

## Peer Influence and Adolescent Sexual Behavior Trajectories: Links to Sexual Initiation

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### Abstract

This study aims to revisit the studies reported in the area of peer influence with reference to health behavior. Peer groups are social groups that consist of people of the same age and have similar interests and usually equal in terms of the education and social class. Peer groups are important as they tend to provide a space to make friends. They also help provide social and emotional support as well as an identity and a sense of belongingness to a social group, especially during adolescence. The authors have found that sexual behavior is one of the many areas in which teens are influenced by their best friends and peers. Teens are more likely to have sex if their best friends and peers are older, use alcohol or drugs, or engage in other negative behavior. Similarly, they are more likely to have sex if they believe their friends have more positive attitudes toward childbearing, have permissive values about sex, or are actually having sex. The authors have found that most of the studies in this area have been developed have been assessing the negative aspects of peer influence. Understanding important factors related to sexual behavior is important not only to change that behavior; it is important to identify those teens who are most at risk of having sex and unprotected sex. This paper explains the implications for those working to help youth avoid risky sexual behaviors and potential consequences. It is concluded with the recommendations for conducting studies in this direction.

**Keywords:** peer influence, sexual intercourse, health, adolescent

### Introduction

Better understanding of the complexities of parent and peer influences on adolescents' sexual decision making is essential to the development of effective prevention and intervention programming (Kotchick et al., 2001).

Research suggests that an early sexual debut, defined as having occurred prior to an adolescent reaching the age of 15, significantly increases the risk for unintended pregnancy, sexually transmitted infections (STIs) and future risky sexual behavior (Houlihan et al., 2008; Waller & DuBois, 2004). Additional intervention models aimed at delaying an adolescent's sexual debut might be successful in decreasing the future incidence of these negative outcomes. When considering interventions with adolescents, attention to peer influence is critical.

Many adolescents are confronted at some point during their teen years with choices about whether or not to have sex and, if they do, whether or not to use condoms and/or other contraceptives. Many factors affect those choices. Parents, educators, and other adults working with youth have learned that they cannot directly control the sexual behavior of teens. While at times, parents might wish to monitor their sons or daughters 24 hours a day to prevent them from having sex, or at the very least, unprotected sex, they can't do this. Instead, parents and others concerned about youth can only try to affect those factors that in turn affect the sexual decision-making of young people. For example, they might try to affect factors such as the teens' values about sexual behavior, their perceptions of family values and peer norms about sex, their attitudes about condoms and other forms of contraception, their educational and career plans, or their connection to their parents, their schools, and their faith communities, all of which are likely to affect whether or not teens have sex and whether or not they use protection against pregnancy and STD. Understanding important factors related to sexual behavior is important not only to change that behavior; it is important to identify those teens who are most at risk of having sex and unprotected sex. First people can use these factors to identify those teens at greater risk; then they can address the important factors affecting their behavior.

## Conceptual Basis

### An Early Sexual Debut: Definition and Prevalence

An early sexual debut is when a first consensual sexual experience for an adolescent has occurred prior to age 15 (Baumgartner et al., 2009; Guttmacher Institute, 2012; Houlihan et al., 2008). Current statistics show that approximately 13% of all adolescents have engaged in sexual activity by the age of 15 years old (Guttmacher Institute, 2012). Before age 13, only 6.1% of youth report having engaged in sexual intercourse (CDC, 2012). By age 19, approximately 85% of all adolescents are sexually active (CDC, 2012). These numbers indicate that an important point of intervention among adolescents with respect to sexual behavior is during the span of 13- 15 years of age.

### Perceptions in Adolescence around Sexual Behaviors

The proximity and salience of a group is an important factor in establishing the level of influence norms may have on individuals and their behavior (Campo et al., 2003; Dunleavy, 2008). Research indicates that a weak affinity toward a particular reference group results in the social norms for that group having a relatively small impact on the behavior of an individual (Rimal, 2008). With respect to adolescents, it has been established that particular consideration is placed on the makeup of the group they are referencing (Marshall, Scherer & Real, 1998). In other words, if adolescents do not closely identify with the individuals in their immediate surroundings, the norms may have less impact on their intention and subsequent decision to engage in a particular behavior. Everyday experience within one's own social circle can influence behavioral norms, which in turn influences an individual's interpretation of his or her experience (Stewart et al., 2002).

