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Longitudinal Influence of Perceptions of Peer and Parental Factors on African American Adolescent Risk Involvement

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ABSTRACT *To explore the long-term contributions of perceived peer and parental influences on adolescent risk and protective behaviors (sexual involvement, condom use, and drug use), we assessed self-reported behaviors and perceptions of peer risk involvement and parental supervision and communication among 383 low-income, urban African Americans aged 9 to 15 years at baseline over a 4-year period. Baseline perceptions of peer sexual involvement were significantly associated with youth sexual behavior at baseline and were predictive of sexual involvement through all 4 years of follow-up. Perceived parental monitoring was inversely correlated with sexual involvement through 3 years of follow-up. Perceptions of peer condom use were associated with increased levels of condom use at baseline and through 6 months of follow-up. Positive parental communication was correlated with increased condom use. Drug use was higher among youths who perceived peers or family members to be using drugs and was inversely correlated with increased parental monitoring and supervision. Stepwise regression revealed peer and parental influences for all three behaviors. Perceptions of both peer and parental behaviors influence long-term risk and protective behaviors of adolescents. Therefore, parents should be included in adolescent risk-reduction intervention efforts. Inclusion of friends and/or changing youth perceptions of peer involvement may also be effective intervention strategies.*

INTRODUCTION

Research findings supporting the influence of both parents and peers on adolescent risk and protective behaviors have been robust over the past four decades.[1–9] These relationships have been found across multiple ethnic niches;[10–12] with a vast array of behaviors, including sexual behaviors, substance use, drug use, school performance, and delinquency[9,10,13–19]; and in disparate gender and age groups.[12,20] Although in the past decade there have been relatively few attempts to simultaneously view the relative influence of parents and peers on different risk or protective behaviors, some earlier studies were constructed to address this issue. For example, parental and peer influences were explored among a predominantly Caucasian population with regard to drug use, political activism, sex, and drinking in the 1970s; investigators found that both peer influence and maternal nonconventionality were

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important contributors to adolescent behavior in these domains.[5] The investigators revisited the interface of peer and parental influences in the 1980s with regard to sexual initiation[6] and determined that virgins reported relatively greater parental influence compared to peer influence. However, by way of contrast, in a study conducted in the 1990s among African American youths, peer influences appeared to exert a particularly strong influence over sexual activity.[12]

As the literature on determinants of adolescent risk and protective behaviors has been developing, so too has our understanding of the various concepts of parent and peer influences. Among the ways in which a parent can directly and indirectly influence the behavior of a child are communication styles, supervision, and actual (or perceived) parental practices and attitudes with regard to specific risk and protective behaviors. Certain communication styles are characterized by warmth, but with clearly articulated demands or expectations. Such parenting styles have been associated with a lower frequency of adolescent risk involvement compared to styles characterized by high demands without warmth or by warmth without expectations.[21] "Supervision" of the youth by the parent (imposing limits or expectations on both when and where children may recreate as well as with whom) may both directly and indirectly influence their likelihood of involvement in risk behavior (e.g., by sending a "caring" message and by reducing risk opportunity).[22] Finally, the importance of actual or perceived parental views regarding certain risk behaviors—whether discerned through their expressed opinions or from observation of their practices, have been empirically validated[5] and are consistent with social learning theories of behavior.

Likewise, peers may influence adolescent risk behavior in a variety of fashions. Peer influence becomes increasingly important over time as part of the adolescent's development task to move away from the family. A significant body of literature supports the importance of perceived peer activity as both associated with adolescent risk behavior[12] and predictive of subsequent risk involvement.[19] For example, research has shown that pregnant adolescents have large numbers of friends and relatives who have become pregnant.[23]

The nature of sexual risks has changed substantially over the past two decades as a result of the acquired immunodeficiency syndrome (AIDS) epidemic. The opportunity for communication about risk and protective behaviors with parents or other adults may also have changed considerably as a result of increased media attention on the topic of parental roles in risk prevention. Our tools for assessing different communication styles and parenting styles (see below) have also developed during this time frame. Finally, recognition of cultural differences in parenting style,[10] peer associations, and the definition and meaning of risk and protective behaviors have evolved considerably. Thus, it is timely to reassess the combined effects of parenting and peer influences on several risk and protective behaviors, this time among a cohort of urban African American adolescents followed over a 4-year period.

METHODS

Participants

Data were obtained from 383 low-income, urban African Americans ages 9 to 15 years at baseline who had been followed for 4 years as part of an evaluation of a risk-reduction intervention, Focus on Kids (FOK). Youths had been recruited from nine recreation centers in urban, low-income areas of Baltimore City, Maryland.

