



Adolescents' involvement in non-romantic sexual activity[☆]

Wendy D. Manning,^{*} Monica A. Longmore,
and Peggy C. Giordano

Department of Sociology, Bowling Green University, 222 Williams Hall, Thurstin Street, Bowling Green, OH 43403, USA

Available online 30 November 2004

Abstract

The majority of teens are having sex, however, we know little about sex that occurs outside the traditional dating context and the factors associated with these non-romantic sexual experiences. Prior work indicates that healthy sexual behaviors depend on the relationship context of sexual intercourse, but research on the characteristics of teens who engage in non-romantic sex is limited. We use two waves of the National Longitudinal Study of Adolescent Health to analyze adolescents' reports of non-romantic sexual intercourse, and whether key protective and risk factors as well as normative orientations distinguish the context within which sexual activity occurs. We find that the majority of sexually active teens have had some sexual experience outside of a romantic relationship. We conclude that teenagers' sexual experiences are not static

[☆]This is a revised version of a paper presented at the Ninth Biennial Meeting of the Society for Research on Adolescence, April 11–14, 2002, New Orleans, Louisiana. We thank Susan Brown and Jean Gerard for their helpful comments. We appreciate Kathleen Lamb's capable research assistance. This research is supported by a grant from the National Institute of Child Health and Human Development (Grant HD36223). This research was also supported in part by the Center for Family and Demographic Research at Bowling Green State University, which has core funding from the National Institute of Child Health and Human Development (R21 HD042831-01). This research uses data from Add Health, a program project designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris, and funded by a Grant P01-HD31921 from the National Institute of Child Health and Human Development, with cooperative funding from 17 other agencies. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Persons interested in obtaining data files from Add Health should contact Add Health, Carolina Population Center, 123 W. Franklin Street, Chapel Hill, NC 27516-2524, USA (www.cpc.unc.edu/addhealth/contract.html).

^{*}Corresponding author.

E-mail address: wmannin@bgnet.bgsu.edu (W.D. Manning).

over time, because 60% of sexually active teenagers have had sex in *both* romantic and non-romantic contexts. Our multivariate analyses indicate that the teen's normative beliefs have significant effects on teenage non-romantic sexual activity. The traditional risk and protective factors often are not related to teens' decisions about sexual partners. These results have implications for our understanding and encouragement of healthy adolescent sexual behaviors.

© 2004 Elsevier Inc. All rights reserved.

Keywords: Adolescence; Dating; Relationships; Risk-taking; Sex

1. Introduction

The majority of teenagers report having sex during their high school years (Alan Guttmacher Institute, 1994; Warren et al., 1998), and as a result researchers are calling for more detailed conceptualizations of adolescent sexual activity (e.g., Miller et al., 1999; Santelli et al., 2001; Whitaker et al., 2000). Research that focuses on the meanings of sexual partners indicates that adolescents distinguish between types of sexual partners (Ellen et al., 1996), but sexual activity outside of a dating relationship is a little researched dimension of adolescent life. From a policy standpoint it may be useful to move beyond the issue of whether teens are having sex and focus on more refined understandings of sexual decision-making. Considering non-romantic sex is important because this context may present greater risks for teens regarding unplanned pregnancy and exposure to sexually transmitted infections (e.g., Ford et al., 2001; Manning et al., 2000; Norris et al., 1996; Ott et al., 2002). Moreover, non-romantic sex may be a potential springboard for longer-term problems associated with relationship patterns that lack commitment.

In this paper, we move away from conceptualizations of teenage sexual activity that simply note whether an adolescent is a virgin or non-virgin, or the date of most recent sexual intercourse. We consider the relationship context of sexual activity. To date, little attention has been paid to non-romantic sex and few researchers have employed national longitudinal data to understand the relationship context of adolescent sexual intercourse. Using the National Longitudinal Study of Adolescent Health, we address two questions: (1) What is the prevalence of non-romantic sex and (2) What factors predict this type of sexual involvement?

We draw on two theoretical frameworks to understand involvement in non-romantic sex. First, we apply a traditional risk/protective factors model. Adolescent sexual activity, in particular non-romantic sex, is often treated as a problem or risk behavior (Fortenberry, 2003; Harris et al., 2002). We apply a risk framework to determine whether the same factors that predict other adolescent risk behaviors predict non-romantic sex. Second, we explore the utility of a social learning perspective which emphasizes that variations in the normative climate within which sexual behaviors unfold may encourage or discourage non-romantic sexual behavior. We examine how the adolescents' own attitudes and perceived attitudes of family and peers influence the odds that an adolescent will become involved in non-romantic sex. Given that many aspects of sexual activity are gendered, and differ by developmental

period, we examine similarities and differences for boys and girls, and by age. We analyze adolescents' reports of sexual intercourse, and whether key protective and risk factors as well as normative beliefs distinguish the context within which sexual activity occurs.

2. Background

2.1. *Dating and sexual activity*

Prior work shows that for most adolescents, first sexual experience is associated with dating (e.g., Miller and Moore, 1990; Miller et al., 1997; Thornton, 1990). Dating provides a context and foundation for teenage sexual development. Only a small percentage of adolescents report having sex before ever dating (Cooksey et al., 2002; Longmore et al., 2001). Nevertheless, adolescents also have sex outside of dating relationships. Ellen et al. (1996) find that adolescents classify sexual partners into three substantively distinct groups: (1) steady partners, (2) casual partners or friends, and (3) 'one-night stands.' This suggests that teenagers distinguish sexual partners based largely on the romantic nature of the relationships. Thus, one "sensitizing concept" or core element missing from the bulk of research on adolescents' sexual experiences is the nature of the relationship (i.e., romantic or non-romantic) in which sex occurs.

One body of work that examines the context of sexual decision-making focuses on casual sex among college students (e.g., Herold et al., 1998; Maticka-Tyndale et al., 1998; Paul et al., 2000) or other adults (e.g., Cubbins and Tanfer, 2000; Hennik et al., 2000). Given the nature of adolescence, we expect that adolescent decision-making might differ from that of adults. Few studies examine *adolescents'* non-romantic sexual experiences.¹ There is some evidence, however, that significant numbers of adolescents engage in non-romantic sex. Analyses of the 1995 National Survey of Family Growth indicate that almost one-quarter (23%) of adolescent girls retrospectively reported their first sexual experience with someone whom they just met, with individuals with whom they were "just friends" or had gone out with "once in a while" (Elo et al., 1999; Manning et al., 2000). Yet these studies examining the relationship context of first sexual experience may not be indicative of later sexual experiences. It is unclear whether the 'non-relationship' sexual experience is a one-time occurrence, or if it is indicative of a pattern of sexual behavior that has long-term consequences for adolescents' physical health and socio-emotional development with respect to commitment and intimacy. Understanding adolescents' sexual lives requires taking into account the fluid nature of relationships and acknowledging the full array of their sexual experiences. Thus, prior work presents a limited view of the relationship context of teenagers' sexual experiences.

It is important to understand the relationship context of adolescent sexual experiences for at least two reasons. First, the short duration and lack of commitment

¹ The exception is research on adolescent girls' sexual abuse and exploitation (e.g., Nagy et al., 1994; Small and Kerns, 1993; Stevens-Simon and Reichart, 1994).

present in sexual relationships that occur outside of the traditional dating environment are associated with greater, long-term health risks. Individuals who engage in non-romantic sexual activity early on may be developing patterns of sexual interaction that will lead to negative health outcomes including unplanned pregnancy, sexually transmitted infections, and increased exposure to multiple partners (e.g., Ford et al., 2001; Manning et al., 2000; Norris et al., 1996; Ott et al., 2002). Specifically, Ford et al. (2001) find that teens make decisions about contraceptive methods based on the nature of the relationship with their sexual partners. Teens who have sex with romantic partners are more likely to use condoms and other contraceptive methods than teens who have sex with non-romantic partners.