Peer norms appeared to directly affect the individual sexual and contraceptive behavior of teens. Specific findings suggest that, "when teenagers believe that their peers have permissive attitudes toward premarital sex or actually engage in sex, and then they themselves are more likely to engage in sex, have sex more frequently and have sex with more ... partners" (Kirby, 2001, p. 277). When youth believe that their peers favor condom use they are more likely to use condoms and contraceptives (Kirby, 2001). The implications of these findings suggest that when adolescents are connected to groups that express a clear value or norm against engaging in sex or unprotected sex, they were less likely to do so themselves. In addition, when adolescents are connected to groups that have permissive attitudes toward sex, they are more likely to engage in sex (Kirby, 2001). The perception of peers' sexual behavior appears to be a strong predictor of an early adolescent's intention to experience an earlier sexual debut (Gillmore et al., 2002; Hollander, 2001; Prinstein, Meade & Cohen, 2003; Sieving et al., 2006).

### Empirical Basis

Linkenbach (1998) found that adolescents are more concerned with what they perceive as normative than with what is discerned to be an unhealthy behavior. When identification with the individual or group engaging in the behavior is strong, those behaviors will have a larger influence on the observers' social norms (Gino, Ayal & Ariely, 2009). Increased pressure toward peer conformity can result in a strong desire for adolescents to adopt the expectations and norms of their peers (Hagman, Clifford & Noel, 2007). Adolescents tend to capitulate when the unpleasantness of standing alone becomes too great, fostering a tendency to adopt behaviors that they think are norms in their environment in order to be accepted (Cialdini & Goldstein, 2004; Ott & Doyle, 2005). The argument for focusing on altering an adolescent's immediate environment and perceived norms becomes that much more relevant. One can have significant awareness that a behavior is unhealthy and detrimental while still engaging in that behavior.

Providing information to adolescents about the risks is not enough to discourage them from engaging in the behavior, indicating a need for a considerable shift in conceptualizing intervention models for this population.

Peer norms and peer influences are central in adolescents' development of health-related behaviors. Several decades of scholarship have demonstrated that, on average, teens are more likely to engage in risky behaviors if they perceive a high level of such behaviors among peers (see Brechwald & Prinstein, 2011). Sexual intercourse is one health-related behavior that is often influenced by norms in the peer group (see Buhi & Goodson, 2007). Although sexual behavior is a normative part of adolescent development, with over 60% of U.S. students engaging in intercourse by the end of high school (Centers for Disease Control and Prevention [CDC], 2012), many youth engage in sexual behaviors that confer risks.

Nationally representative samples suggest nearly one quarter of U.S. adolescents have had sex with four or more partners; as few as half of these sexually active youth use condoms consistently (CDC, 2012). Such risk behavior contributes to the

9 million new sexually transmitted infections and 8,300 new cases of HIV contracted among youth each year and also can lead to unplanned pregnancy (CDC, 2011a, 2011b).

Peers may play an especially important role in sexual socialization—the process through which adolescents adopt attitudes and norms regarding sexual behaviors and relationships (e.g., L'Engle & Jackson, 2008). Whereas parents and schools may act as health-promoting agents that slow adolescents' development of sexual behaviors, mass media and peers may serve as agents that increase adolescents' sexual behaviors (L'Engle, Brown, & Kenneavy, 2006). The importance of peer influences for adolescents' sexual behaviors is not surprising, given key characteristics of this developmental period. For most adolescents, pubertal development and concomitant sexual desires occur during a developmental period that also is marked by identity development processes (Kroger, 2003), an increasing reliance on peers for emotional support and acceptance (Harter, Stocker, & Robinson, 1996), and a strong interest in engaging in behaviors that may increase popularity among peers (Cillessen, Schwartz, & Mayeux, 2011). Research and theory have suggested that perceptions of *popular* peers' behavior may exert an especially robust influence on adolescents' own risk behavior (Cohen & Prinstein, 2006; see also Cillessen et al., 2011), but this phenomenon has not yet been empirically tested for sexual behaviors.

Although peers (and perhaps especially popular peers) have been shown generally to exert strong influences on adolescents' behaviors, individual adolescents vary in the degree to which they acquiesce to conformity pressures. In other words, the extent to which perceptions of peers' behaviors influence one's own behaviors is likely dependent on the individual's level of *susceptibility* to peer influence. Leading sexual health theories that posit a direct link between peer norms and intentions to engage in sexual behaviors (e.g., Fishbein, 2000) do not explicitly acknowledge that individuals may vary in their level of conformity to those norms.

