Marital Quality and Parent-Adolescent Relationships

Effects on Sexual Activity Among Adolescents and Young Adults

U.S. Department of Health & Human Services

www.hhs.gov

Office of the Assistant Secretary for Planning and Evaluation

Marital Quality and Parent-Adolescent Relationships:

Effects on Sexual Activity Among Adolescents

and Young Adults

Prepared for: **The Office of the Assistant Secretary for Planning and Evaluation**

Department of Health and Human Services

Prepared by : Kelleen Kaye
NORC at the University of Chicago

With: Randal D. Day
Brigham Young University

Elizabeth C. Hair
Kristin Anderson Moore
Alena M. Hadley
Child Trends, Inc.

Dennis K. Orthner
University of North Carolina at Chapel Hill

November 2008

Marital Quality and Parent-Adolescent Relationships:
Effects on Sexual Activity Among Adolescents and Young Adults

Executive Summary

The link between growing up outside of an intact family, and the likelihood of engaging in risky sexual behaviors as an adolescent has been explored extensively. However, there are fewer studies examining the age of onset of sexual activity and the likelihood of risky sexual behaviors among adolescents within intact families, specifically married-parent families, and what elements of married-parent families seem to function as protective factors for adolescents. This study takes an extensive look at relationship characteristics within married-parent families—that is, the parent marital relationship, the youth-parent relationship, and the interaction of the two—to identify the family context that might influence adolescents sexual activity. Parental marital relationships were characterized both with respect to level of supportive qualities as well as degree of conflict, and the youth's relationship with each parent was characterized as positive or negative.

The study uses data from the National Longitudinal Survey of Youth, 1997 cohort (NLSY97), a nationally representative sample of adolescents who are being followed into adulthood. Predictors include youth reports on the quality of parent marital relationship and quality of parent-adolescent relationships (i.e., mother-adolescent and father-adolescent), marital structure, and a number of contextual covariates and control variables. Combined parent marital quality and parent-adolescent relationship clusters were developed using latent class analyses and were used to predict whether the youth delayed sexual activity during the teen years and, if not, if they engaged in unprotected sex during the mid teen (age 14-16) and later teen (age 17-20) years. In addition to estimating these influences for youth in married-parent families overall, separate models were estimated for male and female youth, as well as for youth in married

biological-parent and married step-parent families. In addition, the models controlled for an extensive set of other family, parental and youth characteristics as described below.

Results showed that quality of parents' marital relationship and the youths' relationship with their parents both influenced the youths' sexual behaviors. However, the relative importance of each differed for the full sample, males, females, youth living with both biological parents, and youth living with a step parent, and also depended on the sexual behavior in question. Among the full sample, both parent marital quality and the parent-youth relationship influenced the odds of having sex by age 16, the odds of having sex by 18 and the odds of having unprotected sex during the mid teens. The story by gender was quite different. For males, relationship factors had no significant influence on the odds of sexual initiation by age 16 or 18, while strongly influencing the odds of unprotected sex during the mid teen years, with the youth-parent relationship appearing more important. On the other hand, for females, the odds of unprotected sex were relatively unaffected by relationship factors, while the odds of having sex by age 16 and by age 18 were more strongly influenced, with the combination of a negative relationship with parents and a poor marital quality between parents being the strongest risk factor. For youth living with both biological parents, the odds of having sex by age 16 or by age 18 and the odds of having unprotected sex in the mid teens were all modestly higher among those who reported both a negative relationship with their parents and a poor marital quality between their parents. For youth living in step-families, the most notable influence of relationship factors was on the odds of having unprotected sex in the mid teens, which were 24 percent higher among those who reported a negative relationship with their parents and a high quality relationship between their parents.

ii

Other covariates with significant influence on youths' sexual behaviors during the teen years include parents' marital disruption (risk factor), family religious activity (protective factor), individual character, and peer and community influences.

Neither parents' marital relationship nor the youth-parent relationship had any significant influence on the odds of youth having unprotected sex during the later teen years. However, the influence of family religious activity during the teen years, individual character and peer influences remained significant.

Marital Quality and Parent-Adolescent Relationships:

Effects on Sexual Activity Among Adolescents and Young Adults

INTRODUCTION

According to data from the 2007 Youth Risk Behavior Survey, 65% of students in twelfth grade have had sex at least once (CDC, 2008a). Furthermore, according to somewhat earlier data, just over 17% of all teen girls who had had sex in the last 12 months reported they did not use any form of contraception (Chandra et al, 2005). As a result, 72 per 1,000 girls age 15 to 19 get pregnant each year, and an estimated 30% of all girls will get pregnant at some point during their teen years (Ventura et al, 2008; National Campaign, 2008). In addition, the Centers for Disease Control recently reported that at least one in four teen girls have a sexually transmitted infection (CDC, 2008b).

As the percent of teens that are sexually active has increased and the age of sexual initiation has declined, a growing body of research has examined the factors that affect teen sexual activity. A key focus of this research has been the role of family. On the whole this research has shown that family structure matters with both onset of sexual activity and engaging in unprotected (or risky) sex There is less evidence about the attributes within a particular family structure that serve as risk factors or protective factors. In particular, we know relatively little about the extent to which the quality of the marital relationship matters, or is the principal protective factor one of living in a two parent household. While the influence of marital relationship quality has been relatively unexplored, the extent research does consider the role of interactions between the parent and adolescent, with most of the literature showing that the quality of the parent child relationship does have a significant influence on teen sexual behavior. This study address the marital relationship gap in our understanding of how family can influence

1

adolescent outcomes. Theory suggests that parents' relationships may influence adolescents'

sexual behavior both directly (by providing—or not—a positive role model for the adolescents

and shaping their aspirations for future relationships) or indirectly (by providing—or not—a

source of resiliency and support for the parents as they seek to influence their children.) (see

Guilamo-Ramos et al, 2008, Calhoun & Friel, 2001 and Lansford et al, 2001 for helpful review

of theories including the influence of adult role models, family culture, and parental monitoring

and control.)

The study presented here is unique in that it focuses on teens living with parents who

were married at the beginning of the period, and examined the extent to which their odds of

engaging in sexual activity were influenced by the quality of relationship they had with their

parents and the quality of the relationship their parents had with each other, along with a number

of other family and individual characteristics. Our analysis of sexual activity included both

measures of risky behavior and risk avoidance. Risky behavior included early onset of sexual

activity (by age 16) and engaging in unprotected sex outside a cohabiting or marital relationship

between ages 14 and 16 and between ages 17 and 20. Risk avoidance is measured as delaying

sexual activity until age 18 or later. Taken together with results presented elsewhere from this

project, the findings begin to help us understand the complicated story of how different processes

within intact families act as sources of resilience for teens for different outcomes.

EXISTING RESEARCH ON YOUTH SEXUAL ACTIVITY AND
THE INFLUENCE OF FAMILY RELATIONSHIPS

While the question of why adolescents engage in sexual activity has been extensively

studied for more than three decades, this question gained significant prominence in 1987 with the

publication of *Risking the Future: Adolescent Sexuality, Pregnancy and Childbearing* (National Academy Press, 1987) and *Adolescent Sex, Contraception, and Childbearing: A Review of Recent Research* (Moore, et al, 1987). These publications reviewed existing evidence on several determinants of adolescent sexual activity, with a strong emphasis on family characteristics. Both publications provided compelling evidence in support of the hypothesis that growing up outside of an intact family significantly increases the risk that adolescents will engage in premarital sex. Moore et al reviewed in greater depth the evidence as to why parental influence matters, and the role of parent-adolescent relationships in particular. The authors concluded that the mechanisms through which parental influence operates were complex and not well understood; that they likely included attributes such as parental control, parent/child communication, and parental warmth or support; that these attributes operated directly as well as indirectly through other channels such as adolescent depression, alcohol use and influence of peers; and that the channels likely differed for boys and girls. The role of parents' marital quality was captured primarily indirectly in terms of marital instability and dissolution, and was generally found to significantly increase the risk of adolescent premarital sex. Miller and Moore's *Adolescent Sexual Behavior, Pregnancy and Parenting: Research through the 1980s,* largely echoed these conclusions (Miller & Moore, 1990).