Second, “patterns of sexual and intimate interactions are largely learned within the context of adolescent experiences, and these are likely to be extended into adulthood” (Weis, 1998, p. 122). A pattern of non-romantic sex may suggest that an adolescent is developing a dyadic attachment style that lacks intimacy and commitment. Furman and Simon (1999) argue that exposure to romantic relationships allows teenagers to develop important skills that help understand partners’ motivations and behavior. Furman and Simon (1999) contend that this more sophisticated reasoning may be facilitated by the development of romantic relationships during adolescence, rather than through a series of more fleeting sexual liaisons.

Often adolescent sexual experiences are characterized by simply assessing whether or not teens have engaged in sexual activity, ignoring the relational character of sexual interactions. Moreover, adolescent sexual experiences are extremely complex and involve numerous motivational factors, such as sexual identity, orientation, opportunity, experimentation, relationship characteristics, and desire (Giordano et al., 2001; Weis, 1998). It could be argued that teenagers in particular may engage in sexual intercourse outside of relationships because of their need to establish a sexual identity, the intensity of hormonal drives, or because the adolescent developmental stage involves experimentation.

2.2. Conceptual framework

Our conceptual framework integrates two approaches. First, to the degree that sexual behavior within a traditional dating relationship is considered more prosocial, it may be appropriate to conceptualize non-romantic sexual behavior as more risky. Thus, we draw upon both attachment and social control theories that emphasize the importance of risk and protective factors including demographic background, individual resources, parental socialization techniques, peer attachment, and school and neighborhood factors. Second, this risk and resilience approach may not offer a comprehensive framework, as it does not take into account the normative orientations of their social world. Thus, employing theories of social learning and reasoned action we also apply a normative beliefs perspective to understanding teens’ sexual behavior.

2.2.1. Traditional risk/protective factors

Scholarship on risk and protective factors emphasizes that adolescents’ sexual behavior is not isolated from the social environment in which adolescents live.

This approach emphasizes that adolescence is a stage in the life course when youth are exposed to an expanding and wider circle of influences including: peers (e.g., Giordano, 1995; Giordano et al., 1998), schools (e.g., Perry et al., 1993), and neighborhoods (e.g., Hagan and Foster, 2001). Both singularly and in various combinations, these domains present opportunities for the development and elaboration of protective and risk factors associated with adolescent sexual activity (Crockett and Petersen, 1993; Harris et al., 2002; Jessor, 1998). This suggests that adolescent sexual activity, both inside and outside dating and romantic relationships, is connected (in both positive and negative ways) with other social environments. We evaluate whether this traditional type of risk and resilience framework can be applied to teenage sexual activity. We review individual, parental, peer, school, and neighborhood influences that reflect these various environments.

2.2.1.1. Individual resources. The adolescent brings to each experience individual resources that act as risk and protective factors operating within the context of larger familial influences. These include self-esteem and intelligence. Based on prior research on the initiation of sexual activity, we expect that lower levels of self-esteem (Longmore et al., 2004) and less intelligence (Luthar et al., 2000) would be associated with a higher likelihood of experiencing non-romantic sex.

2.2.1.2. Parenting. Prior research has shown that parental socializing techniques that emphasize emotional support, firm but non-coercive control, and monitoring are associated with greater social competence among adolescents (Buehler and Gerard, 2002), as well as later timing of adolescents' sexual debut (Longmore et al., 2001). We argue that these same effective parenting techniques are likely to be related to lower odds of non-romantic sex. Even though adolescents are drawing away from their families, the level of parental warmth and caring has positive effects on well-being and sexual behaviors (e.g., Dittus and Jaccard, 2000; Jaccard et al., 1996). Closer relationships with parents and greater parental monitoring may reduce the opportunity for the development and exposure to cross-gender relationships. We expect that teens with less close relationships to their parents will be more likely to engage in sexual activity outside of the dating context.

2.2.1.3. Peer attachment. The intensity of peer attachment has implications for adolescents' psychological well-being as well as health promotion and health-risk behaviors (e.g., Crockett and Petersen, 1993; Hartup, 1996; Youniss and Smollar, 1985). There are some debates about the pathways through which friendship quality influences adolescent well-being (e.g., Berndt, 2002; Giordano et al., 1998). Yet, peer intimacy is associated with higher levels of competence (Burhmester, 1996), depression (Hecht et al., 1998), and school adjustment (Berndt and Keefe, 1995). Thus, from a traditional protective and risk factor perspective, we expect that lower levels of attachment to or caring about peers would be associated with a greater likelihood of involvement in non-romantic sex.

2.2.1.4. School and neighborhood contexts. Bronfenbrenner (e.g., Bronfenbrenner, 1986) emphasizes the interconnection between the person and environment and the notion that individual resources as well as parental influences that either foster or hinder risk cannot be understood separate from immediate and more distal social contexts. A conception of this kind includes a vast array of social circumstances including school and neighborhood factors (Brewster, 1994; Brewster et al., 1993; Gerard and Buehler, 2002; Hagan and Foster, 2001; Harris et al., 2002; Ku et al., 1993). Stronger social bonds, such as doing well in school (i.e., school attachment) and feeling safe (i.e., neighborhood attachment) should be related negatively to the odds of engaging in non-romantic sex.

2.2.2. Normative beliefs

Another perspective and supplement to the traditional risk and protective factors approach to adolescent problem behavior derives from social learning theories, and emphasizes that behavior is influenced by the normative climate in which it occurs. Through a continuous process of communication, individuals learn definitions of certain behaviors as either appropriate or inappropriate. We refer to this as the normative orientations approach to understanding adolescents' non-romantic sexual activity. In fact, Kirby (2001) reviews the vast adolescent risk-taking literature and advocates for a social norms framework to study adolescent sexual behavior.

2.2.2.1. Parents' and peers' normative beliefs. Social learning frameworks emphasize that social ties provide not only warmth or support (or lack of), but shared messages about attitudes and norms. We suggest that normative orientations are multi-fold with respect to sexual activity. Parents are an important source of continuing influence in this regard, but peers also contribute significantly and independently to the adolescent's normative climate. Adolescents' perceptions of peers' and parents' approval of sexual activity may play a particularly important role influencing choices about the relationship context of sexual activity. Thus, not only do relationships with significant others matter, but perceptions of parents' and peers' norms and beliefs also matter.

Empirical work supports this approach. For example, adolescent's perceptions of maternal approval of sexual activity is associated with the odds of engaging in sexual activity (Dittus and Jaccard, 2000; Jaccard et al., 1996). Our emphasis on perceptions is supported by recent findings that teen's perceptions of maternal attitudes have a greater influence on teenager's sexual behavior than their mother's actual views about sex (Dittus and Jaccard, 2000; Jaccard et al., 1998). Also researchers have assessed peer influences by examining respondents' reports of the sexual behavior of friends or by obtaining direct data on friends' sexual activity (e.g., Billy and Udry, 1985; Brazzell and Acock, 1988; East et al., 1993). We tap parents' and peers' normative orientations by using questions about adolescents' perceptions of parents' and peers' approval of sexual activity. We expect that positive peer and parental normative orientations regarding the adolescent's sexual activity will be associated with higher odds of non-romantic sex.

2.2.2.2. Adolescent's normative beliefs. Adolescents draw on parents and peers as guides to behavior, but these views are not fully determined by the definitions or meanings provided by others. Agency theorists such as Emirbayer and Goodwin (1994) emphasize that while individual's decisions draw heavily on social network inputs, the individual also has an important role. This is particularly the case when the referent is sexual decision-making, because sexual intercourse typically occurs outside the immediate purview of the adolescent's family or peers. Perhaps the most proximate predictor of an adolescent's behavior is his or her own beliefs or attitudes about a behavior (Fishbein and Ajzen, 1975). Teenagers' expectations and views about the benefits of sexual activity may play a particularly important role in determining whether they have sex with non-romantic partners. An adolescent's positive normative orientation regarding sexual activity is expected to increase the odds of engaging in non-romantic sex.