Additionally, little is known about how susceptibility may be related longitudinally to behaviors such as sexual intercourse. Most studies of susceptibility to peer influence on risk behaviors have relied on explicit self-reports, which likely generate biased assessments of susceptibility to peer influence (e.g., Allen, Porter, & McFarland, 2006; see also Prinstein & Dodge, 2008). Additionally, adolescents may have especially limited awareness of the extent to which social pressures and norms influence their own sexual attitudes and behaviors, given the bombardment of conflicting messages about sex that teens receive from a multitude of sources (e.g., L'Engle et al., 2006).

To overcome limitations of prior work, researchers have recently begun to develop experimental paradigms, which yield *in vivo*, performance-based measures of peer influence susceptibility that are unaffected by the biases involved in explicit self-reports. For example, Allen and colleagues (2006) designed a paradigm in which adolescents were asked to participate in a hypothetical decision-making task, first alone, and again after being exposed to a close friend's differing opinions. Susceptibility was operationalized as the extent to which adolescents changed their initial decision after being exposed to the peer's differing opinion. Susceptibility was concurrently associated with higher odds of externalizing behavior and sexual intercourse, and also moderated the association between peers' substance use and adolescents' own substance use, such that friends' substance use was more strongly associated with one's own use among more highly susceptible teens. However, longitudinal analyses did not reveal susceptibility to be a significant prospective predictor or moderator of sexual or other behaviors.

Using a different innovative experimental paradigm to yield an *in vivo* measure of peer influence susceptibility, Prinstein, Brechwald, and Cohen (2011) found that susceptibility moderated the longitudinal associations between peer norms and adolescents' own deviant behaviors. In this "chat room" paradigm (Cohen & Prinstein, 2006), adolescents believe they are interacting with real peers in an Internet chat room, while in reality they are interacting with pre-programmed electronic confederates ("e-confederates") who endorse risk behavior. Susceptibility is operationalized as the extent to which adolescents change their responses to risk scenarios (compared to their baseline responses to identical scenarios) after being exposed to the high-risk responses of e-confederates. In preliminary work using this paradigm, Prinstein and colleagues found that susceptibility moderated the longitudinal association between perceptions of one's best friend's behavior and adolescents' own deviant behavior.

Research on peer and friendship influences on adolescent reproductive health includes studies of teen perceptions of peer attitudes and behaviors as well as peer reports of behaviors. These studies show influences of peer sexual activity, substance use, educational aspirations, and peer and friendship networks on sexual behaviors among adolescents, with higher risk peers predicting earlier sex and poorer contraceptive use.

## Perceptions vs. Behaviors

A longitudinal study of male and female adolescent participants in an urban, STI and pregnancy intervention program found that teens who reported having friends who favor postponing the initiation of sexual intercourse were more likely themselves to delay the onset of sexual intercourse (Carvajal et al., 1999). Similarly, earlier perceived peer sexual debut was associated with an increased likelihood of having had sex and younger age of sexual initiation in a sample of black and Hispanic teens in Alabama, New York City, and San Juan, Puerto Rico from the 1990s (Whitaker & Miller, 2000). Adolescents who believe that their peers do not use condoms or that peers do not like using condoms are less likely to use condoms (in bivariate analyses) (Whitaker & Miller, 2000), while adolescents who believe that their peers practice or support condom use during sexual intercourse are less likely to be sexually experienced and are more likely to report higher levels of condom use (Boyer et al., 1999, DiClemente et al., 1996). Adolescents' perceptions about their peers' sexual activity norms for condoms are related to teen sexual behavior more strongly among teens who have not talked to a parent about initiating sex or about condoms than among teens who have (Whitaker & Miller, 2000). Peer Sexual Activity The perception that peers are sexually active increases with age (Alexander & Hickner, 1997). Adolescents who report believing that most of their peers have had sex are more than twice as likely to report having a high intention to initiate sexual intercourse in the coming year (Kinsman et al., 1998). Believing that peers endorse and engage in sexual intercourse was associated with an increased incidence of teen sexual intercourse for male and female adolescents receiving health care at private family practices in Michigan (Alexander & Hickner, 1997). Sexually experienced adolescents under the age of 15 were more likely to report that their peers were also sexually experienced compared to sexually inexperienced adolescents of the same age in samples of male and female African American adolescents in Philadelphia (Jaccard, Dittus & Litardo, 1999) and male and female, white, black, Hispanic, and Asian sixth-grade students in 14 public schools in Philadelphia in 1994 (Kinsman et al., 1998). In a longitudinal study of middle school students in an urban area of Northern California, adolescents who reported having a greater number of friends who endorse having early sexual intercourse were more likely to have had sex (Marin et al., 2000). Similarly, having a best friend who is sexually experienced increases the likelihood of sexual experience among adolescent females (Lock & Vincent, 1995), and having sexually experienced friends is associated with a younger age at first intercourse among males (Miller, Norton, et al., 1997). Teens who are more likely to be sexually experienced and who report a greater number of sexual partners are also more likely to have a greater percentage of sexually active friends (Whitaker & Miller, 2000).