By 2001, research exploring the role of family in determining adolescent sexual outcomes had greatly expanded, (Miller, Benson and Galbraith, 2001), yet the focus of the field remained concentrated on parent-child interactions, with little evidence pertaining to the quality of parents' relationship. In this extensive synthesis of studies pertaining to family influences and adolescent pregnancy risk, the authors found highly consistent evidence that parental support and warmth reduced the risk of adolescent sexual activity. Parental control and regulation were also

3

found to negatively influence the likelihood of sexual activity among adolescents in the majority of studies reviewed, but the authors noted that null findings in several studies indicated this question needed further exploration. Finally, the authors found that the existing evidence on the role of parent/teen communication was highly mixed and inconclusive. The importance of parents' martial quality was explored only in terms of martial status, and the studies generally pointed in the expected direction—that is, growing up within an intact family reduced the risk of adolescent sexual activity.

More recently, researchers have sought to move beyond the bounds of these more traditional parent-teen relationship attributes, and consider additional family process measures (Fruth et al, 2005). These measures included not only more nuanced parent-teen interactions focused specifically on dating outcomes, but also measures focused more specifically on the parents' attitudes and behaviors. Parents' attitudes included cautiousness about dating and preferred age at first sex. Parents' behaviors considered as possible indicators of the attitudes, messages, or actions that might affect teens included parents' past behaviors such as age at first sex, age at first pregnancy, and sexual regrets, as well as contemporaneous behaviors such as whether the parent was cohabiting or allowing a dating partner to spend the night. As the authors' hypothesized, parent-teen interactions pertaining specifically to dating influenced the likelihood of teen sexual activity even more than general indicators of parent-teen relationships.

However, they found only limited evidence that parents' actions and attitudes were influential in shaping adolescents' sexual activity. Furthermore, while this study took an important step toward examining the distinct role of parents—that is, beyond the direct interaction parents have with their children—it still did not examine parents as a couple, and the role that their relationship plays on the sexual activity of their adolescent children. Thus, our

understanding of married-parent families, and the attributes of married-parent family relationships that may operate as protective factors against risky sexual behaviors among youth remains very limited.

THE PRESENT STUDY

The study discussed here takes a closer look at adolescents living with married parents, and how the quality of relationships within those families influences outcomes during adolescence as well as during the transition to adulthood. Our findings explore, in particular, the role played by the quality of parents' marital relationship, the quality of relationship between the parents and the adolescent, and the interaction between the two. Models included controls for whether the adolescent was a boy or a girl, and whether the adolescent lived with both biological parents or with a step parent. In those cases where the controls indicated significant differences by gender or by family type, separate estimates were done for each subgroup to examine the ways in which these differences might operate. Models also included a number of individual, family, peer, and community control variables as potential covariates in these relationships. We hypothesized that adolescents whose parents have a high quality marital relationship and who have a positive relationship with their parents would have higher odds of risk avoidance (e.g. delaying sex until 18) and lower odds of engaging in risky sexual activity (e.g. early sexual activity (by age 16) and unprotected sex outside a committed relationship).

DATA AND METHODS

Data

The National Longitudinal Survey of Youth, 1997 cohort (NLSY97), is a nationally representative sample of 8,209 adolescents, ages 12-16 in 1997, who were surveyed over time. The survey is primarily sponsored by the Bureau of Labor Statistics of the U.S. Department of Labor and examines school progress, labor force behavior, and the transition from school to work. To accomplish this task, extensive information is collected on the youth's labor market behavior and educational experiences. The NLSY97 also collects data on a broad array of child and family interactions and relationships, as well as adolescent health-related behaviors.

Sample

We limited our sample to 3,316 respondents who were 12 to 14 years old in December 1996 and whose parents were married at the time of the interview in round one. The sample was 52.4% males (N=1736) and 47.7% females (N=1580). The race and ethnicity breakdown was as follows: 59.7% non-Hispanic White (N=1981), 21.5% Hispanic (N=714), 17.8% non-Hispanic Black (N=590), and 0.9% mixed race (N=31).

Measure of Sexual Activity

Our study focuses on four measures of sexual activity. The first two measures reflect onset of sexual activity, by age 16 and by age 18. One measure reflects the early engagement in sexual activity (by age 16). The third and fourth measure relate to engagement in risky sexual behaviors, defined as having unprotected sex, between the ages of 14 and 16 and between the ages of 17 and 20. For both of these measures, unprotected sex within a marriage or cohabiting relationship is not counted, but these cases would naturally be quite uncommon among those age 14 and 16. While there are a number of ways to measure sexual activity among adolescents, (e.g. age at first sex, number of partners, frequency of sexual activity, contraception at first sex or at last sex), we felt the four measures used in this study are among the clearest and most

obvious examples of risk taking and risk avoidance as they relate to the possibility of teen

pregnancy or contraction of sexually transmitted infections.   As Table 1 indicates, the percent of

teens initiating sex by age 16 and by age 18 was 35% and 77% respectively. The percent

engaging in unprotected sex outside a committed relationship between ages 14 and 16 and

between ages 16 and 20 was 14.0% and 51.9% respectively.

Table 1. Percent of Adolescents Engaging in Each Sexual Behavior

	Full Sample	Male	Female	Bio-Married	Step
Engaging in Risky Sex Age 14-16	14.0%	12.2%	16.0%	11.7%	19.8%
Engaging in Risky Sex Age 17-20	51.9%	48.7%	55.3%	48.8%	60.2%
Sex before age 16	35.3%	37.4%	33.1%	30.2%	48.5%
Sex before age 18	77.0%	78.7%	75.0%	73.2%	85.5%

Predictor Measures

Similar to analyses presented elsewhere in this volume, the primary predictors of interest

as they relate to engaging in or avoiding risky sexual behaviors are quality of the parent marital

relationship and quality of the parent-adolescent relationships. As described in "Parent Marital

Quality and the Parent-Adolescent Relationship: Profiles of Relationship Quality," (Hair et al,

2009), adolescents fell into one of six clusters depending on the quality of relationships in their

families: 1) those who had a positive relationship with both of their parents and whose parents

had a supportive and low-conflict marriage; 2) those who had a positive relationship with just

one parent and whose parents had a supportive and low-conflict marriage; 3) those who had a

positive relationship with at least one parent and whose parents had a supportive but high

7

conflict marriage; 4) those who had a positive relationship with at least one parent but whose parents had an unsupportive marriage—with or without conflict; 5) those who had a bad relationship with both parents but whose parents had a supportive and low-conflict marriage; and 6) those who had a bad relationship with both parents and whose parents were in an unsupportive and/or high conflict marriage. These categories are based on the six profiles identified by latent class analysis. They represent those combinations of parent marital quality (supportive/low conflict, supportive/high conflict, unsupportive/high conflict, unsupportive/low conflict) and adolescent-parent relationship (positive with on parent, positive with both parents, negative with both parents) that the data suggest are most salient in accounting for the significant associations within the data, rather than a categorical variable defined *a priori*.