2.2.3. Sociodemographic background

Both the risk and protective factors and the normative orientation approaches incorporate sociodemographic factors that affect subsequent behavior. These types of variables represent the 'structuring' (Cullen, 1983) elements of adolescents' lives that determine the environment in which they are making decisions. Scholars note that age, gender, race, religion/religiosity, family structure, family size, household income, dating status, and parents' education influence adolescent sexual behavior (e.g., Brewster et al., 1998; Gleib, 1999; Moore et al., 1995). What is not known, however, is whether these same correlates of adolescent sexual activity distinguish sexual activity inside versus outside the confines of a traditional dating relationship. We may find that younger teenagers more often have non-romantic sexual experiences. Elo et al. (1999) report that girls whose first sexual intercourse is at younger ages are more likely to have had sex outside of the traditional dating relationship. We expect that men more often will have non-romantic sexual activity. Studies based on college students and adults indicate that men have more positive expectations and attitudes surrounding casual sex and are more likely to engage in casual sex than women (e.g., Chara and Kuennen, 1994; Cubbins and Tanfer, 2000; Herold and Mewhinney, 1993; Herold et al., 1998). Adolescents raised in families with higher socioeconomic status may be less likely to engage in non-romantic sexual behavior because their parents stable economic circumstances may allow them to be more supportive and better able to monitor their children's behavior. Teenagers from two biological parent families may be less likely to engage in non-romantic sexual activity because their adult models are in stable, presumably monogamous, relationships (Manning et al., 2000). Teens raised in religious families are expected to have lower odds of experiencing non-romantic sexual experiences because of the traditional emphasis on valuing virginity at marriage (Bearman and Bruckner, 2000).

2.3. Current investigation

Research on the nature and context of adolescents' sexual experiences is quite limited and narrow. Yet decisions about whom to have sex with are quite consequential

for adolescents' lives. We build on prior work in four key ways. Our initial goal is to assess the prevalence of non-romantic sexual intercourse using nationally representative data. We consider not only static dimensions of sexual activity via cross-sectional data, but also changes in the context of sexual experiences using longitudinal data. These findings will provide a greater understanding of adolescent sexual experiences. Our national estimates of adolescent non-romantic sexual behavior will provide groundwork for further research on adolescent health, risk-taking, and sexuality.

Second, we apply ideas from two theoretical approaches to our analysis of teenage non-romantic sexual behavior. We evaluate how factors associated with a traditional risk and protective factors framework influence the relationship context of sexual activity. Next, we examine how parental, peer, and individual normative orientations towards sex influence the relationship context of sexual activity. These findings will help place non-romantic sexual activity in the risk-taking as well as the social learning literatures, and provide a backdrop to address our second question regarding the predictors of non-romantic sex.

Third, prior work on the context of adolescent sexual activity often is limited to cross-sectional or retrospective data, but we avoid some potential temporal causality problems by using longitudinal data. Consequently, unlike many studies examining individual level factors, we can state *a priori*, a temporal causal order between the sociodemographic background, individual risk and protective factors, normative orientations and sexual activity. We evaluate how features of adolescents' lives measured at time 1 influence the relationship context of sexual activity within an 18-month time frame.

Fourth, we assess which predictors influence boys' and girls' decisions to have sexual intercourse within particular relationship contexts and whether there are differences by age. Gender differences in sexual attitudes and behavior, particularly surrounding casual sexual encounters, have been noted among college students or other adults (e.g., Chara and Kuennen, 1994; Cubbins and Tanfer, 2000; Ellen et al., 1996; Herold and Mewhinney, 1993; Herold et al., 1998). Studies have not examined gender and age differences (or similarities) among adolescents.

3. Data and methods

3.1. Data

We use the National Longitudinal Study of Adolescent Health (Add Health) to address our research questions. The Add Health is based on interviews with students in grades 7 through 12 and their parents in 1995. The first wave of the main in-home sample consists of 18,924 students. Accounting for design effects, these data are representative of adolescents in the United States (see Bearman et al., 1997). Further details about the Add Health are available at their web site (www.cpc.unc.edu/addhealth/contract.html). The Add Health data are appropriate to address our research questions. These data include comprehensive measures of adolescent dating,

non-romantic relationships, and involvement in sexual activity and the longitudinal design allows analysis of the independent variables measured at wave 1 on behavioral outcomes that occurred between the interview waves.

Our analytic sample is based on those adolescents who were interviewed at both wave 1 and 2 of the Add Health and possess appropriate weights that account for the cluster sample design effects ($N = 13,570$). There is about an 18-month time window between the interview waves. We examine adolescents who were 15 or older at the first interview ($N = 9365$), because questions about normative orientations toward sexual activity are asked only of teens who aged 15 or older. We note that our estimates of non-romantic sex may be conservative because we exclude very young teenagers. We then eliminate respondents who are missing data on our dependent variable or key independent indicators (e.g., normative orientations, and individual factors).² Our resulting sample is 7470 adolescents. To account for the complex sampling strategy of the Add Health, multivariate analyses are estimated using the STATA statistical package (Chantalla and Tabor, 1999). Information about sexual experiences was collected using audio-assisted self-interview technology, increasing confidentiality and reducing interviewer bias to potentially sensitive questions.

3.2. Measures

3.2.1. Dependent variable

The relationship context of sexual activity occurring between interview waves is measured using responses to several questions about the number of non-romantic sexual partners between interview waves, sexual activity that occurred within romantic relationships, and dates of sexual intercourse. We initially determined whether respondents had sexual intercourse between interview waves. We then relied on questions that allowed us to determine the relationship context of sexual experiences between interview waves.³ Respondents who reported having sexual relationships between the interview waves were asked, “Since the month of the last interview, with how many people, in total, including romantic relationship partners, have you ever had a sexual relationship?” Adolescents then were asked to answer the same question with reference to people who were “not romantic partners.” Further information about the relationship context of sexual activity between the waves was based on responses to questions about activities within one of three romantic relationships. Respondents who had been in romantic relationships

² These sample restrictions create a somewhat biased sample. Our sample is somewhat younger, less often black, has higher income, less often missing income, has fewer siblings, and more often from two biological parent families than the sample without restrictions for missing data. These biases indicate that we may be underrepresenting teens possessing the highest odds of non-romantic sexual experiences. Our results suggest that this bias may indicate that we somewhat underrepresenting teens with the greatest odds of having non-romantic sexual partners.

³ Unfortunately, we could not use questions about whether respondents had “ever” had different types of sexual experiences. Our analyses focus on sexual behavior between the interview waves so we can only use questions with a specific time reference.

between interview waves were asked whether they had sexual intercourse with their boyfriend or girlfriend and the dates of sexual intercourse.⁴ The respondents who had sex with a romantic partner after the wave 1 interview date were coded as having a romantic sexual partner. We create a variable with four mutually exclusive categories: (1) no sexual activity; (2) only romantic sexual activity; (3) only non-romantic sexual activity; and (4) both romantic and non-romantic sexual activity. We initially ran our analyses using a four category variable and found that we could collapse the later two categories into one with no loss of information. Moreover, this is more consistent with our focus on non-romantic sexual activity; thus we categorize teenagers into the following three groups: (1) no sexual experience; (2) only relationship sexual activity (category 2 above); and (3) some non-romantic sexual activity (categories 3 and 4 above).

3.2.2. Independent variables

We examine the following domains: sociodemographic indicators, individual resources, parental behaviors, peer attachment, school attachment, neighborhood attachment, normative orientations toward sex, and sexual history. We present the distribution of these variables in Table 1. Below we report percentages and mean values for the entire sample (column 1 of Table 1); however, the percentages and mean values for the sexually active sample are also provided in Table 1.