## Peer Substance Use

Having peers who use substances or thinking that peers use substances are sexual risk factors for adolescents. Drinking alcohol, using marijuana, and having peers who drink and have substance use problems are all strongly associated with sexual experience among both males and females aged 14-18 who are the oldest children of young mothers in a national survey (the NLSY 1979) (Kowaleski-Jones & Mott, 1998). Black adolescent females who participated in the inhome interviews of the first wave of the Add Health survey in 1995-1996 and reported having a large number of friends who drink are also more likely to have had sexual intercourse (Blum, Beuhring & Rinehart, 2000). Similarly, a longitudinal study shows that having more friends who engage in problem behavior and problem drinking is associated with an increased risk of sexual initiation for Hispanic adolescents (Costa et al., 1995). Drinking alcohol and spending time with friends who drink are independently linked with nonuse of birth control among sexually experienced females (Kowaleski-Jones & Mott, 1998). A survey of sixth grade students in public schools in Philadelphia found that sixth graders who perceived that older adolescents used alcohol were more likely to have had sexual intercourse (Kinsman et al., 1998). Adolescents who have initiated sexual activity are more likely than their sexually inexperienced peers to report that "most kids they know" start using alcohol and cigarettes at 13 or 14 years old (Kinsman et al., 1998). Peer Educational Aspirations Recent research indicates that low-risk peers (peers who are more engaged in school and less engaged in delinquent behavior) have a protective influence on sexual debut and adolescent pregnancy for adolescent girls in a nationally representative sample (Bearman & Brückner, 1999). Low-risk male and female best friends of adolescent girls protect against sexual debut, while high-risk male and female best friends increase the risk of sexual initiation for adolescent girls (Bearman & Brückner, 1999). This study suggests that for adolescent girls, the risk status of her female friends is a more important protective factor in determining adolescent pregnancy risk than is her own individual risk status—adolescent girls with low-risk female friends are at a lower risk for pregnancy while adolescent girls with high-risk male friends are at an increased risk for pregnancy (Bearman & Brückner, 1999). Having a high proportion of achieving friends (friends who think or hope they will go far in school) in adolescence reduced the risk of being involved in adolescent pregnancy in a sample of adolescents in 150 public high schools in two upstate New York counties from the 1980s and early 1990s (Kasen, Cohen, & Brook, 1998). Sexually

inexperienced adolescents were more likely to have high-achieving peers (peers enrolled in higher levels of mathematics courses), and having higher achieving peers predicted subsequent timing of age at first voluntary sexual intercourse for white boys but not white girls in a longitudinal study of youth in Michigan from the 1980s and early 1990s (Meschke et al., 2000). Similarly, among white adolescents in a longitudinal study of middle and high school students in a large, metropolitan school district in the western United States, having relatively more friends who engage in problem behaviors was associated with an earlier age of sexual initiation (Costa et al., 1995). Relationship with Peers One national-level study of school-age teens suggests that risk characteristics of an adolescent girl's close friends and larger peer group have a greater influence on her sexual debut than the characteristics of her best friend (Bearman&Brückner, 1999). Adolescents who have strong peer affiliations are more likely to be sexually experienced and are at a greater risk for STIs (Boyer et al., 1999), while teens who are not part of a peer group are less likely to have experienced sexual debut (Bearman&Brückner, 1999).