As noted earlier, nearly half (48%) of the adolescents were profiled to have positive relationships across in both domains—that is, positive relationships with both parents and parents in a high quality marriage. Very few adolescents (4%) were profiled to have low quality relationships across both domains—that is, negative relationships with both parents and parents in a unsupportive and/or high conflict marriage. The remaining adolescents were in families experiencing a mix of positive and negative relationship attributes.

Contextual Variables

In addition to modeling the association between these relationship profiles and sexual activity among the adolescents, we also controlled for an extensive array of contextual variables that may influence the likelihood of adolescents' sexual activity. These covariates are briefly summarized below and described in greater detail elsewhere in this volume:

- Parents' marital characteristics, including whether parents are biological or step, length of marriage, and marital disruption subsequent to the profiling of relationships.

- Family characteristics, including income, number of siblings, mother's age at time of adolescent's birth, parental employment, highest level of parental education, parental involvement in school, and religiosity.

- Adolescent characteristics, including age, gender, race/ethnicity, disability, and whether adolescent lies or cheats.

- Peer characteristics were captured using an index of positive and negative behaviors including church attendance, participation in sports or other activities, planning to attend college, volunteer activity, belonging to a gang, cutting class and having sex.

- Environmental characteristics, including geographic region, urban residence, and an index of physical risk.

Data Analysis

Logistic regression analyses were used to examine the influence that adolescent-parent relationships and parent marital relationships have on measures of sexual behaviors during the mid teen and later teen years. These analyses estimate whether the odds of engaging in early and risky sexual behaviors are any higher for adolescents and older teens having mixed or negative relationships in their families as compared to adolescents who have positive relationships with both parents and whose parents are in a high quality marriage (the reference group). Missing data were addressed using full information maximum likelihood estimation procedures, as detailed in Parent Marital Quality and the Parent-Adolescent Relationship: Effects on Adolescent and Young Adult Health Outcomes, by Hair et al., 2009

RESULTS

Marital Quality, Adolescent-Parent Relationship and Sexual Activity

The logistic results presented in Tables 2-5 provide limited evidence that family relationships influence the engagement in, or avoidance of risky sexual behavior during adolescence and into the late teens. Results showed that quality of parents' marital relationship and the parent-youth relationship both influenced youths' sexual behaviors, although the relative importance of the two varied across different groups of youth and also depended on the outcome in question

Engaging in Sex by Age 16. When looking at the full sample, we see that the parent-youth relationship can play a significant role in reducing the odds of early onset of sexual activity—that is, having sex by age 16, (Table 2). We find that compared to profile 1 (characterized by a positive adolescent-parent relationship and high quality parental marriage), having a negative relationship with one or both parents as seen in profile 2 (characterized by one negative adolescent-parent relationship and high quality parental marriage) and profile 5 (characterized by two negative adolescent-parent relationship and high quality parental marriage) both increase the odds of initiating sexual activity prior to age 16 (OR=1.05, p<.10 and OR=1.09, p<.05 respectively). In addition, we see from the results for profile 6 (characterized by a negative adolescent-parent relationship and low quality parental marriage) that having parents with a poor marital relationship further exacerbates this risk (OR=1.10, p<.01.

These patterns differ by gender. The odds of male adolescents engaging in sex by age 16 do not differ significantly for any of the relationship profiles, regardless of parent marital quality or parent-adolescent relationship. In contrast, the odds of female adolescents engaging in sex by age 16 are dramatically higher for those who report both a poor relationship with their parents and a poor marital relationship between their parents (OR=1.17, p<.001).

Table 2. Multivariate Logistic Regression Models for Parent Marital Quality Parent-Adolescent Relationships, and Additional Covariates Predicting to Early Sex (by age 16) for the full sample, gender sub-groups, and marital status subgroups (NLSY-97).

	Full Sample Early Sex (by age 16)		Male Early Sex (by age 16)		Female Early Sex (by age 16)		Two bio parents married Early Sex (by age 16)		Step-families Early Sex (by age 16)	
	N= 3316		N= 1736		N= 1580		N= 2386		N= 930	
	OR	sig	OR	sig	OR	sig	OR	sig	OR	sig
Marital Quality and Parent_Adolescent Relationship Groups										
High Marital Quality and good relationship with both parents	ref		ref		ref		ref		ref	
High Marital Quality and good relationship with one parent	1.05	+	1.04		1.07		1.01		1.09	+
High supp/high conflict and good relationship with at least one parent	1.00		0.97		1.02		0.99		1.01	
Low Marital Quality and good relationship with at least one parent	1.00		0.96		1.04		1.00		1.01	
High Marital Quality and bad relationship with parents	1.09	*	1.10		1.08		1.05		1.18	*
Low Marital Quality and bad relationship with parents	1.10	**	1.03		1.17	***	1.10	*	1.12	
Marital Characteristics										
2 bio parents married	0.96		0.98		0.93		n/a		n/a	
Length of Marriage										
Married 0 -9 years	1.05		0.98		1.12		1.06		1.00	
Married 10 - 19 years	0.99		0.94		1.04		1.03		0.89	
Married 20 - 29 years	1.00		0.90		1.11		1.03		0.93	
Married 30 plus years	ref		ref		ref		ref		ref	
Experienced marital disruption between 1997 and 1999	1.10	***	1.14	***	1.07	*	1.09	***	1.12	***
Family Characteristics										
Family Income										
Income to Poverty less than 100%	1.02		0.98		1.05		1.03		1.02	
Income to Poverty 100% - 199%	1.02		1.02		1.01		1.03		1.02	
Income to Poverty 200% - 399%	ref		ref		ref		ref		ref	
Income to Poverty 400% plus	1.00		1.00		1.00		1.00		1.00	
Missing Income information	1.01		1.01		1.00		1.01		1.04	

	Full Sample Early Sex (by age 16)		Male Early Sex (by age 16)		Female Early Sex (by age 16)		Two bio parents married Early Sex (by age 16)		Step-families Early Sex (by age 16)	
	N= 3316		N= 1736		N= 1580		N= 2386		N= 930	
	OR	sig	OR	sig	OR	sig	OR	sig	OR	sig
Number of Siblings	0.99	*	1.00		0.97	***	0.98	**	0.99	
Bio Mom's age at Youth's birth										
Less than 20 old	1.06	**	1.02		1.10	***	1.08	*	1.03	
20-29 years old	ref		ref		ref		ref		ref	
30 - 39 years old	1.01		1.03		0.99		1.02		0.95	
40 plus years	1.32	***	1.22	*	1.57	***	1.36	***	1.21	
Parental employment										
Neither Parent employed	0.99		0.98		1.01		0.94		1.02	
One Parent employed	ref		ref		ref		ref		ref	
Both Parents employed	1.00		1.00		1.00		1.00		0.95	
Highest Parental education										
Less than high school	1.11	***	1.14	***	1.08		1.12	***	1.07	
High School graduate	1.05	*	1.05		1.06		1.06	**	1.01	
Some College	1.06	**	1.03		1.09	***	1.07	***	1.01	
College or more	ref		ref		ref		ref		ref	
Parental Involvement in School	1.00		1.01		1.00		1.01		0.98	
Family Religious Activities at age 16	0.90	***	0.92	***	0.89	***	0.90	***	0.89	***
Adolescent Characteristics										
Adolescent Age	0.98	*	0.99		0.97	*	0.98		0.96	*
Adolescent Gender (1=Female)	0.94	***	n/a		n/a		0.48	***	0.96	
Race/Ethnicity										
Black, non-Hispanic	1.07	***	1.14	***	1.00		1.05		1.11	***
Hispanic	1.02		1.04		1.00		1.03		0.98	
White, non-Hispanic/Other	ref		ref		ref		ref		ref	
Adolescent lies or cheats	1.07	***	1.10	***	1.05	*	1.07	***	1.10	***
Adolescent has a disability	1.00		0.98		1.01		1.01		0.96	
Peer Characteristics										
Positive Peer behavior index	1.00		0.99		1.01		1.01		0.99	