3.2.3. Sociodemographic indicators

We include gender, age, race, family structure, parental education, family income, number of siblings in the household, and importance of religion measured at wave 1 as indicators of sociodemographic background. *Gender* is a dichotomous variable with boys coded as '1' and girls as '0.' Just over half of the sample is female (54%) and 46% are male. We calculate the adolescent's *age* from the reported birth date and the interview date. The average age is 16. *Race/ethnicity* is self-reported and coded as: White non-Hispanic (64.5%), African-American non-Hispanic (18.5%), Hispanic (10.8%), and other (6.3%). The "other" category includes groups that are too small to distinguish in analyses. *Family structure* is a four category variable that indicates whether the teen lives in a two biological parent family (47.5%), single parent family (33.2%), stepparent family (13.0%), or some other family type (6.3%). We measure economic well-being using *logged household income*. A shortcoming of the Add Health data is that a considerable share (21%) of the sample have missing data on income. We code these cases to the mean household income and include a dummy variable to mark these cases so that we can test the effect of substituting the mean for missing income. *Mother's education* is coded as: less than 12 years (18.6%), 12 years (20.3%), 13–15 years (21.1%), and 16 or more years of education (21.4%). We drew the information about mother's education from the adolescents'

⁴ If less than three romantic partners were identified by the respondent, the Add Health classifies a sexual partnership as romantic if the respondents reported they held hands, kissed, and said "I love you." This strategy may result in underreporting of non-romantic sexual relationships.

Table 1
Distribution of independent variables

	Total Mean/%	Sexual activity between interview waves		
		No sexual activity Mean/%	Only romantic sexual partners Mean/%	Non-romantic sexual partner Mean/%
<i>Sociodemographic</i>				
Gender				
Female	53.7	47.6	59.2	43.9
Male	46.3	52.4	40.8	56.1
Race				
White	64.5			
Black	18.5	12.5	15.6	23.3
Hispanic	10.8	13.2	11.1	10.0
Other	6.3	0.9	6.4	6.1
Age	16.2	16.8	17.3	17.2
Family Structure				
Two Biological	47.5			
Single	33.2	21.0	31.7	35.6
Step	13.0	10.3	12.6	13.7
Other	6.3	3.4	6.2	6.5
Income				
Logged Income	3.5	3.6	3.5	3.5
Missing Income	20.8	21.1	19.4	23.0
Education				
Less than 12 years	18.6	16.7	18.2	19.3
12 years	20.3			
13–15 years	21.1	18.4	22.3	19.0
Greater than 16 years	21.4	28.7	20.0	23.8
Number of Siblings	1.4	1.5	1.4	1.4
Importance of Religion	2.5	2.9	2.6	2.4
<i>Risk and Protective</i>				
Self-Esteem	24.5	24.6	24.4	24.3
PPVT	101.2	102.2	101.6	100.5
Parental Caring	34.0	35.0	33.9	34.0
Parental Monitoring		1.7	1.4	1.5
Peer Caring	4.3	4.3	4.3	4.2
School Problems	4.8	4.0	4.6	5.2
Neighborhood Safe	90.7	91.2	91.6	89.3
<i>Normative Beliefs</i>				
Individual	11.7	10.9	11.5	12.2
Mother	6.9	5.3	6.7	7.2
Peer	4.3	2.3	2.4	2.6
<i>Wave 1 Sexual Experience</i>				
None	58.1	82.6	24.4	14.7
Some Non-Romantic	26.2	10.0	43.6	63.1
Only Romantic	15.7	7.4	32.0	22.2
<i>N</i>	7470	4649	1775	1046

responses, but for respondents with missing data we substitute the mother's report of her educational level. For the remaining 137 cases we use the adolescent's report of father's education (41 cases with an average of 12 years of education) and apply the modal category to the remaining 96 respondents. *Number of siblings* refers to the number of siblings (e.g., half, step, foster, biological, or adopted) living in the same household as the adolescent at wave 1 (mean = 1.4 siblings). *Religiosity* is measured by responses to a question about the importance of religion. Responses range from 1 to 4 with 1 indicating religion is not at all important and 4 indicating religion is very important to the adolescent's life (mean = 2.5).

3.2.4. Risk and protective factors

We include two types of risk and protective factors: individual and social. The *individual* factors include: self-esteem and verbal ability. Measures of *social* risk and protective factors include: parenting, peer attachment, school attachment, and neighborhood attachment.

Self-esteem is measured with a six item scale. Adolescents are asked the extent to which they agreed with the following items: (1) "You have a lot of good qualities"; (2) "You have a lot to be proud of"; (3) "You like yourself just the way you are"; (4) "You feel like you are doing everything just about right"; (5) "You feel socially accepted"; and (6) "You feel loved and wanted." A five-point response format ranging from (1) strongly disagree to (5) strongly agree follows each item. Following procedures used by Longmore and DeMaris (1997) in constructing similar social psychological scales, we construct a self-esteem score for every adolescent who reported valid responses for at least 67% of the items (4 of 6 items). We calculate the scale score as the mean of the items, multiplied by six. Scores range from 6 to 30, and the mean is 24.5. The Cronbach's α is .63.

The second individual resource is an abbreviated version of the Peabody Picture Vocabulary Test (PPVT). This has been used as a measure of teenage verbal ability in other studies (e.g., Rowe et al., 1999). We use the age standardized scores with a mean of 100 and a standard deviation of 15 (mean = 101.2).

3.2.5. Parenting behaviors

We measure parental caring and warmth, and parental monitoring. *Parental caring and warmth* is a summed eight item scale that assesses the adolescent's perception of closeness to mother, mother caring, parental caring, understanding, attention, communication, warmth, and relationship quality. The responses are coded on a five-point scale with higher values indicating greater attachment. Respondents who answer 75% of the items are included in the analyses. We calculate the scale score as the mean of the items, multiplied by four, and scores range from 10 to 40, and the mean is 34.0. The Cronbach's α is .86.

We measure *parental monitoring* using a six item scale. Respondents are asked whether: parents let them make their own decisions about (1) the time they must be home on weekend nights; (2) the people they hang around with; (3) what they wear; (4) how much TV they watch; (5) what time they go to bed on week nights; and (6) what they eat. Items are coded such that 0 = yes and 1 = no, and then

summed. Scores range from 0 to 6 with higher scores indicating greater monitoring, and the mean is 1.5. The Cronbach's α is .61.⁵

3.2.6. Peer attachment

We use the single item: "How much do you feel that your friends care about you?" to assess *peer attachment*. Responses range from 1—not at all, to 5—very much, and the mean is 4.3.

3.2.7. School attachment

Respondents' *school attachment* is measured with four items. The statements establish the extent to which respondents agree that since the start of the school year, the respondent has: (1) "had problems getting along with teachers"; (2) "paying attention in school"; (3) "getting homework done"; and (4) "getting along with other students." Respondents interviewed in the summer are asked about the prior school year. Items are coded such that 0 = never, 1 = just a few times, 2 = about once a week, 3 = almost every day, and 4 = everyday. We calculate the scale score as the mean of the items multiplied by four, and scores range from 0 to 16 and the mean is 4.8. The Cronbach's α is .69.

3.2.8. Neighborhood attachment

We rely on a single question to measure *neighborhood attachment*. Respondents are asked: "Do you usually feel safe in your neighborhood?" Response categories are yes and no, and 90.7% of the respondents report feeling safe in their neighborhood.

3.2.9. Normative beliefs

We include the teen's normative beliefs about sexual behavior and their perceptions of their mother's and peers' attitudes. The *individual normative orientation* toward sexual intercourse is based on the degree to which respondents agree with four statements: (1) "If you had sexual intercourse, it would give you a great deal of physical pleasure"; (2) "it would relax you"; (3) "it would make you more attractive to women/men"; and (4) "you would feel less lonely." Responses are coded such that a 5 indicates strong approval and a 1 indicates strong disapproval. Respondents who did not reply to at least two questions were excluded from analyses. We calculate the scale score as the mean of the items multiplied by four, and scores range from 4 to 20, and the mean is 11.7. The Cronbach's α is .74.