Alternatively, longitudinal data show that girls who are more popular, "in the leading crowd" in their schools, and who have older friends are more likely to have experienced sexual debut than other girls (Bearman&Brückner, 1999). Similarly, placing more importance on popularity is associated with an earlier age at first voluntary sexual intercourse among both males and females (Meschke et al., 2000). In addition, a longitudinal study in seven western states shows that adolescents who reported high levels of bonding (with family, friends, school and community) were less likely to have had sexual intercourse in the past month (McBride et al., 1995). Summary: Peers Adolescents appear to respond strongly to peer influences on their reproductive health behaviors. Teens with sexually active friends are more likely to have sex themselves and to have had multiple partners. In contrast, adolescents whose friends favor delayed initiation tend to delay sexual debut themselves. Not only are actual peer behaviors important, but even the perception of peer behaviors is also influential. Teens experience earlier sexual initiation if they believe their peers are having sex. Adolescents who perceive that their peers dislike or avoid condom use are less likely to use condoms themselves. Actual or perceived substance use by friends is also linked to earlier age of sexual initiation and lack of contraceptive use. The characteristics of one's peers are important as well. Having older friends is related to increased risk of sexual activity. Teens report less sexual activity and lower risk of pregnancy if their friends have high educational aspirations. Finally, the benefits of positive parent-child relationships are not limited to one's own individual experience. Teens report healthier, more responsible reproductive behaviors if they have friends who enjoy close relationships with their own parents.

### **Friends and Peers**

Like siblings, friends are "socializing agents," who set standards of conduct and serve as role models, thus shaping the development of sexual attitudes and norms (East, Felice et al. 1993). A study of minority adolescents found that the number of sexually active girlfriends was positively associated with permissive sexual attitudes, intentions for future sexual activity, and nonmarital childbearing (East, Felice et al. 1993). Other risk behaviors have an impact as well. When a teen's friends are not attached to school, have poor grades, abuse drugs or engage in delinquent behaviors, there is a greater likelihood that the teen will become sexually active at an early age (East, Felice et al. 1993; Brewster 1994; Bearman, Bruckner et al. 1999; Kirby 2001).

### **Summary and Conclusions**

It is interesting to note that it is not only the actual behavior of peers, but the assumption of certain behaviors by peers, that influence adolescent sexual activity. The perception of normative sexual attitudes and behavior is closely associated to the teen's own attitudes and behavior. When teens believe – correctly or not – that their peers are having sex, they are more likely to have sex. When teens believe their peers support contraceptive use, they are more likely to use contraception (Whitaker and Miller 2000; Kirby 2001). The effect of peer influence may depend on the teen's other sources of information on sexual and reproductive health. A study of Hispanic and African American youth determined that peer norms were a great influence on sexual behavior among those who had not discussed condoms with their parents (Whitaker and Miller 2000).

Peer Influence Adolescents garner a wealth of misinformation from each other about sex. They also put pressure on each other to carry out traditional gender roles. Boys encourage other boys to be sexually active even if they are unprepared or uninterested. They must camouflage their inexperience with bravado, which increases misinformation; they cannot reveal sexual ignorance. Even though many teenagers find their early sexual experiences less than satisfying, they still seem to feel a great deal of pressure to conform, which means continuing to be sexually active. One study of rural tenth-graders found that the students overestimated the percentage of their peers who had ever had sexual intercourse, who had had

four or more coital partners, or who had used alcohol or drugs before their previous intercourse. The students underestimated the percentage of their sexually active peers who had used a condom during their most recent intercourse. These findings may indicate that more students engage in risky sex-related behaviors because they believe that their peers are doing the same, and fewer may be using condoms because of their belief that their peers are not using them .