	Full Sample Early Sex (by age 16)		Male Early Sex (by age 16)		Female Early Sex (by age 16)		Two bio parents married Early Sex (by age 16)		Step-families Early Sex (by age 16)	
	N= 3316		N= 1736		N= 1580		N= 2386		N= 930	
	OR	sig	OR	sig	OR	sig	OR	sig	OR	sig
Negative Peer behavior index	1.10	***	1.08	***	1.11	***	1.10	***	1.09	***
Environmental Characteristics										
Region										
Midwest	1.04		1.09	**	0.98		1.02		1.08	
South	1.05	*	1.09	***	1.01		1.05		1.05	
West	0.99		1.03		0.94		1.00		0.96	
Northeast	ref		ref		ref		ref		ref	
Lives in Urban area	1.02		1.05		0.99		1.01		1.02	
Physical Environment Risk Index	1.04	***	1.05	***	1.02	**	1.03	***	1.05	***

Note: $p < .10 = +$; $p < .05 = *$; $p < .01 = **$; $p < .001 = ***$
Source: Analyses of the National Longitudinal Survey of Youth - 1997

For youth that live in step-parent families, it appears that the disconnect between parent marital quality and parent-adolescent relationship may be the greatest risk factor. Compared to youth reporting a high quality relationship with both parents and a high marital quality between parents, the odds of sexual initiation by age 16 were significantly higher for those who reported a high parent marital quality but a) had a positive relationship with only one parent (profile 2, OR=1.09, p<1.10) or b) had a negative relationship with both parents (profile 5, OR=1.18, p<.05).

Sexual Initiation by Age 18. We turn next to the odds of engaging in sex by age 18, which can be thought of as a measure of whether or not a youth avoids the risks of having sex until age 18 (or possibly later) (Table 3).

Table 3. Multivariate Logistic Regression Models for Parent Marital Quality Parent-Adolescent Relationships, and Additional Covariates Predicting to Delay Sex until age 18 for the full sample, gender sub-groups, and marital status subgroups (NLSY-97).

	Full Sample Sex by age 18		Male Sex by age 18		Female Sex by age 18		Two bio parents married Sex by age 18		Step-families Sex by age 18	
	N= 3316		N= 1736		N= 1580		N= 2386		N= 930	
	OR	sig	OR	sig	OR	sig	OR	sig	OR	sig
Marital Quality and Parent Adolescent Relationship Groups										
High Marital Quality and good relationship with both parents	ref		ref		ref		ref		ref	
High Marital Quality and good relationship with one parent	1.05	*	1.04		1.08	*	1.06		1.02	
High supp/high conflict and good relationship with at least one parent	1.03		1.02		1.05		1.04		0.99	
Low Marital Quality and good relationship with at least one parent	1.02		0.98		1.07	+	1.03		0.98	
High Marital Quality and bad relationship with parents	1.03		1.04		1.01		1.02		1.05	
Low Marital Quality and bad relationship with parents	1.08	+	0.99		1.17	***	1.09	+	1.02	
Marital Characteristics										
2 bio parents married	0.99		1.00		0.98		n/a		n/a	
Length of Marriage										
Married 0 -9 years	1.06		0.91		1.22	**	1.02		1.10	
Married 10 - 19 years	0.98		0.86	*	1.12		0.96		1.00	
Married 20 - 29 years	0.97		0.84	**	1.13		0.95		1.01	
Married 30 plus years	ref		ref		ref		ref		ref	
Experienced marital disruption between 1997 and 1999	1.04	*	1.06		1.03		1.04		1.04	
Family Characteristics										
Family Income										
Income to Poverty less than 100%	1.00		0.99		0.99		1.02		0.98	
Income to Poverty 100% - 199%	1.04		1.05		1.01		1.06		1.01	
Income to Poverty 200% - 399%	ref		ref		ref		ref		ref	
Income to Poverty 400% plus	1.00		1.00		1.00		1.00		1.00	
Missing Income information	1.02		1.03		1.01		1.01		1.06	

	Full Sample Sex by age 18		Male Sex by age 18		Female Sex by age 18		Two bio parents married Sex by age 18		Step-families Sex by age 18	
	N= 3316		N= 1736		N= 1580		N= 2386		N= 930	
	OR	sig	OR	sig	OR	sig	OR	sig	OR	sig
Number of Siblings	0.99		1.00		0.99		0.99		1.00	
Bio Mom's age at Youth's birth										
Less than 20 old	1.03		1.04		1.02		1.06		1.00	
20-29 years old	ref		ref		ref		ref		ref	
30 - 39 years old	0.99		1.00		0.97		0.99		0.97	
40 plus years	1.13		1.06		1.22		1.12		1.08	
Parental employment										
Neither Parent employed	1.04		1.07		1.03		1.02		1.08	
One Parent employed	ref		ref		ref		ref		ref	
Both Parents employed	1.01		1.02		0.99		1.02		0.98	
Highest Parental education										
Less than high school	1.11	***	1.13	***	1.08		1.14	***	1.03	
High School graduate	1.04		1.08	**	1.00		1.03		1.04	
Some College	1.07	***	1.06	*	1.07	*	1.09	***	0.99	
College or more	ref		ref		ref		ref		ref	
Parental Involvement in School	1.00		1.00		1.00		0.99		1.00	
Family Religious Activities at age 16	0.94	***	0.96		0.92	***	0.93	***	0.96	
Adolescent Characteristics										
Adolescent Age	0.95	***	0.96	***	0.94	***	0.94	***	0.96	*
Adolescent Gender (1=Female)	0.95	***	n/a		n/a		0.94	***	0.96	
Race/Ethnicity										
Black, non-Hispanic	1.06	***	1.08	**	1.03		1.10	***	1.00	
Hispanic	1.01		1.05		0.98		1.01		1.01	
White, non-Hispanic/Other	ref		ref		ref		ref		ref	
Adolescent lies or cheats	1.03	**	1.05	**	1.01		1.03		1.06	***
Adolescent has a disability	0.99		1.01		0.96		1.00		0.95	
Peer Characteristics										
Positive Peer behavior index	1.01		1.00		1.01		1.02		0.99	

	Full Sample Sex by age 18		Male Sex by age 18		Female Sex by age 18		Two bio parents married Sex by age 18		Step-families Sex by age 18	
	N= 3316		N= 1736		N= 1580		N= 2386		N= 930	
	OR	sig	OR	sig	OR	sig	OR	sig	OR	sig
Negative Peer behavior index	1.05	***	1.06	***	1.05	***	1.06	***	1.05	***
Environmental Characteristics										
Region										
Midwest	1.01		1.04		0.99		1.01		1.02	
South	1.03		1.03		1.04		1.01		1.07	
West	0.99		0.99		1.01		0.98		1.03	
Northeast	ref		ref		ref		ref		ref	
Lives in Urban area	0.98		1.02		0.94	*	0.99		0.97	
Physical Environment Risk Index	1.02	**	1.02		1.02		1.02		1.03	***

Note: p<.10=+ ; p < .05 = * ; p < .01 = **; p < .001 = ***
Source: Analyses of the National Longitudinal Survey of Youth - 1997

Overall, the influence of relationship factors within the family on sexual engagement by age 18 is less clear than the influence they had on sex by age 16. For the full sample, only youth in profiles 2 (OR= 1.05, p<.05) and 6 (OR=1.08, p<.10) have significantly increased odds of waiting until age 18 compared to youth in profile 1 for whom both the adolescent parent relationship and the parent marital relationship were both positive. Given that profile 2 reflects youth in high marital quality families and profile 6 reflects youth in low marital quality families, and given that the influence of a negative adolescent relationship with one or both parents is significant for profiles 2 and 6 but not for profile 5, the implications of these results are difficult to interpret.

