

Adolescent Sexual Risk Behaviors: The Role of Family, Peer, and School Social Norms

Sexual risk-taking behaviors, including early initiation of sexual activity, engaging in sex with multiple partners, and inconsistent use of reliable birth control, are associated with negative sexual outcomes such as unplanned pregnancies and sexually transmitted infections (STIs; DiClemente et al., 2007), which have adverse physical, psychological and economic consequences. For the majority of individuals in the United States, initiation of sexual activity begins during adolescence, a period that is also associated with increases in risk-taking and reward-seeking behaviors (Steinberg, 2008). Among sexually active individuals in the United States, adolescents account for approximately 50% of all new STI cases (Weinstock, Berman & Cates, 2004). Furthermore, the United States has the highest rates of teenage pregnancy and abortion in the industrialized world (Singh & Darroch, 2000).

After a period of decline between 1991 and 2005, teenage pregnancy in the United States rose suddenly between 2006 and 2007, prompting renewed interest in the factors associated with risky sexual behavior during the adolescent period. Recent work has pointed towards the role of social norms within individuals' proximal contexts as a central force constraining and enabling adolescents' behaviors. From a social psychological framework, social norms guide behavior through two mechanisms. First, persons are guided by subjective norms, which are their beliefs about what others will think about their behavior (e.g., Ajzen & Fishbein, 1977). For example, a teen's perception about how family or friends view sexual intercourse or the messages about sex communicated through school policies may influence whether he or she has sexual intercourse. Descriptive norms are a second social norms mechanism. They function to guide behavior by providing information about "normal" behavior in social environments, and constrain behavior by indicating what behaviors are deviant or off-limits (Cialdini & Trost, 1999).

Adolescents are embedded within a series of contexts and relationships ranging from most proximal (e.g., family, closest friends) to more distal (e.g., broader peer and school contexts; Bronfenbrenner & Morris, 1998) and are exposed to descriptive and subjective social norms from each of these contexts. For example, descriptive norms from peers are linked with individual health behaviors such as smoking (Weiss & Garbanati, 2006), drinking and driving (Linkenbach & Perkins, 2006), and condom use (Peterson & Bakeman, 2006). Parental social norms are associated with adolescent risk behaviors such as substance abuse (Scull, Kupersmidt, Parker, Elmore & Benson, 2010) and aggression (Farrell, Henry, Mays, & Schoeny, 2011). While less data are available regarding school-level social norms, there is initial research suggesting links between school social norms and individual bullying behaviors (Barboza, Schiamberg, Oehmke, Korzeniewski, Post, & Heraux, 2009), and academic achievement and engagement (e.g., Ogbu, 2003). Yet, no extant research has assessed relative roles of social norms from family, peer and school contexts simultaneously.

The current analyses aim to examine the role of social norms in predicting adolescent sexual health behaviors over time. This work contributes to the growing body of literature documenting the link between adolescent risk behaviors and social norms by (1) considering the role of both descriptive and subjective social norms, and (2) simultaneously examining three potential sources of social norms: schools, families, and peers.

Method

Sample. Add Health researchers surveyed a nationally representative sample of 90,118 7th-12th grade students in 132 schools during the 1994-1995 school year (Wave 1) (Harris, 2008). The schools were randomly selected from a stratified sampling frame based on region, racial composition, size, sector, and urbanicity. From this "in-school" sample, a subsample of 20,745 students was selected to complete a more in depth interview at home. In-home interview participants were reinterviewed one year later in 1996 (Wave 2, N=14,738) and again between 2001-02 (Wave 3, N=15,197) and 2007-08 (N=15,701).

School administrator and parent report data were also collected at Wave 1 for all in-home interview participants. The current analyses use data from the 14,738 students who participated in the Wave 1 and Wave 2 in-home interviews.

Measures. Demographic variables included individual (e.g. age, race, immigration status), familial (e.g., parent education, income to needs ratio, family structure), and school (e.g., type, locale, structure) characteristics that are theoretically and empirically associated with adolescent sexual behavior.