## References

- [1] Alexander, E. & Hickner, J. (1997). First coitus for Adolescents: Understanding Why and When. *Journal of the American Board of Family Practitioners*, 10(2), 96-103.
- [2] Allen, J. P., Porter, M. R., & McFarland, F. C. (2006). Leaders and followers in adolescent close friendships: Susceptibility to peer influence as a predictor of risky behavior, friendship instability, and depression. *Development and Psychopathology*, 18, 155–172.
- [3] Bearman, P. & Brückner, H. (1999). Power in numbers: Peer effects on adolescent girls' sexual debut and pregnancy. Washington, DC: The National Campaign to Prevent Teen Pregnancy.
- [4] Brechwald, W. A., & Prinstein, M. J. (2011). Beyond homophily: A decade of advances in understanding peer influence processes. *Journal of Research on Adolescence*, 21, 166–179.
- [5] Buhi, E. R., & Goodson, P. (2007). Predictors of adolescent sexual behavior and intention: A theory-guided systematic review. *Journal of Adolescent Health*, 40, 4–21.
- [6] Boyer, C.B., Tschann, J.M., & Shafer, M. (1999). Predictors of risk for sexually transmitted diseases in ninth grade urban high school students. *Journal of Adolescent Research*, 14(4), 448-465.
- [7] Blum, R.W., Behring, T., Shew, M.L., Bearinger, L.H., Sieving, R.E., & Resnick, M.D. (2000). The effects of race/ethnicity, income, and family structure on adolescent risk behaviors. *American Journal of Public Health*, 90(12), 1879-1884.
- [8] Brewster, K. L. (1994). "Neighborhood context and the transition to sexual activity among young black women." *Demography* 31(4): 603-14.
- [9] Bearman, P., H. Bruckner, et al. (1999). Peer potential: Making the most of how teens influence each other. Washington, DC, National Campaign to Prevent Teen Pregnancy.
- [10] East, P. L., M. E. Felice, et al. (1993). "Sisters' and girlfriends' sexual and childbearing behavior: Effects on early adolescent girls' sexual outcomes." *Journal of Marriage and the Family* 55(November): 953-963.
- [11] Fishbein, M. (2000). The role of theory in HIV prevention. *AIDS Care*, 12, 273–278.
- [12] Centers for Disease Control and Prevention. (2012). Youth Risk Behavior Survey—United States, 2011. *Morbidity and Mortality Weekly Report*, 61(4), 24–29.
- [13] Cillessen, A. N., Schwartz, D., & Mayeux, L. (2011). *Popularity in the peer system*. New York, NY: Guilford Press.
- [14] Cohen, G. L., & Prinstein, M. J. (2006). Peer contagion of aggression and health-risk behavior among adolescent males: An experimental investigation investigation of effects on public conduct and private attitudes. *Child Development*, 77, 967–983
- [15] Carvajal, S.C., Parcel, G.S., Basen-Enquist, K., Banspach, S.W., Coyle, K.K, Kirby,D.B., & Chan, W. (1999). Psychosocial predictors of delay of first sexual intercourse by adolescents. *Health Psychology*, 18(5), 443-452.
- [16] Costa, F.M., Jessor, R., Donovan, J.E., & Fortenberry, J.D. (1995). Early initiation of sexual intercourse: The influence of psychosocial unconventionality. *Journal of Research on Adolescence*, 5(1), 93-121.
- [17] Jaccard, J., Dittus, P.J., & Litardo, H.A. (1999). Parent-adolescent communication about sex and birth control: Implications for parent-based interventions to reduce unintended adolescent pregnancy. In W.



