures. Only two of the 19 interaction terms were statistically significant at the $p < 0.05$ level. These two addressed whether it would be "bad" to get pregnant and motivations for pregnancy. Girls living with a single mother were more likely to think it would be bad to get pregnant, and they were less motivated to do so. However, there was a substantial likelihood that the statistically significant interactions were due to chance alone since they represented only two of the possible 19

Table 3 Single-parenthood and sex attitudes and behaviors: the interaction between parent and child sex

	Single mom	Female	Single mom × female
Ideal romantic relationship ^a			
We would hold hands	.184 (−.592, .960)	.899 (−.684, 2.482)	−.667 (−2.291, .957)
We would talk about contraception or STD's	−.207 (−.612, .199)	−.122 (−.727, .483)	.227 (−.406, .859)
We would kiss	.282 (−.692, 1.255)	.548 (−1.132, 2.229)	−.858 (−2.587, .870)
We would touch each other under our clothing or with no clothes on	−.077 (−.481, .327)	−.470 (−1.054, .114)	−.270 (−.879, .338)
We would have sex	−.145 (−.532, .242)	−.582*(−1.144, −.021)	−.355 (−.943, .232)
My partner or I would get pregnant	−.168 (−.639, .304)	−.366 (−1.141, .409)	.247 (−.561, 1.054)
We would get married	−.123 (−.527, .280)	.055 (−.557, .667)	.078 (−.558, .715)
Sexual knowledge quiz	.022 (−.273, .317)	.627**(.181,1.073)	−.331 (−.799, .137)
Motivations for sexual intercourse			
Physical pleasure	.117 (−.028, .262)	.615***(.394, .835)	.093 (−.137, .323)
Social promoters	−.035 (−.165, .095)	.497***(.299, .695)	.168 (−.039, .375)
Social inhibitors	.014 (−.149, .176)	−.252*(−.499, −.005)	−.087 (−.346, .172)
I have had sexual intercourse ^a	.203 (−.150, .557)	.220 (−.320, .760)	−.416 (−.981, .150)
External barriers to birth control	−.103 (−.246, .041)	.129 (−.089, .346)	.120 (−.108, .348)
Birth control is morally wrong	−.005 (−.181, .171)	.340*(.073, .606)	−.106 (−.385, .173)
Friends will think I want sex if I use birth control	.025 (−.179, .230)	.572***(.264, .879)	−.031 (−.353, .290)
Birth control self-efficacy ^b	.097 (−.050, .244)	.449***(.227, .671)	−.180 (−.412, .052)
My partner or I used birth control the first time I had sex ^{a,c}	.030 (−.470, .530)	.324 (−.448, 1.096)	.006 (−.797, .810)
My partner or I used birth control the last time I had sex ^{a,c}	−.225 (−.796, .346)	−.366 (−1.193, .462)	−.005 (−.862, .852)
It wouldn't be bad to get pregnant	−.025 (−.167, .117)	−.001 (−.082, .079)	−.093***(−.128, −.058)
Motivations for pregnancy	−.029 (−.139, .080)	−.000 (−.062, .062)	.081***(.054, .108)
A doctor has told me that I have an STD	−.396 (−1.629, .837)	2.125**(.814, 3.437)	−.879 (−2.267, .510)

Unstandardized coefficients from OLS regression unless otherwise indicated

$N = 2570$ unless otherwise indicated

Controls include age, race, parent education, logged parental income, and parental employment

Source: National Longitudinal Study of Adolescent to Adult Health

^a Log odds from logistic regression

^b Excludes 21 respondents who reported never wanting to use birth control

^c Includes only respondents who reported having sex ($N = 1443$)

* $p < .05$; ** $p < .01$; *** $p < .001$

comparisons we made. The absence of differences between same-sex and opposite-sex parent–child dyads favored the constructivist perspective over the essentialist perspective.

Discussion

In this article, we used the National Study of Adolescent to Adult Health (Add Health) to explore whether a broad range of adolescent behaviors, attitudes, knowledge, and motivations regarding sex differs for those who live in single mother and single father families. Although substantial attention has been given to single parents and adolescent sexuality, potential differences between single mothers and single fathers have been largely ignored. We addressed this gap in the literature by applying essentialist and constructivist perspectives that anticipate different answers to the question of whether growing up in a single mother or single father family should be similarly related to adolescent sexuality. We also tested whether the presence or absence of differences depends on whether the adolescent lives with the other-sex parent. Given previous research on patterns of parent–child communication about sex, we hypothesized that youth in single-mother families would have more positive sexual outcomes and that we would find significant differences in outcomes between same-sex and other-sex parent–child dyads. We found little evidence to support either of these hypotheses.