Similar to results for onset of sexual activity by age 16, relationship factors did not have a significant influence on initiation of sex by age 18 for males. Among female adolescents, the odds of engaging in sexual activity were significantly higher for those in profile 6, that is, reporting both negative relationships with both parents and a poor marital quality between the parents—again, similar to the odds of initiating sexual activity by age 16. In addition, the odds of engaging in sexual activity by age 18 were modestly higher for those in profile 2 (OR=1.08, p<.05) and profile 5 (OR=1.07, p<.10). Relationship qualities had relatively little influence on the odds of engaging in sexual activity by age 18 when looking separately at adolescents living with both biological parents and adolescents living in step-parent families.

Unprotected Sex in Mid Teens. For the measure of engaging in risky sexual behavior by age 16, we focus on the odds of engaging in unprotected sex outside a formal union (that is marriage or cohabitation) between the ages of 14 and 16. For the full sample of adolescents, the odds of having unprotected sex in the mid teens was significantly higher for both profiles characterized by a negative relationship with both parents—that is, profiles 5 and 6. However, the negative influence is much larger for profile 5 (OR=1.13, p<.001) than for profile 6 (OR=1.07, p<.05) (Table 4). This suggests that the risks associated with having a negative relationship with both parents may be intensified when that adolescent perceives an incongruence across relationships—that is, perceiving a negative between negative relationship with his or her parents but a positive relationship between the parents. Low marital quality, as depicted in profile 4, does not appear to significantly increase the odds of adolescents engaging in unprotected sex, implying that the adolescent-parent relationship is a more important influence on sexual risk taking compared to parent marital quality.

Table 4. Multivariate Logistic Regression Models for Parent Marital Quality Parent-Adolescent Relationships, and Additional Covariates Predicting to Risky Sex by age 16 for the full sample, gender sub-groups, and marital status subgroups (NLSY-97).

	Full Sample Risky Sex by age 16		Male Risky Sex by age 16		Female Risky Sex by age 16		Two bio parents married Risky Sex by age 16		Step-families Risky Sex by age 16	
	N= 3316		N= 1736		N= 1580		N= 2386		N= 930	
	OR	sig	OR	sig	OR	sig	OR	sig	OR	sig
Marital Quality and Parent- Adolescent Relationship Groups										
High Marital Quality and good relationship with both parents	ref		ref		ref		ref		ref	
High Marital Quality and good relationship with one parent	0.98		0.98		1.00		0.97		1.01	
High supp/high conflict and good relationship with at least one parent	1.01		1.00		1.02		1.02		0.97	
Low Marital Quality and good relationship with at least one parent	1.00		1.00		0.99		0.98		1.05	
High Marital Quality and bad relationship with parents	1.13	***	1.16	***	1.08		1.07		1.24	***
Low Marital Quality and bad relationship with parents	1.07	*	1.04		1.09	*	1.08	*	1.04	
Marital Characteristics										
2 bio parents married	0.98		0.97		0.98		n/a		n/a	
Length of Marriage										
Married 0 -9 years	1.00		0.96		1.07		1.02		0.95	
Married 10 - 19 years	0.97		0.95		1.00		1.00		0.92	
Married 20 - 29 years	0.97		0.93		1.01		1.00		0.85	
Married 30 plus years	ref		ref		ref		ref		ref	
Experienced marital disruption between 1997 and 1999	1.07	***	1.02		1.12	***	1.05	*	1.08	***
Family Characteristics										
Family Income										
Income to Poverty less than 100%	0.96		0.96		0.97		1.00		0.87	**
Income to Poverty 100% - 199%	0.98		0.98		0.98		1.00		0.93	
Income to Poverty 200% - 399%	ref		ref		ref		ref		ref	
Income to Poverty 400% plus	1.00		0.98		1.00		1.00		0.99	
Missing Income information	0.99		0.99		0.97		1.01		0.94	

	Full Sample Risky Sex by age 16		Male Risky Sex by age 16		Female Risky Sex by age 16		Two bio parents married Risky Sex by age 16		Step-families Risky Sex by age 16	
	N= 3316		N= 1736		N= 1580		N= 2386		N= 930	
	OR	sig	OR	sig	OR	sig	OR	sig	OR	sig
Number of Siblings	0.99	*	1.00		0.99	*	0.99	*	0.99	
Bio Mom's age at Youth's birth										
Less than 20 old	1.00		0.99		1.02		1.01		1.00	
20-29 years old	ref		ref		ref		ref		ref	
30 - 39 years old	1.01		1.03		1.00		1.01		1.01	
40 plus years	1.16	**	1.15	*	1.15		1.19	***	1.02	
Parental employment										
Neither Parent employed	1.02		0.96		1.06		0.97		1.07	
One Parent employed	ref		ref		ref		ref		ref	
Both Parents employed	1.01		1.00		1.02		1.01		1.00	
Highest Parental education										
Less than high school	1.06	***	1.07	***	1.04		1.06	**	1.06	
High School graduate	1.04	*	1.05	*	1.02		1.04	**	1.02	
Some College	1.05	***	1.06	**	1.05	*	1.04	**	1.08	
College or more	ref		ref		ref		ref		ref	
Parental Involvement in School	1.01		1.01		1.01		1.01		1.01	
Family Religious Activities at age 16	0.95	***	0.98		0.92	***	0.94	***	0.98	
Adolescent Characteristics										
Adolescent Age	0.99		1.01		0.97	***	1.00		0.97	*
Adolescent Gender (1=Female)	1.03	**	n/a		n/a		1.01		1.07	**
Race/Ethnicity										
Black, non-Hispanic	0.99		0.99		1.00		1.00		0.98	
Hispanic	1.01		1.01		1.03		1.03		0.98	
White, non-Hispanic/Other	ref		ref		ref		ref		ref	
Adolescent lies or cheats	1.05	***	1.05	***	1.04	***	1.04	***	1.07	***
Adolescent has a disability	0.99		0.98		1.00		0.98		1.03	
Peer Characteristics										
Positive Peer behavior index	1.00		0.99		1.01		1.01		0.98	

19

	Full Sample Risky Sex by age 16		Male Risky Sex by age 16		Female Risky Sex by age 16		Two bio parents married Risky Sex by age 16		Step-families Risky Sex by age 16	
	N= 3316		N= 1736		N= 1580		N= 2386		N= 930	
	OR	sig	OR	sig	OR	sig	OR	sig	OR	sig
Negative Peer behavior index	1.05	***	1.02		1.08	***	1.04	***	1.06	***
Environment Characteristics										
Region										
Midwest	1.01		1.01		1.01		1.00		1.02	
South	1.01		0.99		1.03		1.01		0.99	
West	0.99		0.98		1.01		1.00		0.96	
Northeast	ref		ref		ref		ref		ref	
Lives in Urban area	1.01		1.04	*	0.97		1.00		1.01	
Physical Environment Risk Index	1.02	***	1.03	***	1.02		1.01		1.04	***

Note: p<.10=+ ; p < .05 = * ; p < .01 = **; p < .001 = ***
Source: Analyses of the National Longitudinal Survey of Youth - 1997

As with other outcomes studied here, patterns differed by gender and for adolescents living with both biological parents versus living with a step-parent. Among male adolescents, the profile at greatest risk for engaging in unprotected sex was profile 5—those reporting both a negative relationship with both parents and a positive marital quality between the parents (OR=1.16, p<.001). The odds for the other profiles were not significantly different from the reference group. In contrast, for adolescent girls, the profile at greatest risk was profile 6—those reporting both a negative relationship with both parents and a negative marital relationship between the parents, although the relationship was not as strong (OR=1.09, p<.05). Results for adolescent living with both biological parents were similar to those for adolescent girls, with odds that were only significantly higher for profile 6, and only modestly so (OR=1.08, p<.05). Among adolescents living with a step-parent, the results were similar to those reported above for

adolescent boys, with a increase in risk associated with profile 5 (negative relationship with parents and positive marital relationship between parents) being highly significant (OR=1.24, p<.001). Across all groups of adolescents, it remains true that a negative relationship with both parents is a risk factor while a poor marital quality between the parents is not.