- Miller & L. Severy (Eds.), *Advances in Population: Psychological perspectives*. London: Kingsley Publishers.
- [18] Kowaleski-Jones, L. & Mott, F.L. (1998). Sex, contraception and child-bearing among high-risk youth: Do different factors influence males and females? *Family Planning Perspectives*, 30(4), 163-169.
- [19] Kinsman, S.B., Romer, D., Furstenberg, F.F., & Schwarz, D. (1998). Early sexual initiation: The role of peer norms. *Pediatrics*, 102(5), 1185-1192.
- [20] Lock, S.E. & Vincent, M.L. (1995). Sexual decision-making among rural adolescent females. *Health Values*, 19(1), 47-58.
- [21] Prinstein, M. J., & Dodge, K. A. (2008). *Understanding peer influence in children and adolescents*. New York, NY: Guilford Press.
- [22] Prinstein, M. J., Brechwald, W. A., & Cohen, G. L. (2011). Susceptibility to peer influence: Using a performance-based measure to identify adolescent males at heightened risk for deviant peer socialization. *Developmental Psychology*, 47, 1167–1172.
- [23] Kirby, D. (2001). *Emerging answers: Research findings on programs to reduce teen pregnancy*. Washington, DC, National Campaign to Prevent Teen Pregnancy.
- [24] Harter, S., Stocker, C., & Robinson, N. S. (1996). The perceived directionality of the link between approval and self-worth: The liabilities of a looking glass self-orientation among young adolescents. *Journal of Research on Adolescence*, 6, 285–308.
- [25] Kasen, S., Cohen, P., & Brook, J.S. (1998). Adolescent school experiences and dropout, adolescent pregnancy, and young adult deviant behavior. *Journal of Adolescent Research*, 13(1), 49-72.
- [26] Kroger, J. (2003). Identity development during adolescence. In G. R. Adams, M. D. Berzonsky, G. R. Adams, & M. D. Berzonsky (Eds.), *Blackwell handbook of adolescence* (pp. 205–226). Malden, MA: Blackwell.
- [27] 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(1), 54-83
- [28] Marin, B.V., Coyle, K., Gomez, C., Carvajal, S., & Kirby, D. (2000). Older boyfriends and girlfriends increase risk of sexual initiation in young adolescents. *Journal of Adolescent Health*, 27, 409-418.
- [29] L'Engle, K. L., Brown, J. D., & Kenneavy, K. (2006). The mass media are an important context for adolescents' sexual behavior. *Journal of Adolescent Health*, 38, 186–192.
- [30] L'Engle, K. L., & Jackson, C. (2008). Socialization influences on early adolescents' cognitive susceptibility and transition to sexual intercourse. *Journal of Research on Adolescence*, 18, 353–378.
- [31] McBride, C.M., Curry, S.J., Cheadle, A., Anderman, C., Wagner, E.H., Diehr, P., & Psaty, B. (1995). School-level application of a social bonding model to adolescent risk-taking behavior. *Journal of School Health*, 65(2), 63-68.
- [32] Whitaker, D.J. & Miller, K.S. (2000). Parent-adolescent discussions about sex and condoms: Impact on peer influences of sexual risk behavior. *Journal of Adolescent Research*, 15(2), 251-273.
- [33] Meschke, L.L., Zweig, J.M., Barber, B.L., & Eccles, J.S. (2000). Demographic, biological, psychological, and social predictors of the timing of first intercourse. *Journal of Research on Adolescence*, 10(3), 315-338
- [34] Kotchick, B. A., Shaffer, A., & Forehand, R. (2001). Adolescent sexual risk behavior: A multi-system perspective. *Clinical Psychology Review*, 21, 493-519.

- [35] Houlihan, A.E., Gibbons, F.X., Gerrard, M., Yeh, H.C., Reimer, R.A. & Murry, V.M. (2008). Sex and the self: The impact of early sexual onset on the self-concept and subsequent risky behavior of African-American adolescents. *The Journal of Early Adolescence*, 28(1), 70-91. doi: 10.1177/0272431607308670
- [36] Waller, E.M. & DuBois, D.L. (2004). Investigation of stressful experiences, selfevaluations, and self-standards as predictors of sexual activity during early adolescence. *The Journal of Early Adolescence*, 24(4), 431-459. doi: 10.1177/0272431604268710
- [37] Baumgartner, J.N., Geary, C.W., Tucker, H. & Wedderburn, M. (2009). The influence of early sexual debut and sexual violence on adolescent pregnancy: A matched case control study in Jamaica. *International Perspectives on Sexual and Reproductive Health*, 35(1), 21-28.
- [38] Guttmacher Institute. (2012). Unintended pregnancies and resulting births remain common among young U.S. women. <http://www.guttmacher.org> Retrieved April 11, 2012.
- [39] Centers for Disease Control and Prevention. (2012). Teen pregnancy: The importance of prevention. <http://www.cdc.gov/teenpregnancy> Retrieved 4/11/12.
- [40] Campo, S., Brossard, D., Frazer, M.S., Marchell, T., Lewis, D. & Talbot, D. (2003). Are social norms campaigns really magic bullets? Assessing the effects of students' misperceptions on drinking behavior. *Health Communication*, 15, 481-497.
- [41] Dunleavy, V.O. (2008). An examination of descriptive and injunctive norm influence on intention to get drunk. *Communication Quarterly*, 56(4), 468-487. DOI: 10.1080/01463370802451695.
- [42] Rimal, R. (2008). Modeling the relationship between descriptive norms and behaviors: A test and extension of the theory of normative social behavior (TNSB). *Health Communication*, 23, 103-116.
- [43] Marshall, A., Scherer, C.W. & Real, K. (1998). The relationship between students' social networks and engaging in risky behaviors: The college tradition of "drink 'til you drop." *Journal of Health Communication*, 11(2), 34-31.
- [44] Stewart, L.P., Lederman, U.C., Golubow, M., Cattafesta, J.L., Walter Goodhart, F., Powell, R.L. & Laitman, L. (2002). Applying communication theories to prevent dangerous drinking among college students: The RU sure campaign. *Communication Studies*, 53(4), 381-399.
- [45] Kirby, D. (2001). Understanding what works and what doesn't in reducing adolescent sexual risk taking. *Family Planning Perspectives*, 33(6), 276-281.
- [46] Gillmore, M., Archibald, M., Morrison, D., Wilsdon, A., Wells, E., Hoppe, M., Nahom, D. & Nurowich, E. (2002). Teen sexual behavior: Applicability of the theory of reasoned action. *Journal of Marriage and Family*, 64, 885-897
- [47] Hollander, D. (2001). Perceptions of peer behavior predict whether Peruvian adolescents have had sex. *Family Planning Perspectives*, 27, 154-161.
- [48] Prinstein, M., Meade, C. & Cohen, G. (2003). Adolescent oral sex peer popularity and perceptions of best friends' sexual behavior. *Journal of Pediatric Psychology*, 28, 243- 249.
- [49] Sieving, R., Eisenberg, M., Pettingell, S. & Al, E. (2006). Friends' influence on adolescents' first sexual intercourse. *Perspectives in Sexual Reproductive Health*, 38, 13- 19.
- [50] Linkenbach, J.W. (1998). *Building a bridge: Applying the social norms approach to sexual health. The Bacchus & Gamma sexual responsibility manual*. Minneapolis, MN: Bacchus & Gamma Peer Education Network.
- [51] Gino, F., Ayal, S. & Ariely, D. (2009). Contagion and differentiation in unethical behavior. *Psychological Science*, 20(3), 393-398.