Instead, these results were consistent with a constructivist position, and offered little support for an essentialist position regarding single parenthood and adolescent sexual outcomes. Recall that the constructivist perspective predicts that single mothers and single fathers parent similarly because they bear the sole responsibility for providing for their children. This would appear to apply to resources that affect various behavior and attitudinal sexual outcomes. The evidence supported the notion that male and female single parents take on the responsibilities traditionally acted out by the opposite sex when there is no partner to fill those roles (West and Zimmerman 1987). Fathers likely take on tasks traditionally associated with mothering—and vice versa—when they are the primary or sole caregiver for their children. This even appeared to extend to tasks that may affect their children's sexual risk behaviors and attitudes toward sexuality, regardless of whether the child was a son or daughter.

Furthermore, the empirical results presented here cast substantial doubt on the essentialist arguments that have been used to draw particular attention to the risks of living in single-mother families (Popenoe 1996; Pruett 2000). It appeared that single mothers are as capable as single fathers at raising both male and female children, at least in terms of sexual attitudes and behaviors (Downey and Powell 1993).

Potential differences in how single mothers and single fathers set rules or supervise their children did not appear to translate into differences in sexual behavior or promotion (Biblarz and Stacey 2010; Coles 2015). This, of course, did not speak to the issue of whether the risks of unhealthy sexual outcomes are higher in single-parent than in two-parent families. But it did suggest that essentialist viewpoints are of dubious quality for understanding the behaviors and attitudes of adolescents. Clinicians and educators interested in promoting sexual health should note that children from a variety of family configurations may have similar attitudes and information (or lack thereof). Our results suggested that focusing on family gender stereotypes as a “shortcut” to addressing adolescents' sexual beliefs and behaviors may not be fruitful.

The results also raised doubt as to more specific concerns with how living with an opposite- or same-sex parent influences adolescent sexual outcomes. Although previous research suggested that mothers have a stronger effect on their daughters' sexual behaviors than on their sons' (e.g., Hutchinson 2002; Hutchinson and Cederbaum 2011) and that the relative lack of supervision of boys in single-parent families may place them at especially high risk of precocious sexual behaviors (Regnerus and Luchies 2006), our findings failed to support either of these views. Instead, living in a single mother or single-father family had similar consequences for sexual behaviors and attitudes among boys and girls. This is not necessarily because the previously reported patterns do not exist in two-parent families, but rather is more likely attributable to single mothers and single fathers parenting more like each other when they do not have a partner with whom they can “do gender.” When these parents do not have the luxury of assigning the discussion of sexual matters to one parent or the other, they take on the tasks of educating and monitoring their children regardless of whether they are mothers or fathers. While our findings showed that sexual outcomes were similar for youth in single-mother and single-father families net of demographic characteristics, it is important to note that single mothers are often not parenting in the same context as are single fathers. In particular, they experience deficits in income and education that add to the already stressful circumstances of single parenting. These deficits in financial and human capital also often translate into academic and behavioral deficits in other areas of adolescents' lives. Thus, our results applied only to various sexuality-related outcomes but did not speak to other risks or problems that adolescents in particular single-parent families may experience. In general, then, future research should continue to explore the myriad risks that adolescents experience and to examine how single mother and single-father families differ in these risks. In particular, single-mother and single-father families may differ in their access to physical

resources and social resources. For example, though single fathers tend to have more education and higher incomes than do single mothers, these fathers may lack parenting networks that model parenting activities typically done by mothers in two-parent families. Exploring how physical and social resources affect parental influence over adolescent sexual outcomes in a variety of family structures could potentially help both single mothers and single fathers better address their children's sexual education.

In addition, future research might examine how single parents do gender with adults who are not their spouses. Uncoupled parents are likely to be seeking companionship and, as a result, model dating behavior and romantic expectations for their offspring. Research examining parents' dating and sexual behaviors in conjunction with their children's can more thoroughly explore the socialization mechanisms through which parents teach their children about sexual issues. Our models here also did not take into account other adults who may live in the household but outside of romantic relationships with parents, such as grandparents or other relatives. The presence of other adults may affect how parents enact gender with their children, particularly as regards to education and discussion about sexual matters, and should be explored more thoroughly. Finally, our data were not able to explore the ways parents who share custody may be enacting gender more like coupled parents or like single parents. As more family dissolutions result in time spent with both single parents, such questions deserve more exploration.

Limitations

Although our results did help us adjudicate between two general arguments regarding the effect of living with a single parent, there were several limitations that should be addressed in future research. First, the data were based on self-reports of behaviors. Yet, reports of intercourse initiation in the Add Health suffered from poor reliability among some groups (e.g., African-American males) (Upchurch et al. 2002). However, there was no difference in (mis)reporting by family structure, so our results should be valid generally.