Unprotected Sex in the Late Teens. The results presented in Table 5 provide no support for the hypothesis that risky sexual behavior between age 17 and 20 is influenced by the quality of these relationships. The odds of risky sex during the later teen years did not differ significantly from those in the reference group, regardless of parent marital quality or adolescent-parent relationship. There also were no differences among male and female or between youth in bio-married parent families and step- parent families.

Table 5. Multivariate Logistic Regression Models for Parent Marital Quality Parent-Adolescent Relationships, and Additional Covariates Predicting to Risky sex by age 20 for the full sample, gender sub-groups, and marital status subgroups (NLSY-97).

	Full Sample	Male	Female	Two bio parents married	Step-families
	Risky Sex by age 20	Risky Sex by age 20	Risky Sex by age 20	Risky Sex by age 20	Risky Sex by age 20
	N= 3316 OR sig	N= 1736 OR sig	N= 1580 OR sig	N= 2386 OR sig	N= 930 OR sig
Marital Quality and Parent- Adolescent Relationship Groups					
High Marital Quality and good relationship with both parents	ref	ref	ref	ref	ref
High Marital Quality and good relationship with one parent	1.02	1.01	1.03	1.01	1.02
High supp/high conflict and good relationship with at least one parent	0.99	0.98	1.01	1.00	0.91
Low Marital Quality and good relationship with at least one parent	1.00	0.97	1.03	0.98	1.04
High Marital Quality and bad relationship with parents	1.03	1.03	1.04	0.96	1.12
Low Marital Quality and bad relationship with parents	1.01	1.03	1.01	1.02	0.97

	Full Sample		Male		Female		Two bio parents married		Step-families	
	Risky Sex by age 20		Risky Sex by age 20		Risky Sex by age 20		Risky Sex by age 20		Risky Sex by age 20	
	N= 3316		N= 1736		N= 1580		N= 2386		N= 930	
	OR	sig	OR	sig	OR	sig	OR	sig	OR	sig
Marital Characteristics										
2 bio parents married	0.94	*	0.95		0.94		n/a		n/a	
Length of Marriage										
Married 0 -9 years	1.03		1.07		0.99		1.08		0.93	
Married 10 - 19 years	1.02		1.04		1.00		1.05		0.96	
Married 20 - 29 years	1.03		1.05		1.02		1.06		0.92	
Married 30 plus years	ref		ref		ref		ref		ref	
Experienced marital disruption between 1997 and 1999	1.02		1.02		1.02		1.05		1.01	
Family Characteristics										
Family Income										
Income to Poverty less than 100%	0.95		0.95		0.95		0.95		0.93	
Income to Poverty 100% - 199%	0.93	*	0.93		0.91		0.93		0.92	
Income to Poverty 200% - 399%	ref		ref		ref		ref		ref	
Income to Poverty 400% plus	0.95		0.99		0.90	***	0.96		0.92	
Missing Income information	0.96		0.94		0.97		0.94		0.99	
Number of Siblings	1.00		0.99		1.00		1.00		0.99	
Bio Mom's age at Youth's birth										
Less than 20 old	1.02		1.01		1.02		1.01		1.02	
20-29 years old	ref		ref		ref		ref		ref	
30 - 39 years old	0.92	***	0.92	**	0.93	*	0.92	***	0.96	
40 plus years	1.11		1.10		1.15		1.12		1.10	
Parental employment										
Neither Parent employed	1.02		1.03		1.01		1.09		0.97	
One Parent employed	ref		ref		ref		ref		ref	
Both Parents employed	1.02		1.02		1.03		1.02		1.05	
Highest Parental education										
Less than high school	1.00		1.02		0.98		1.02		0.95	
High School graduate	1.00		1.01		0.99		1.00		0.97	
Some College	1.03		1.03		1.03		1.03		0.99	
College or more	ref		ref		ref		ref		ref	
Parental Involvement in School	0.99		0.99		0.99		0.99		0.98	

| | Full Sample | | Male | | Female | | Two bio parents married | | Step-families | |
| | Risky Sex by age 20 | | Risky Sex by age 20 | | Risky Sex by age 20 | | Risky Sex by age 20 | | Risky Sex by age 20 | |
	N= OR	3316 sig	N= OR	1736 sig	N= OR	1580 sig	N= OR	2386 sig	N= OR	930 sig
Family Religious Activities at age 16	0.85	***	0.89	***	0.83	***	0.86	***	0.84	***
Adolescent Characteristics										
Adolescent Age	0.99		1.02		0.95	***	0.99		0.98	
Adolescent Gender (1=Female)	1.05	**	n/a		n/a		1.04	*	1.05	
Race/Ethnicity										
Black, non-Hispanic	0.99		0.99		1.00		0.98		0.99	
Hispanic	0.99		1.04		0.95		0.99		0.99	
White, non-Hispanic/Other	ref		ref		ref		ref		ref	
Adolescent lies or cheats	1.09	***	1.11	***	1.07	***	1.10	***	1.06	*
Adolescent has a disability	0.97		0.94		1.00		0.98		0.96	
Peer Characteristics										
Positive Peer behavior index	1.01		1.01		1.02		1.02		1.00	
Negative Peer behavior index	1.05	***	1.03		1.07	***	1.05	***	1.05	**
Environment Characteristics										
Region										
Midwest	1.01		1.02		1.01		1.03		0.97	
South	1.05	*	1.04		1.08	*	1.06		1.05	
West	1.00		0.95		1.06		1.02		0.96	
Northeast	ref		ref		ref		ref		ref	
Lives in Urban area	1.00		1.00		0.99		1.00		1.01	
Physical Environment Risk Index	1.01		1.02		0.99		1.01		1.01	

Note: p<.10=+ ; p < .05 = * ; p < .01 = **; p < .001 = ***
Source: Analyses of the National Longitudinal Survey of Youth - 1997

Other Characteristics of Parents' Marriage and Influence on Adolescents' Sexual Activity

In addition to estimating the influence of parents' marital quality on adolescents' sexual activity, our analyses also controlled for marital stability—that is, the length of the parents' marriage, whether the parents experienced a marital disruption subsequent to round 1, and whether the adolescent lived with both biological parents versus a step parent.

Tables 2 through 5 show that marital disruption among parents subsequent to round 1 significantly increased the odds of early sexual initiation consistently for all groups of adolescents, although the influence was weakest for adolescent girls: Full Sample, OR=1.10, p<.001; Adolescent Boys, OR=1.14, p<.001; Adolescent Girls, OR=1.07, p<.05; Bio Family, OR=1.09, p<.001; Step-Family, OR=1.12, p<.001. The influence of a marital disruption on the odds of engaging in unprotected sex by age 16 was similar, although in this case the influence for adolescent boys was weakest: Full Sample, OR=1.07, p<.001; Adolescent Boys, OR=1.02, p>1.10; Adolescent Girls, OR=1.12, p<.001; Bio Family, OR=1.05, p<.05; Step Family, OR=1.08, p<.001). The other measures characterizing the parents' marriage did not have a significant influence on the odds of having sex by age 16 or having unprotected sex by age 16.