- [52] Hagman, B.T., Clifford, P.R. & Noel, N.E. (2007). Social norms theory-based interventions: Testing the feasibility of a purported mechanism of action. *Journal of American College Health*, 56(3), 293-298
- [53] Cialdini, R.B. & Goldstein, N.J. (2004). Social influence: Compliance and conformity. *Annual Review of Psychology*, 55, 591-621.
- [54] Ott, C.H. & Doyle, L.H. (2005). An evaluation of the small group norms challenging model: Changing substance use misperceptions in five urban high schools. *The High School Journal*, 8(3), 45-55.

Risk (-) and Protective (+) Factors	Feasibility of Changing	Possible Interventions To Change Factors
Peer		
Age		
- Older age of peer group and close friends	**	In general, pregnancy and STD prevention programs cannot easily affect the age of teens' peers. Some programs may be able to provide activities that encourage teens to interact with people their own age or encourage same-age friends in other ways.
Peer attitudes and behavior		
- Peers' alcohol use, drug use, deviant behavior	**	If friends can be reached, some pregnancy and STD prevention programs with a youth development emphasis may be able to reduce alcohol and drug abuse and other non-normative behavior.
- Peers' pro-childbearing attitudes or behavior	***	If peers can be reached, sex education programs can reduce pro-childbearing attitudes and behavior. If peers cannot be reached, programs can implement activities in small or large group settings that demonstrate peer support for avoiding pregnancy.
- Permissive values about sex	***	If friends can be reached, agencies can implement

		effective abstinence or sex and STD/HIV education programs that change permissive values and delay the initiation of sex. If peers cannot be reached, programs can implement activities in small or large group settings that demonstrate peer support for delaying sex.
- <i>Sexually active peers</i>	***	If friends can be reached, abstinence or sex and STD/HIV education programs can change permissive values about sex and delay the initiation of sex. If friends cannot be reached, programs can implement activities demonstrating that perceptions of peer sexual activity are typically exaggerated.
+ <i>Positive peer norms or support for condom or contraceptive use</i>	***	If friends can be reached, sex and STD/HIV education programs or clinic protocols can increase both support for condom and contraceptive use and actual use of condoms and contraceptives. If peers cannot be reached, programs can implement activities in small or large group settings that demonstrate peer support for condom and contraceptive use for sexually active teens.
+ <i>Peer use of condoms</i>	***	If peers can be reached, sex and STD/HIV education programs can increase condom use. If peers cannot be reached, programs can implement activities in small or large group settings that demonstrate peer support for condom use.

**Table 1**