Variables assessing descriptive and subjective social norms were selected to represent social norms within each of three contexts: family, peers, and schools. Three variables assessing subjective family social norms were included. The first variable asked whether the student believed a pregnancy (or the student's partner's pregnancy) would embarrass the family. The second variable was a scale created using seven items ($\alpha = .89$) that assessed students' perceptions of parental approval of sexual intercourse. For example, students were asked, "How would your mother/father feel about your having sex at this time in your life?" The final variable was a seven-item measure ($\alpha = .87$) of parents' reports regarding their communication about the negative consequences of sex. For example, parents were asked, "How much have you talked [with your son/daughter] about having sexual intercourse and the negative or bad impact on his/her social life because he/she would lose the respect of others?" Three subjective peer social norms measures assessed students' responses regarding whether their partner would lose respect for him/her if they chose to have sex, whether sexual intercourse would help the student gain more respect among peers, and whether sex would make the student more attractive to the opposite gender. School-level measures included both descriptive and subjective social norms derived from multiple sources. School administrators reported the percent of female students who were pregnant in the last school year, and whether or not pregnant students were allowed to remain enrolled in regular courses. At the school level we also aggregated students' self-reports regarding whether or not they had had sexual intercourse to create a school-wide measure of the percent of students in the school who were sexually active.

Three aspects of sexual risk behaviors were assessed: reliable birth control use, engagement in risky sex, and number of sexual partners. Reliable birth control use was coded using students' responses to questions assessing whether they had used reliable birth control the last time they had sexual intercourse. Responses were coded to indicate whether students had 1) never had sex, 2) used reliable birth control or 3) used unreliable or no birth control. Engagement in risky sex was assessed via students' responses to questions regarding their use of alcohol or drugs immediately prior to their most recent sexual intercourse. Coding of this variable was similar to that of reliable birth control use. Students responded that they had 1) never had sex, 2) had not used alcohol or drugs or 3) had been using alcohol or drugs. Number of sexual partners was a count variable ranging from 0-50.

Results

The ultimate goals of analyses are to model growth trajectories of youth sexual risk behaviors, assessing the role of family, peer, and school social norms. To date, initial analytic models have assessed short-term prospective associations using lagged regression models in which Wave 1 demographic and social norm indicators were used to predict sexual health behaviors at Wave 2. Wave 1 measures of each outcome of interest were included in the models to help control for time-invariant factors affecting youth sex risk behaviors and for potential bidirectional influences, whereby youth behaviors may select youth into more risky social norm contexts. For each outcome, the regression estimation procedure used was based on distribution of the outcome variable being examined. Multinomial regression models were used to test students' use of reliable birth control and engagement in risky sex. A zero-inflated Poisson regression was used to examine number of sexual partners. See Table 1 for a list of the coefficients associated with social norm variables in each regression model. All analyses adjusted for

the stratified and clustered nature of the sample, and employed population weights to make the sample representative of all American youth.

Reliable Birth Control Use. Students who reported using unreliable birth control during their most recent sexual intercourse were compared to students who used reliable birth control and to students who reported they were not sexually active. In relation to family variables, results showed that when parents had a more approving attitude toward their adolescents' sexual engagement, youth in turn were more likely to use reliable birth control than to engage in unsafe sex. On the other hand, youth were more likely to use unreliable birth control than to remain abstinent. In addition, parents who communicated about the dangers of sexual activity had youth who were more likely to engage in sex with unreliable birth control than to remain abstinent. In relation to peer contexts, results found that youth beliefs that sexual activity would make them appear more attractive were also less likely to remain abstinent in comparison to engaging in unsafe sex. Finally, school contexts were also important. When schools showed welcoming policies toward pregnant students, allowing them to remain in regular classes, youth were more likely to engage in risky sex with unreliable birth control than to remain abstinent or use reliable birth control.