Mother's normative orientation toward sexuality is based on responses to three statements. Teens are asked: (1) "If you had sexual intercourse, it would upset your mother"; (2) your mother would (strongly disapprove to strongly approve) of you "having sex at this time in your life"; and (3) your mother would (strongly disap-

⁵ We tested whether separate variables indicating decisions about curfew on weeknights and friends had similar effects as our scaled measure. We obtain similar results regardless of how we tap into parental monitoring.

prove to strongly approve) of you “having sexual intercourse with someone who was special to you and whom you knew well—like a steady.” We calculate the scale score as the mean of the items multiplied by three, and responses range from 1 to 15, and the mean is 6.9. Respondents who answered none or only one question were deleted from the sample. The Cronbach’s α is .84.

To measure *peer normative orientation* respondents are asked to report, on a five-point scale, how strongly they agreed or disagreed with the following statement: “If you had sexual intercourse, your friends would respect you more.” We coded this variable so that higher values indicate that teens believe that their friends would respect them more if they had sex. Scores range from 1 to 5, and the mean is 4.3.

3.2.10. *Sexual history*

The relationship context of sexual behavior 18 months prior to wave 1 is classified as: no sexual experience, only relationship sexual activity, and some non-relationship sexual experience. This variable is created in a similar manner to the dependent variable described above. Most of the respondents in the sample were virgins at wave 1 or had not had sex in the last 18 months (58.1%), one-quarter had some non-romantic sexual experience in the last 18 months, and 15.7% reported only romantic sexual experience in the last 18 months.

3.3. *Analytic strategy*

To assess the prevalence of non-romantic sex, we classify adolescents’ sexual experiences into three mutually exclusive categories: no sexual intercourse between the interview waves, some non-romantic sexual intercourse, and only romantic sexual intercourse. Our predictions of the odds of having non-romantic sex are based on multinomial logistic regression models. We estimate the odds of (1) having sex with a non-romantic sexual partner versus not having sex; (2) having sex with a romantic sexual partner versus not having sex; and (3) having sex with a non-romantic versus a romantic partner. We use this approach because there are substantive reasons to expect that the effects of the covariates to differ depending on whether we analyze the decision to have sex or the decision about the type of sexual partner. Given our emphasis on sexual experiences with non-romantic sexual partners we present the first and third model in our tables.

We first estimate a zero-order or bivariate multinomial model that includes each of the independent variables or group of independent variables. The model provides estimates of the odds of engaging in non-romantic sex versus not experiencing sexual intercourse, and the odds of having sex with non-romantic versus romantic sexual partners. These bivariate results are discussed but not presented. We then estimate multivariate models entering blocks of variables. We start with the sociodemographic indicators that reflect how structural factors influence sexual decisions. Our second model represents the traditional risk and protective approach. The third model includes factors that represent the normative orientation or social learning perspective. We include the individual, peer, and family normative orientations toward sexual activity. Our final model adds the teenager’s prior sexual experience into

the model. We determine whether the factors associated with each approach contribute to the fit of the model. We then test for interactions among gender, age and the independent variables.

4. Results

4.1. Relationship context of sexual activity

We address our first research question regarding the prevalence of sexual intercourse between interview waves. The first column of Table 2 shows that three-fifths (60.5%) of teens (age 15 and older) did not have intercourse between interview waves and that two-fifths of teens (age 15 and older) had sexual intercourse between the interview waves. Almost one-tenth (9.4%) of teens had sex with only non-romantic partners and one-quarter (24.7%) had sex with only romantic partners. A small percentage of teens (5.5%) had sex with both romantic and non-romantic partners. When we combine categories, one in seven (14.9% [9.4% + 5.5%]) teenagers report having sex between the interview waves in a non-romantic context, and three-tenths (30.2% [24.7% + 5.5%]) had sex in a relationship context. These results suggest that a substantial minority of teens have engaged in sexual activity with non-romantic partners.

We next examine only sexually active teenagers between the interview waves (second column of Table 2). Nearly one-quarter (23.8%) had sex with only non-romantic partners, three-fifths (62.5%) had sex with only romantic partners, and 14% had sex with both a romantic and non-romantic partner. Taken together, over one-third (37.7% [23.8% + 14%]) of sexually active teens have had sexual intercourse with someone they were not dating. Thus, we believe it is important to expand our understanding of adolescent sexual activity to include the nature of the sexual partnerships.

4.2. Multivariate models

The multivariate models address how the personal and social characteristics influence the relationship context of adolescent sexual activity. Table 3 presents the effects of the covariates on the odds that an adolescent reported having non-romantic

Table 2
Relationship context of sexual activity

	Total	Sexually active
Relationship context of sexual experience between waves		
None	60.5	—
Only Non-Romantic	9.4	23.8
Only Romantic	24.7	62.5
Both Non-Romantic and Romantic	5.5	14.0
	100.0	100.0
<i>N</i>	7470	2821

sexual intercourse between interview waves. Two sets of coefficients are presented: (1) the odds of having sex with a non-romantic partner rather than not having sex and (2) the odds of having sex with a non-romantic versus romantic partner. It is important to distinguish between these models because the first may be just predicting whether adolescents have sex and the first focuses on whether sexually active teens chose non-romantic partners. Four models are included in Table 3. The first model includes the basic sociodemographic variables. The second model adds the traditional risk and protective factors. The third model includes the individual, mother, and peer normative orientations toward sexual intercourse. The final model adds variables measuring teenager's prior sexual experience.

4.2.1. *Sociodemographic factors*

The sociodemographic factors largely operate in the expected directions. The following variables are significantly related to the odds of having sex with a non-romantic partner versus not having sex between interview waves: race, age, family structure, number of siblings, and religiosity (first column). Blacks, older teens, and teens from single, step, and other family structures, those with fewer siblings in the household, and more religious teens are more likely to have report having had sex with a non-romantic partner relative to not having sex between interview waves.

However, these same sociodemographic variables do not predict who, among the sexually active, are likely to have sex with a non-romantic partner versus a romantic partner (second column). The only similar findings are for race and religiosity. Sexually active Black teens are more likely to have had sex with a non-romantic partner than white teens. Adolescents who report that religion is an important part of their life have lower odds of sex with a non-romantic partner, but this effect diminishes with the inclusion of the other covariates. Interestingly, sexually active boys are more likely to have sex with a non-romantic partner than are sexually active girls. Also, older teens have a lower likelihood of having non-romantic rather than romantic sexual partners. Perhaps older teens are able to find romantic partners who will engage in sexual intercourse. Teens with more highly educated mothers have higher odds of having sex with non-romantic rather than romantic sexual partners.

4.2.2. *Traditional risk and protective factors*

The second model includes the traditional predictors of high risk behavior. Few of these theoretically important predictors are related in the multivariate models, but most are associated in expected directions with non-romantic sex in bivariate models.⁶ The inclusion of these factors significantly added to the fit of the model ($\chi^2 = 235.98, p < .001$). The risk and protective factors do not explain the effects of the sociodemographic variables. The only factors that matter in the multivariate models are self-esteem, parental caring and warmth, and troubles in school. Youth

⁶ Bivariate or zero-order models include only the single explanatory variable. These findings are not shown.