Marital disruption generally had little or no influence on sexual behaviors during the later teen years (sex by age 18 and unprotected sex between age 17 and 20), with the exception that the increase in odds of having sex by age 18 was modestly significant among the full sample (OR=1.04, p<.05). Length of marriage did influence the odds of having sex by age 18 for both the sample of adolescent boys and adolescent girls, although in different directions, with shorter marriages being associated with lower odds of sex by 18 for boys, and higher odds for girls. While the meaning of this finding is not entirely clear, one possible hypothesis is that boys who spend their early childhood with both biological parents and later transitioned to a step-parent

family are better off than boys who transitioned to a step-parent family during early childhood, while the opposite would be true for girls.

In general, however, the results presented so far provide some but only limited support for the hypothesis that adolescents' sexual behaviors are influenced by the positive or negative attributes they observe in their parents' relationships. We had anticipated that adolescent sexual activity and the extent to which it is influenced by family characteristics might differ substantially between adolescents living with two biological parents versus those living with a step parent. Surprisingly, the simple variable controlling for biological versus step-parent families did not yield significant differences in adolescent sexual activity between these two family types in the full model. However the models run separately for each of these family types did yield some interesting possible ideas about differences in how adolescents are influenced by their bio and step parent marital relationships. Unfortunately the sample sizes in the NLSY97 are to small to run models that look at these relationships by bio-married and step-parent families for males and females separately.

Influence of Other Family Characteristics on Adolescent Sexual Activity

Our estimates also controlled for the influence of several other family characteristics. These include ratio of family income to the poverty threshold, number of siblings, age of biological mother when adolescent was born, whether one, both or neither parent is employed, highest level of parental education, parental involvement in school, and family participation in religious activities.

In general, family participation in religious activity at age 16 was one of the most broadly influential protective factors against risky sexual behaviors. For example, among the full sample, it significantly reduced the odds of having early sex (OR=.90, p<001), of having sex by

25

age 18 (OR=.94, p<.001) of unprotected sex outside a formal union between the age of 14 and 16 (OR=0.95, p<.001) and of having unprotected sex from age 17 to 20 (OR=0.85, p<.001). The significance influence of family participation in religious activity was consistent across results for adolescent girls, adolescent boys, and adolescents living in both bio and step-parent families

Tables 2 through 5 also show that the influence of families' socio-economic characteristics was mixed. With very few exceptions, the influence of parents' income and parents' employment was insignificant across the sexual behaviors examined here and across adolescent groups. In contrast, mother's education influenced every outcome except engaging in unprotected sex between age 17 and 20. Not surprisingly, lower levels of mothers' education are associated with higher odds of engaging in sexual behaviors for every group and this influence tended to be true for each group of adolescents, although the effect was less prevalent and less significant among adolescent girls. influenced any of the sexual outcomes examined here for any adolescent group.

With respect to the influence of mothers' age when the adolescent was born, the odds of sexual behavior were typically higher both for adolescents whose mothers were much younger than the reference group (that is, under age 20), or much older (that is, age 40 plus), however the significance of results varied greatly by outcome and across groups of adolescents. This pattern held true for the influence of mothers' age on the odds of initiating sex by age 16 when estimated for the full sample, for adolescent girls and for adolescents living with both biological parents. The pattern was also generally true for adolescent boys, however, the odds of engaging in sex by age 16 were significantly higher only for those whose mothers were age 40 plus. Similarly, this pattern held generally true when estimating the odds of engaging in unprotected sex by age 16 but, again, the results were only significant for adolescents (of any group) whose mothers were

26

age 40 plus when they were born, and only for the full sample, for adolescent boys and for adolescents living with both biological parents. The one strong exception to this pattern can be found in Table 5, showing the odds ratios for engaging in unprotected sex between the age of 17 and 20. The odds of engaging in this behavior were significantly *lower* for adolescents whose mothers were age 30 to 39 when they were born, and this is true for the full sample, for adolescent boys, girls and those living with both biological parents. More research is needed to fully understand this finding.

Lastly there was a slight but significant protective effect of having more siblings for decreasing the odds of having early and unprotected sex in the mid teen years. The effect was strongest for females but also showed in the full sample and in the youth from bio-married parent families.

Influence of Adolescent Characteristics, Peer Behaviors, and Other Risks

The model included measures of several adolescent and peer characteristics. These include adolescent's age, gender, race/ethnicity, whether the adolescent reports lying or cheating, and disability status. Also in the model are indices of both positive and negative peer behaviors.

The odds ratios for gender are informative in that they show the simple difference in likelihood of engaging in various sexual behaviors net of controls, as opposed to the full models run separately by gender (discussed above), which indicate how each factor affects those odds differently by gender. Not surprisingly as noted above, adolescent sexual activity was significantly different among boys than among girls and this difference was not always in the same direction. For example, the odds of risky sexual behavior (having unprotected sex outside a formal union) were higher for girls than for boys net or controls, both during the mid and the

later teen years. In contrast, the odds of having sex by age 16 and the odds of having sex by age 18 are decreased for girls compared to boys net of controls.

The results on abstinence are consistent with national data showing higher levels of sexual activity and earlier ages of sexual initiation for boys as compared to girls. However, these results suggest that among those girls who do engage in sexual activity, they are more likely to do so under high-risk situations. The differences in outcomes by gender estimated here could either reflect the possibility that gender matters over and above the other factors controlled for in the model, or it could be an indication that the factors controlled for in the model may operate differently for boys than for girls.

The remaining demographic characteristics (age and race/ethnicity) did not influence the odds of engaging in risky sexual activity during the mid or later teen years, but did influence the odds of engaging in early sexual activity by age 16 and by age 18. For the full sample, the odds of engaging in early sex and sex by age 18 were highest among African American adolescents (OR= 1.07, p<.001 and OR=1.06, p<.001). Older youth at the time of the initial interview tended to have reduced odds of early or risky sexual activity indicating a possible cohort effect..

Not surprisingly, lying or cheating as reported by the adolescent significantly increased the odds of every sexual behavior examined here and the relationship was significant for nearly every adolescent group. For example, for the full sample, the odds ratios associated with lying or cheating were as follows: for early sexual behavior, OR=1.07, p<.001; for risky sexual behavior between age 14 and 16 OR=1.05, p<.001; for risky sexual behavior between age 17 and 20, OR=1.09, p<.001; and for sexual initiation by age 18, OR=1.03, p<.001. This pattern held true for the full sample, males, females and youth in bio and step parent families, with the

exception that results pertaining to the odds of having sex by age 18 were not statistically

significant for females and youth in bio-married families.

Negative peer behaviors were similarly a risk factor across the board. Increasing the

odds of early sex (OR=1.10, p>.001) and risky sexual behavior during the mid teen years

(OR=1.05, p<.001), increasing the odds or risky sexual behavior during the later teen years

(OR=1.05, p<.001), and decreasing the odds of sexual abstinence until age 18 (OR=0.95,

p<.001). Again this behavior predicted increased risk for all youth, males and females and youth

in bio-married and parent families While the field of researchers and practitioners often highlight

the value of focusing on indicators of positive as well as negative behaviors, the index of positive

behaviors among peers did not have any significant influence on adolescent sexual activity.