Engagement in Risky Sex. The second set of analyses assessed risky sex, that is intercourse preceded by drug or alcohol use. School and family social norms were the strongest predictors of students' engagement in risky sex. Family social norms again showed conflicting patterns. Namely, greater parental approval of their children's sexual engagement was predictive of a greater likelihood of risky sex, but parental communication about negative consequences of sex was also predictive of a greater likelihood of risky sex in comparison to safer sexual engagement. Results for school social norms were more consistent. Having more pregnant students in their school predicted a higher likelihood of risky sex than of both safer sex and abstinence among youth. On the other hand, having more sexually active students in one's school was predictive of a greater likelihood of abstinence or safer sex in comparison to unsafe sex.

Number of Sexual Partners. The final set of analyses assessed the number of sexual partners reported by youth, using a zero-inflated Poisson regression which explored the role of social norms in two parts. First, the inflated portion of the model examined variables related to whether students engaged in sex at all (i.e., had zero partners versus more than zero partners). For this portion, results found that the school-level social norm indicating greater exposure to pregnant students predicted a lower likelihood of a zero count, that is a higher likelihood of sexual activity among individual youth. No other social norms significantly predicted this portion of the Poisson model. In the second portion, assessing the number of partners among sexually active youth, results found that parental approval of sex predicted a greater number of sexual partners among youth, whereas beliefs that a pregnancy would embarrass the family predicted fewer partners. Peer social norms were also important, with youth perceptions that sex would help them to gain the respect of peers predicting fewer partners and beliefs that sex would increase their attractiveness predicting more partners.

Next Steps. Several additional analytical steps will be conducted to improve upon these preliminary analyses, including multiple imputation of missing data, and incorporation of peer nomination data to assess descriptive norms of peers' behaviors (eg, number of close friends engaging in sexual activity). Finally, we plan to further examine the longitudinal trajectories of sexual risk behaviors through wave 4 with multilevel growth models, considering both main effects of social norms and interactions with youth gender and age to consider the subgroups for whom parent, peer, and school norms are most important.

Table 1. Regression coefficients and standard errors for social norms predictors associated with three separate sexual health behavior outcomes

	Reliable Birth Control vs. Unreliable Birth Control	Never had sex vs. Unreliable Birth Control	Non-Risky Sex vs. Risky Sex	Never had sex vs. Risky Sex	Inflate	Count
Parental Social Norms						
Parent communication re: negative consequences of sex	0.000(.097)	-0.165*(.097)	-0.457***(.167)	-0.060(.141)	1.064(.056)	1.049(.044)
Parental approval of sex	0.186**(.077)	-0.198**(.080)	-0.727***(.119)	0.067(.107)	0.986(.064)	1.122**(.048)
Pregnancy would embarrass family	0.057(.058)	0.079(.053)	0.004(.100)	0.000(.083)	1.001(.031)	0.934*(.037)
Peer Social Norms						
Sex would make friends respect you more	0.046(.073)	-0.001(.068)	-0.008(.179)	0.044(.113)	0.976(.035)	0.956*(.026)
Sex would make your partner lose respect for you	-0.031(.055)	0.081(.058)	0.075(.097)	-0.052(.070)	0.985(.041)	0.999(.032)
Sex would make you more attractive to men/women	-0.008(.066)	-0.032*(0.073)	-0.003(.133)	-0.037(.078)	0.984(.048)	1.096***(.030)
School Social Norms						
Percentage of female students pregnant last school year	-0.159(.137)	-0.018(.188)	-0.562**(.273)	-0.589*(.345)	0.691***(.121)	0.903(.308)
Pregnant students remain enrolled in regular coursework	-0.305**(.122)	-0.364**(.133)	-0.136(.142)	-0.198(.173)	0.974(.090)	1.087(.195)
Percent of sexually active students in school	0.627(.671)	-0.709(.557)	2.032***(.756)	2.369***(.861)	1.606(.321)	2.056(.770)
Constant	-0.009(.066)	-0.032(.073)	12.91***(.220)	6.288***(.720)	0.835*(.477)	32.94***(.830)
Standard errors in parentheses						
^ Exponentiated coefficients are reported						
Analyses control for wave 1 risk behaviors as well as child, family, and school characteristics.						
*** p<0.01, ** p<0.05, * p<0.1						