Table 3
Multinomial logistic regression estimates of the likelihood of non-romantic sexual intercourse between interview waves

	Sociodemographic		Risk and protective		Normative beliefs		Sexual history	
	Non-Romantic vs No Sex	Non-Romantic vs Romantic	Non-Romantic vs No Sex	Non-Romantic vs Romantic	Non-Romantic vs No Sex	Non-Romantic vs Romantic	Non-Romantic vs No Sex	Non-Romantic vs Romantic
<i>Sociodemographic</i>								
Gender								
(Female)								
Male	0.11	0.64***	0.05	0.63***	-0.51***	0.47***	-0.42***	0.46***
Race								
(White)								
Black	0.51***	0.48**	0.57***	0.47***	0.42**	0.44**	0.02	0.38*
Hispanic	-0.29 ⁺	-0.04	-0.23	-0.08	-0.32 ⁺	-0.12	-0.26	-0.12
Other	-0.25	0.01	-0.27	-0.06	-0.22	-0.04	-0.16	-0.06
Age	0.30***	-0.11*	0.29***	-0.10*	0.21***	-0.12**	0.10 ⁺	-0.14**
Family Structure (Two Biological)								
Single	0.72***	0.08	0.65***	0.06	0.43**	0.01	0.34*	0.001
Step	0.62***	0.16	0.58***	0.14	0.40*	0.10	0.27 ⁺	0.05
Other	0.66**	-0.07	0.63**	-0.10	0.38	-0.16	0.22	-0.21
Income								
Log Family Income	-0.01	-0.07	-0.01	-0.01	-0.02	-0.07	0.02	-0.05
Missing Income	0.08	0.25 ⁺	0.07	0.24 ⁺	0.07	0.23	0.06	0.24
Education								
Less than 12 years (12 years)	0.10	0.13	0.09	0.08	0.05	0.08	0.04	0.08
13–15 years	-0.02	-0.07	-0.01	-0.05	0.02	-0.03	0.18	-0.002
16 years or more	-0.15	0.27 ⁺	-0.14	0.30*	-0.10	0.31	0.14	0.37*
Number of Siblings	-0.09**	-0.04	-0.09**	-0.04	-0.06 ⁺	-0.04	-0.02	-0.03
Importance of Religion	-0.13 ⁺	-0.01*	-0.09	-0.01 ⁺	-0.03	-0.01	-0.03	-0.01

<i>Risk and Protective</i>						
Self-Esteem	0.01	−0.03 ⁺	0.01	−0.03 ⁺	0.01	−0.03 ⁺
PPVT	−0.001	−0.002	0.003	−0.001	−0.01	0.001
Parental Monitoring	−0.06	0.03	−0.01	0.04	0.03	0.05
Peer caring	0.07	−0.08	0.08	−0.08	0.08	−0.07
Family caring	−0.03 [*]	0.02	−0.03 [*]	0.02	−0.01	0.02
Troubles in School	0.12 ^{***}	0.04 [*]	0.10 ^{***}	0.03 [*]	0.05 ^{**}	0.02
Neighborhood Safe	0.00	−0.19	−0.05		0.10	−0.19
<i>Normative Beliefs</i>						
Individual Benefits			0.10 ^{***}	0.04 ⁺	0.04 ⁺	0.03
Mother's Approval			0.22 ^{***}	0.04 [*]	0.10 ^{***}	0.03
Peer's Approval			0.12 [*]	0.001	0.06	−0.01
<i>Sexual History—Wave 1</i>						
(Virgin)						
Non-Romantic					3.28 ^{***}	0.77 ^{***}
Only Romantic					2.63 ^{***}	0.10
Log Likelihood	−6585.26	−6467.27	−6220.21			−5206.92
<i>N</i>	7470	7470	7470			7470

⁺ $p \leq .10$.
^{*} $p \leq .05$.
^{**} $p \leq .01$.
^{***} $p \leq .001$.

with higher self-esteem are significantly less likely to have sex with a non-romantic rather than romantic partner. This implies that teens who have non-romantic sexual experience may suffer from negative self-assessments. Youth who report higher family caring are less likely to have sex with non-romantic sexual partner. Teenagers who report more trouble in school (i.e., negative school attachment) have higher odds of non-romantic sexual intercourse and higher odds of having sex with non-romantic rather than romantic sexual partners.

4.2.3. Normative beliefs

The next model presented in Table 3 includes assessments of individual, parental, and peer normative orientations towards sex. We find that all of the normative orientations are significantly related to the relationship context of sexual intercourse in our bivariate models. In the multivariate models our results suggest that adolescents who perceive more benefits of having sex have higher odds of engaging in non-romantic sexual activity. In addition, teens with mothers who are more accepting of sexual activity have a statistically significant greater likelihood of having non-romantic sexual intercourse. Peers approval is positively associated with the odds of having non-romantic sex rather than not having sex, but is not related to whether teens have sex with a romantic or non-romantic sexual partner. These factors contribute to the fit of the model ($\chi^2 = 494.1, p < .001$). The teen's attitudes and their perceived peer norms are predictors of non-romantic versus no sex, but only mother's approval influences whether sexually active teens had romantic or non-romantic sexual partners. Interactions indicate that peers' attitudes have a stronger effect among teens who feel more warmly towards their peers (results not shown). Overall, normative orientations do not explain the effects of the traditional predictors of risky behavior.⁷

4.2.4. Sexual history

The final models include the teenager's prior sexual experience. As expected, this variable proves to be a strong predictor of sexual behavior between interview waves. The inclusion of sexual history adds to the fit of the model ($\chi^2 = 2026.6, p < .001$). Teenagers with prior non-romantic sexual activity are at greater risk of non-romantic sex between interview waves than teens with no prior sexual experience. In contrast, teenagers who have only had sex with romantic partners have similar odds of having non-romantic sex as teens who were virgins at wave 1. Thus, the relationship context of prior sexual activity strongly influences the relationship context of later sex.

The inclusion of this variable in the model explains some of the sociodemographic, risk and protective factors, and normative beliefs. For example, in this model black and white teens have similar odds of having non-romantic sex versus not having sex. Trouble in the school context is no longer related to the type of sexual

⁷ One exception is the effect of gender. When we include the normative beliefs in the model boys have higher odds of engaging in sex with a non-romantic partner. Further analyses reveal that the adolescent's perception of the benefits of engaging in sex differs by gender. The correlation between gender and such perceptions of sex is high (0.42), with males reporting more positive attitudes toward sex.

partner. Mother's and adolescent's normative beliefs are no longer related to the type of sexual partner, but are significantly associated with the decision to have sex. Similarly, peer approval is no longer related to the odds of having non-romantic sex.

4.2.5. Do effects vary by gender or age?

We evaluate whether the effects of the variables in the final model in Table 3 differ according to gender or developmental stage (age) (table not shown). We find gender differences in the effects of being Hispanic, mother's education, school attachment, cognitive development, and mother's approval on non-romantic sexual activity. Most of these gender differences exist in the model predicting whether teens have non-romantic sex or no sex. The interactions show that being Hispanic, having a highly educated mother, and mother's approval of sex are related to girls odds of having a non-romantic sexual partner but not among boys. In addition, we find that problems in school are associated with girls, but not boys odds of non-romantic rather than romantic sexual partners.

We find that the effects of being Black, verbal ability, mother's approval, and peer's approval differ according to age, and the effects of these variables are greater at younger ages (results not shown). It is noteworthy that maternal and peer views matter more among younger teens than older teens (results not shown). None of the remaining predictors significantly interact with age suggesting that the effects of these variables are similar for teens across stages of development.

5. Discussion

Our work contributes to a growing body of literature that focuses on the importance of relationships with sexual partners. We argue that it is important to consider the full repertoire of adolescents' experiences by examining the types of sexual partners over time. Approximately one-quarter of teens initiate sex with someone they are not dating (Manning et al., 2000). We find that the majority of sexually active teens have had some sexual experience outside of a romantic relationship. Thus, teens 'move' into sexual experiences with non-romantic partners indicating that teenagers' sexual experiences are not consistent or static over time. A basic, but important, finding is that teens' sexual repertoires frequently include both romantic and non-romantic experiences.

Our analyses support a distinction between non-romantic and romantic experiences, because we find differences in the effects of variables on the likelihood that teens choose to have sex with romantic or non-romantic partners. However, further attention to more refined indicators of relationships may lead to important contributions to adolescent sexual risk-taking and variations in the context of sexual decision-making. The next important step is to investigate the relational features of different types of sexual partners. In addition, this relational emphasis should be combined with greater attention to the complex array of factors that motivate teenagers to engage in sex.