Second, we recognize that some of the results and our interpretations of them, especially those that addressed differences by parent-child gender dyads, may be affected by low statistical power. In particular, the power to detect differences with interaction effects is normally lower than the power to detect differences in main effects (Frazier et al. 2004). Since many of the interaction effects presented in the Table 3 appeared to have substantial effect sizes but were not statistically significant, we urge caution in judging these as unimportant since the level of significance reached may have been affected by low power. Future studies with larger

subsample sizes of single-father families may thus be required to validate our results.

We recognize that additional differences between single mothers and single fathers that we could not account for in these data likely exist. For example, we were unable to assess how these parents gained custody of their children or the relationship the child may have had with the non-custodial parent. Some early research suggested that troubled or difficult children might more often be parented by fathers because of a (perhaps mistaken) belief that fathers are superior disciplinarians (Downey and Powell 1993). Adolescents involved in early sexual activity might fall into this category; if so, mechanisms that sort children into different family structures might be obfuscating real differences in parenting styles and behaviors. There is also some evidence that children who end up in paternal custody are assigned there because their mothers are judged to be incompetent parents (Artis 2004); such cases are likely associated with unusual levels of family stressors that could influence adolescents' sexual and romantic decision-making. Better understanding custodial mechanisms will increase our confidence in the findings here that showed few differences between the ways single men and single women parent.

It is also true that sexual activity becomes more normative as adolescents age. Indeed, more than 50 percent (56%) of the respondents in our sample reported that they had had sex. Discussion of parental supervision as a strategy to limit adolescent sex may privilege adult attitudes that favor delaying sexual onset. Social cachet associated with sexual activity, as well as maturation into valuing romantic exclusivity, may lead adolescents to have very different perspectives on the value of delaying sexual activity. We might have speculated that youth in single-mother families might adhere less to these ideals about benefits of adolescent sex if their mothers urged more caution about sexual activity, but we found no evidence of this in our models. This may be because the respondents in our sample were almost as likely to report social inhibitors to sexual behavior as they were to report social encouragement. More targeted research into how youth in single-mother or single-father families react to growing social pressures or rewards to engage in sex as they age may shed light on additional gendered practices within these families.

In addition, there are potentially important differences between never-married, divorced or separated, and widowed single parents that merit attention. In particular, positive contact with non-custodial parents may include education about or monitoring of sexual activities in a fashion that is more reminiscent of the gendered division of labor division found in two-parent families. The inability to further distinguish the selectivity issues inherent in how single-parent families are formed was a weakness Add

Health shares with most large datasets, but the large number of single-father families available in the data made it a worthwhile source for inquiry. Although previous research using small subsamples of nationally representative datasets has suggested that these influences have little effect, future research should continue to examine these and other mechanisms that affect the creation and functioning of single-parent families (Downey et al. 1998; Dufur et al. 2010).

We also note that many of the questions we used as outcomes here are clearly tied to heterosexual behaviors and norms, and thus our findings could not be extended to the attitudes and behaviors of adolescents of other sexualities. Research into the ways gender does or does not play into parenting strategies in single-parent families could be further illuminated by examining the ways these parents discuss sex and sexuality with adolescents who do not identify with heterosexual or cis-gendered norms. Similarly, our data did not allow for another clear test of the influence of parental gender on youth outcomes: an examination of children in same sex-parented families. Most credible research on these families suggested few notable differences between children raised by gay or lesbian parents and those raised by opposite sex parents (cf. Biblarz and Stacey 2010); some work that has identified differences in such children shows positive outcomes such as lessening of stereotypical behavior (Bos and Sandfort 2010; Goldberg et al. 2012). An expansion of such inquiries to outcomes such as those we study here would provide additional weight to the question of the degree to which parental sex and enacting of gender influences child development and outcomes.

In sum, our results suggested that a variety of sexual outcomes—behavioral and attitudinal—among adolescents are not distinct for those living with a single mother or a single father. Moreover, with a couple of possible exceptions that may warrant additional research, male and female adolescents did not experience different risky outcomes from living with same-sex or different-sex parents. Thus, although some scholars have proposed that living in single-mother families poses special risks for adolescents, we found no evidence to support this position when examining myriad sexual outcomes. Any special sexual risks experienced by living with a single parent may be due, instead, to other characteristics that single-parent families experience.

Data and Coding

The authors are not able to distribute data files because of licensing agreements with Add Health. Coding syntax files can be accessed at <https://github.com/johnhoffmannVA/SingleParentPaper.git>.

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Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no competing interests.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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