While the measure of negative peer influence is clearly significant, one could have

anticipated its magnitude of influence might have been even larger. The literature suggests that,

to some extent, family relationships and peer influences are countervailing forces (see, for

example, NAS 1987, Miller et al., 2001, Majumdar, 2003). That is, stronger family relationships

may reduce the influence of negative peer behaviors. Strong family relationships could also act

to reduce the influence of environmental risks (which were generally significant but of modest

magnitude). If this is true, the findings presented here may not fully capture the importance of

family relationships, particularly their role in buffering against outside risk factors. This will be

important to explore in future analyses.

DISCUSSION

This study finds modest support for the hypothesis that adolescents whose parents have a high

quality marital relationship and who have a positive relationship with their parents would have

lower odds of engaging in sex by age 16 and age 18, and lower odds of engaging in unprotected sex by age 16 and between age 17 and 20. However, based on these analyses, it appears that this influence operates primarily through the quality of relationship between the adolescent and parent, and to a lesser extent through the quality of the parents' marital relationship. Having a bad relationship with one or both of their parents increased the odds of early onset of sexual activity, of starting sexual activity by age 18 and of having unprotected sex in the mid-teen years. This was true for the full sample, males, females, youth in step-families and in bio-parent families, although not consistently for all categories. Marital quality did interact with the parent-child relationship in that having low marital quality and bad relationship with both parents was associated with increased odds of engaging in earlier sex and more risky behavior and sex by age 18. It also appears that children in step families may be at increased risk when perceived marital quality in high and parent-child relationships are poor.

As expected, we find significant differences between boys and girls in their odds of sexual activity and how sexual activity is influenced by family and other factors, but these differences point in many directions, perhaps raising more questions than answers. Differences between adolescents living with two biological parents versus those living with a step parent did exist, although they were not extensive. Whether these differences were an artifact of the sample size or of the marital status is unknown, but more characteristics, both family and adolescent, seemed to add protection or risk in bio-married parent families than in step-parent families. Marital disruption in early adolescence added risk at middle adolescents, but this analysis cannot distinguish if the disruption was in families with low-marital quality or in families where the adolescent at an earlier time perceived marital quality to be high.

This analysis confirms some of the previously identified findings regarding adolescent sexual behavior. Other research that has identified early sex as being more prevalent among boys than girls, and among African-American and Hispanic adolescents as compared to white non-Hispanic adolescents (see for example, results from the Youth Risk Behavior Survey cited in the Centers for Disease Control and Prevention, 2008a; and results from the National Survey of Family Growth cited in Abma et al, 2004) is supported in this study and it appears that while marriage may reduce risks, it does not eliminate them. Even within marriage, negative peer influences are significant and consistently increase the odds of risky behavior, yet the question remains whether their influence might be even stronger if it were not for the role played by family relationships. If the positive or negative relationships present with a family serve to weaken or strengthen the influence of peers, then the role of family relationships may be greater than what is captured in these estimations. Additionally, it would be fruitful to explore whether the findings that both young motherhood and older motherhood increase the risk of early and unsafe sex is related to parenting styles and monitoring behavior of parents.

It is intriguing that neither parents' marital relationship nor the youth-parent relationship had any significant influence on the odds of youth having unprotected sex during the later teen years, while the influence of family religious activity, individual character and peer influences measured in the early and mid teen years remained significant. Clearly the pathways to more responsible sexual behavior in young adulthood are complex and need further clarification.

References

Abma J., Martinez, G., Mosher, W., & Dawson, B. (2004) Teenagers in the United States:
Sexual activity, contraceptive use, and childbearing, 2002. National Center for Health
Statistics. Vital Health Stat 23(24).

Calhoun, D., & Friel, L. (2001). Adolescent sexuality: Disentangling the effects of family
structure and family context. *Journal of Marriage and Family, 63,* 669–681.

Centers for Disease Control and Prevention (2008a). Youth Risk Behavior Surveillance: United
States 2007. *Surveillance Summaries, 57,* 97.

Centers for Disease Control and Prevention (2008b). Oral Abstract D4a – Prevalence of Sexually
Transmitted Infections and Bacterial Vaginosis among Female Adolescents in the United
States: Data from the National Health and Nutritional Examination Survey (NHANES)
2003-2004. Online: retrieved 7/16/2008 at
http://www.cdc.gov/stdconference/2008/media/summaries-11march2008.htm#tues1

Chandra,A., Martinex, G., Mosher, W., Abma, J., & Jones, J. (2005). Fertility, family planning,
and reproductive health of U.S. women: data from the National Survey of Family
Growth. National Center for Health Statistics. *Vital and Health Statistics 25*, 63.

Coleman, M., Ganong, L. & Fine, M. (2000). Reinvestigating Remarriage: another decade of
progress. *Journal of Marriage & the Family*, *62,* 1288-1307.

Fruth, A., Longmore, M., Giordano, P, & Manning, W. (2005, April). The role of family
structure, family processes and family contention predicting adolescent sexual activity.
Paper presented at the annual meeting of the Population Association of America,
Philadelphia, Pennsylvania.

Guilamo-Ramos, V., Jaccard, J., Dittus, P., Gonzales, B., & Bouris, A. (2008). A conceptual framework for the analysis of risk and problem behaviors: The case of adolescent sexual behavior. *Social Work Research, 32*, 29–45.

Hair, E., Kaye, K., Day, R. & Orthner, D. (2009) Parent Marital Quality and the Parent-Adolescent Relationship: Profiles of Relationship Quality. *Marriage and Family Review*, Volume 45, Issue 2/3 (forthcoming, 2009).

Hair, E., Moore, K., Kaye, K., Day, R., & Orthner, D. (2009) Parent Marital Quality and the Parent-Adolescent Relationship: Effects on Adolescent and Young Adult Health Outcomes. Marriage and Family Review, Volume 45, Issue 2/3 (forthcoming, 2009).

Laksmana, T. (2003) The predictors of sexual behaviors and attitudes. *Perspectives in Psychology, Spring 2003*, 26–35.

Lansford, J., Ceballo, R., Abbey, A., & Stewart. A. (2001). Does family structure matter? A comparison of adoptive, two parent biological, single mother, stepfather and stepmother households. *Journal of Marriage and Family, 63*, 840–851.

Majumdar, D. (2003, August). Understanding the dimensions of parental and peer influence on risky sexual behavior among adolescents. Paper presented at the annual meeting of the American Sociological Association, Atlanta, GA. Online: Retrieved 7/16/2008 from http://www.allacademic.com//meta/p_mla_apa_research_citation/1/0/6/5/2/pages106523/p106523-1.php.

Miller, B., Benson, B., & Galbraith, K. (2001). Family relationships and adolescent pregnancy risk: A research synthesis. *Developmental Review, 21*, 1–38.

Miller, B., & Moore, K. (1990). Family research in the 1980s: The decade in review. *Journal of Marriage and the Family,* 52, 1025–1044.

Moore, K., Miller, B., Glei, D., & Miller, & Morrison, D. (1995). Adolescent sex, contraception

    and childbearing: A review of recent research. Report submitted by Child Trends to the

    Office of the Assistant Secretary of Planning and Evaluation, U.S. Department of Health

    and Human Services.

National Academy of Sciences. (1987). Determinants of sexual behavior and decision making. In

    C. Hayes (Ed.), *Risking the future: Adolescent sexuality, pregnancy and childbearing* (pp.

    95-122. (Washington, DC: National Academy Press).

Rostosky, S., Wilcox, B., Wright, M., & Randall, B. (2004). The impact of religiosity on

    adolescent sexual behavior. *Journal of Adolescent Research, 19*, 677–697.

Ventura, S. J., Abma, J. C., Mosher, W. D., & Henshaw S. K. (2008). Estimated pregnancy rates

    by outcome for the United States, 1990–2004. *National Vital Statistics Reports, 56*(15),

    8-9.