We find that some of the structural features of adolescents' lives are related to the context of their sexual experience. We do confirm prior studies that focus on race and gender, African Americans and males are more likely to have non-romantic sex. Moreover, the strongest predictor of non-romantic sexual activity is prior sexual experience. Yet one-fifth of teens who had only romantic sexual partners at wave 1 had a non-romantic sexual partner between interview waves.

We find that a traditional risk model does not necessarily apply to the relationship context of sexual activity. The factors that are typically related to adolescent development are not also associated with the context of sexual experience. It is possible that the inclusion of the effects of several domains simultaneously mutes the effects of the specific social influences. In fact, in bivariate models we find that many of the traditional risk and resilience variables are associated with the odds of non-romantic sex in the expected directions. Some of our indicators are limited and improved measures of some conceptual domains could lead to slightly different results. We believe that researchers need to move beyond a problem framework to understand teenage sexual activity.

An important contribution of our project is that we move beyond the basic risk and resilience framework to understand adolescent risk-taking. Not only does the nature of relationships and teens' social worlds influence decisions about sexual partners, but teens' own beliefs and perceived beliefs of significant others influence their sexual decision-making. This is consistent with prior research on adolescent development (e.g., Akers et al., 1998; Hartup, 1996; Kirby, 2001), which emphasizes the key role of normative orientations in predicting risk behavior. Consistent with previous studies, we find that adolescents' sexual activity is influenced not only by their own views of sex, but their perceptions of their mothers' views. We find that peers' normative orientations are related to non-romantic sexual activity, but is explained by sexual history. While peer caring was not a risk factor, consistent with social learning principles (Sutherland, 1939) the effects of peers' beliefs are greater when the teen reports greater level of peer caring. Further attention to the measurement of peer's norms towards sex is needed in future research.

Taken together, these results provide a more realistic portrait of the context of adolescent sexual decision-making. Further work needs to integrate the type of sexual partner(s) into models of sexual risk-taking. In addition, researchers should examine the features of different types of relationships (Giordano et al., 2001). Our work suggests that promotion of teenage healthy sexual decision-making requires consideration normative beliefs, which may be potentially malleable. Moreover, adolescents' patterns of sexual partnering may have implications for relationships during their adolescent years, as well as longer-term consequences for their later life course trajectory as they move into adult relationships.

References

- Akers, J., Jones, R., Coyl, D., 1998. Adolescent friendship pairs: similarities in identity status development, behaviors, attitudes, and intentions. *Journal of Adolescent Research* 13, 178–201.

- Alan Guttmacher Institute, 1994. *Sex and America's Teenagers*. Alan Guttmacher Institute, New York.
- Bearman, P., Bruckner, H., 2000. Promising the future: virginity pledges and first intercourse. *American Journal of Sociology* 106, 859–912.
- Bearman, P.S., Jones, J., Udry, J.R., 1997. The National Longitudinal Study of Adolescent Health: Research Design. Available from <<http://www.cpc.unc.edu/projects/addhealth/resdesign/index/htm>>.
- Berndt, T., 2002. Friendship quality and social development. *Current Directions in Psychological Science* 11, 7–10.
- Berndt, T.J., Keefe, K., 1995. Friends' influence on adolescents' adjustment to school. *Child Development* 66, 1312–1329.
- Billy, J., Udry, J.R., 1985. The influence of male and female best friends on adolescent sexual behavior. *Adolescence* 20, 21–32.
- Brazzell, J.F., Acock, A., 1988. Influence of attitudes, significant others, and aspirations on how adolescents intend to resolve a premarital pregnancy. *Journal of Marriage and the Family* 50, 413–425.
- Brewster, K.L., 1994. Race differences in sexual activity among adolescent women: the role of neighborhood characteristics. *American Sociological Review* 59, 408–424.
- Brewster, K.L., Billy, J., Grady, W., 1993. Social context and adolescent behavior: the impact of community on the transition to sexual activity. *Social Forces* 71, 713–740.
- Brewster, K.L., Cooksey, E.C., Guilkey, D.K., Rindfuss, R.R., 1998. The changing impact of religion on the sexual and contraceptive behavior of adolescent women in the United States. *Journal of Marriage and the Family* 60, 493–504.
- Bronfenbrenner, U., 1986. Ecology of the family as a context for human development: research perspectives. *Developmental Psychology* 22, 723–742.
- Buehler, C., Gerard, J., 2002. Marital conflict, ineffective parenting, and children's and adolescents' maladjustment. *Journal of Marriage and the Family* 64, 78–92.
- Burhmester, D., 1996. Need fulfillment, interpersonal competence, and the developmental contexts of early friendship. In: Newcomb, A., Hartup, W. (Eds.), *The Company They Keep: Friendship in Childhood and Adolescence*. Cambridge University Press, New York, pp. 158–185.
- Chantalla, K., Tabor, J., 1999. *Strategies to Perform a Design-Based Analysis Using the Add Health Data*. Carolina Population Center, University of North Carolina at Chapel Hill, Chapel Hill, NC.
- Chara, P.J., Kuennen, L., 1994. Diverging gender attitudes regarding casual sex: a cross-sectional study. *Psychological Reports* 74, 57–58.
- Cooksey, E., Mott, F., Neubauer, S., 2002. Friendships and early relationships: links to sexual initiation among american adolescents born to young mothers. *Perspectives on Sexual and Reproductive Health* 34, 118–126.
- Crockett, L.J., Petersen, A.C., 1993. Adolescent development: health risks and opportunities for health promotion. In: Millstein, S.G., Petersen, A.C., Nightingale, E.O. (Eds.), *Promoting the Health of Adolescents: New Directions for the Twenty-First Century*. Oxford University Press, New York, pp. 13–37.
- Cubbins, L., Tanfer, K., 2000. The influence of gender on sex: a study of men's and women's self-reported high-risk sex behavior. *Archives of Sexual Behavior* 29, 229–257.
- Cullen, F.T., 1983. *Rethinking Crime and Deviance Theory: The Emergence of a Structuring Tradition*. Rowman and Allanheld, New Jersey.
- Dittus, P., Jaccard, J., 2000. Adolescents' perceptions of maternal disapproval of sex: relationship to sexual outcomes. *Journal of Adolescent Health* 26, 268–278.
- East, P., Felice, M., Morgan, M., 1993. Sisters' and girlfriends' sexual childbearing behavior: effects on early adolescent girls' sexual outcomes. *Journal of Marriage and the Family* 55, 953–963.
- Ellen, J., Cahn, S., Eyre, S., Boyer, C., 1996. Types of adolescent sexual relationships and associated perceptions about condom use. *Journal of Adolescent Health* 18, 417–421.
- Elo, I.T., King, R.B., Furstenberg Jr., F.F., 1999. Adolescent females: their sexual partners and the fathers of their children. *Journal of Marriage and the Family* 61, 74–84.
- Emirbayer, M., Goodwin, J., 1994. Network analysis, culture, and the problem of agency. *American Journal of Sociology* 99, 1411–1454.
- Fishbein, M., Ajzen, I., 1975. *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Addison-Wesley, Reading, MA.

- Ford, K., Sohn, W., Lepkowski, J., 2001. Characteristics of adolescents' sexual partners and their association with use of condoms and other contraceptive methods. *Family Planning Perspectives* 33, 100–105, p. 132.
- Fortenberry, D., 2003. Health behaviors and reproductive health risks within adolescent sexual dyads. In: Florsheim, P. (Ed.), *Adolescent Romantic Relations and Sexual Behavior*. Lawrence Erlbaum Associates, Mahwah, NJ, pp. 279–296.
- Furman, W., Simon, V., 1999. Cognitive representations of adolescent romantic relationships. In: Furman, W., Brown, B., Feiring, C. (Eds.), *The Development of Romantic Relationships in Adolescence*. Cambridge University Press, New York, pp. 75–98.
- Gerard, J., Buehler, C., 2002. Cumulative environmental risk and youth problem behaviors: the role of youth attributes. Unpublished paper.
- Giordano, P.C., 1995. The wider circle of friends in adolescence. *American Journal of Sociology* 101, 661–697.
- Giordano, P.C., Cernkovich, S., Groat, H.T., Pugh, M., Swinford, S., 1998. The quality of adolescent friendships: long-term effects. *Journal of Health and Social Behavior* 39, 55–71.
- Giordano, P.C., Longmore, M.A., Manning, W.D., 2001. On the nature and developmental significance of adolescent romantic relationships. In: Kinney, D. (Ed.), *Sociological Studies of Children and Youth*. Elsevier, New York, pp. 111–139.
- Glei, D., 1999. Measuring contraceptive use patterns among teenage and adult women. *Family Planning Perspectives* 31, 73–80.
- Hagan, J., Foster, H., 2001. Youth violence and the end of adolescence. *American Sociological Review* 66, 874–899.
- Harris, K.M., Duncan, G.J., Boisjoly, J., 2002. Evaluating the role of 'Nothing to Lose' attitudes on risky behavior in adolescence. *Social Forces* 80, 1005–1039.
- Hartup, W., 1996. The company they keep: friendships and their developmental significance. *Child Development* 67, 1–13.
- Hecht, D.B., Inderbitzen, H.M., Bukowski, A.L., 1998. The relationship between peer status and depressive symptoms in children and adolescents. *Journal of Abnormal Child Psychology* 26, 153–160.
- Hennik, M., Cooper, P., Diamond, I., 2000. Seasonal work and sexual behavior. *Journal of Sex Research* 37, 175–183.
- Herold, E.S., Mewhinney, D., 1993. Gender differences in casual sex and AIDS prevention: a survey of dating bars. *Journal of Sex Research* 30, 36–42.
- Herold, E., Maticka-Tyndale, E., Mewhinney, D., 1998. Predicting intentions to engage in casual sex. *Journal of Social and Personal Relationships* 15, 502–516.
- Jaccard, J., Dittus, P., Gordon, V., 1996. Maternal correlates of adolescent sexual and contraceptive behavior. *Family Planning Perspectives* 28, 159–165, p. 185.
- Jaccard, J., Dittus, P., Gordon, V., 1998. Parent–adolescent congruency in reports of adolescent sexual behavior and in communication about sexual behavior. *Child Development* 69, 247–261.
- Jessor, R. (Eds.), 1998. *New Perspectives on Adolescent Risk Behavior*. Cambridge University Press, New York, pp. 1–12.
- Kirby, D., 2001. Understanding what works and what doesn't in reducing adolescent sexual risk-taking. *Family Planning Perspectives* 33, 276–281.
- Ku, L., Sonenstein, F., Pleck, J., 1993. Neighborhood, family, and work: influences on the premarital behaviors of adolescent males. *Social Forces* 72, 479–503.
- Longmore, M.A., DeMaris, A., 1997. Perceived inequity and depression: the moderating effect of self-esteem. *Social Psychology Quarterly* 60, 172–184.
- Longmore, M.A., Manning, W.D., Giordano, P.C., 2001. Preadolescent parenting strategies and teens' dating and sexual initiation: a longitudinal analysis. *Journal of Marriage and the Family* 63, 322–335.
- Longmore, M.A., Manning, W.D., Giordano, P.C., Rudolph, J.L., 2004. Self-esteem, depressive symptoms, and adolescents' sexual onset. *Social Psychological Quarterly*, forthcoming.
- Luthar, S., Cicchetti, D., Becker, B., 2000. The construct of resilience: a critical evaluation and guidelines for future work. *Child Development* 71, 543–562.
- Manning, W.D., Longmore, M.A., Giordano, P.C., 2000. The relationship context of contraceptive use at first intercourse. *Family Planning Perspectives* 32, 104–110.

- Maticka-Tyndale, E., Herold, E., Mewhinney, D., 1998. Casual sex on spring break: intentions and behaviors of Canadian students. *Journal of Sex Research* 35, 254–264.
- Miller, B.C., Moore, K.A., 1990. Adolescent sexual behavior, pregnancy, and parenting: research through the 1980s. *Journal of Marriage and the Family* 52, 1025–1044.
- Miller, B.C., Norton, M.C., Curtis, T., Hill, E.J., Schvaneveldt, P., Young, M.H., 1997. The timing of sexual intercourse among adolescents: family, peer, and other antecedents. *Youth and Society* 29, 54–83.
- Miller, K.S., Forehand, R., Kotchick, B.A., 1999. Adolescent sexual behavior in two ethnic minority samples: the role of family variables. *Journal of Marriage and the Family* 61, 85–98.
- Moore, K.A., Miller, B.C., Gleit, D., Morrison, D., 1995. Adolescent Sex, Contraception and Childbearing: A Review of Recent Research. Child Trends, Washington, DC.
- Nagy, S., Adcock, A.G., Nagy, M.C., 1994. A comparison of risky health behaviors of sexually active, sexually abused, and abstaining adolescents. *Pediatrics* 93, 570–575.
- Norris, A., Ford, K., Shyr, Y., Schork, M.A., 1996. Heterosexual experiences and partnerships of urban, low-income African-American and hispanic youth. *Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology* 11, 288–300.
- Ott, M., Adler, N., Millstein, S., Tschann, J., Ellen, J., 2002. The trade-off between hormonal contraceptives and condoms among adolescents. *Perspectives on Sexual and Reproductive Health* 34, 6–14.
- Paul, E.L., McManus, B., Hayes, A., 2000. 'Hookups': characteristics and correlates of college students' spontaneous and anonymous sexual experiences. *Journal of Sex Research* 37, 76–88.
- Perry, C.L., Kelder, S.H., Komro, K.A., 1993. The social world of adolescents: family, peers, schools and community. In: Millstein, S.G., Peterson, A., Nightingale, E.O. (Eds.), *Promoting the Health of Adolescents: New Directions for the Twenty-First Century*. Oxford University Press, New York, pp. 73–96.
- Rowe, D.C., Jacobson, K.C., van den Oord, E.J.C., 1999. Genetic and environmental influences on vocabulary IQ: parental education level as moderator. *Child Development* 70, 1151–1162.
- Santelli, J., Robin, L., Brener, N., Lowry, R., 2001. Timing of alcohol and other drug use and sexual risk behaviors among unmarried adolescents and young adults. *Family Planning Perspectives* 33, 200–205.
- Small, S.A., Kerns, D., 1993. Unwanted sexual activity among peers during early and middle adolescence: incidence and risk factors. *Journal of Marriage and the Family* 55, 941–952.
- Stevens-Simon, C., Reichart, S., 1994. Child abuse and adolescent pregnancy. *Archives of Pediatric Adolescent Medicine* 148, 23–27.
- Sutherland, E.H., 1939. *Principles of Criminology*. J.B. Lippincott, Chicago.
- Thornton, A.D., 1990. The courtship process and adolescent sexuality. *Journal of Family Issues* 11, 239–273.
- Warren, C.W., Santelli, J.S., Everett, S.A., Kann, L., Collins, J., Cassell, C., Morris, L., Kolbe, L., 1998. Sexual behavior among U.S. high school students 1990–1995. *Family Planning Perspectives* 30, 170–172, p. 200.
- Weis, D., 1998. Interpersonal heterosexual behavior. In: Koch, P., Weis, D. (Eds.), *Sexuality in America*. Continuum, New York, pp. 91–144.
- Whitaker, D., Miller, K., Clark, L., 2000. Reconceptualizing adolescent sexual behavior: beyond did they or didn't they? *Family Planning Perspectives* 32, 111–117.
- Youniss, J., Smollar, J., 1985. *Adolescent Relations with Mothers, Fathers and Friends*. University of Chicago Press, Chicago.