FOK focuses on decision making with regard to safer sex and consists of eight weekly meetings (seven 90-min sessions conducted in the nine recreation centers and one all-day session conducted at a rural camp). Details of the intervention, which have been provided elsewhere,[24,25] are not repeated here because intervention effect is not a central focus of this study.

The study was approved by the Institutional Review Board at the University of Maryland. Research staff conducted introductory sessions at the nine recreation centers to describe the project and enrollment criteria. Potentially eligible and interested youths were given written materials and assent and consent forms to be signed by the youth and their legal guardian(s), respectively.

Measures

At baseline and subsequent follow-up periods, youths completed three sets of measures that were administered aurally and visually through a "talking" Macintosh computer at the recreation centers. The Youth Health Risk Behavioral Inventory (YHRBI) assesses perceptions of peer involvement in sexual intercourse, peer condom use, and peer drug involvement; perceptions of family drug involvement; and self-reported involvement in selected risk and protective behaviors, including sexual intercourse, condom use, and drug use. ("Drug use" included use of marijuana, cocaine, heroin, or other illicit drugs.) The questions assessing drug use referred to "the past 6 months," while those assessing condom use referred to the last episode of sex during the previous 6-month interval. The question regarding sexual intercourse referred to "the past 6 months" except at baseline, when the question assessed lifetime experience. Psychometric properties of the instrument have been reported in detail elsewhere[26] and are strong. There were five items in the peer sex scale, three in the peer condom use scale, five in the peer drug use scale, and four in the family drug use scale. The Cronbach α for the four subscales were .72, .65, .77, and .83, respectively.

Silverberg and Small's Parental Monitoring Scale[27] was used to assess parental monitoring. This six-item scale assesses youth perception that their parents or guardians usually know where the youth is, what he or she is doing, and with whom they are interacting. Response options range along a 5-point Likert scale from "always" (5) to "never" (1). The Cronbach α was .87.

Finally, we also employed the 20-item Parent-Adolescent Communication Scale[28] to assess both "open communication" and "problem communication." Responses range from "strongly agree" (5) to "strongly disagree" (1) along a 5-point Likert scale. The Cronbach α was .90 for "open communication" and .78 for "problem communication."

The YHRBI was administered at baseline and 6, 12, 18, 24, 36, and 48 months postintervention. The other two measures (Parental Monitoring Scale and Parent-Adolescent Communication Scale) were administered at baseline and at 1, 2, and 4 years postintervention. To increase the likelihood that the follow-up assessment for any individual child would occur as close to a 6-month interval as possible, the order of recreation centers followed a set schedule reproduced at each subsequent round. Youths were compensated for their efforts, with stipends ranging from $5 at baseline and increasing to $20 for the final assessment.

Analysis

First, baseline perceptions of peer risk involvement, parental monitoring, open communication, and problem communication were determined and categorized into

low, medium, and high groups by taking the bottom, middle, and high third of youths, respectively. The mean (SD) scores for low, medium, and high categories of the baseline perceptions regarding peers and parents are shown in Table 1. The three categories display a wide and statistically different range of scores for each of the perceptions assessed.

The relationships between these groupings of perception were then compared with self-reported involvement in risk (i.e., sexual intercourse and drug use) and protective behaviors (i.e., condom use) cross sectionally at baseline and subsequently over 4 years of follow-up.

Second, three stepwise logistic regression models were performed at each assessment period to assess the relative importance of baseline perceived peer and family factors in predicting baseline or subsequent risk/protective behaviors (i.e., sexual intercourse, condom use, and drug use). The independent variables in the logistic regressions included age, gender, intervention status, baseline perceptions of peer involvement (and, when relevant, family involvement), baseline perceptions of parental monitoring, and parent-adolescent communication (both open communication and problem communication). In addition, baseline sexual activity and baseline drug use were included as independent variables for the models predicting subsequent sexual intercourse and drug use, respectively. Baseline condom use was not included in the model predicting subsequent condom use because the condom use question in each assessment period was only answered by a subgroup of youths who reported sexual intercourse during the period.

RESULTS

General

Among the 383 African American youths, with a median age of 11 years, there were 213 (56%) males. Follow-up data were obtained from 301 youths at 6 months, 276 youths at 12 months, 263 youths at 18 months, 245 youths at 24 months, 178 youths at 36 months, and 141 youths at 48 months. Data were available for over 70% of youths from three or more assessments. Generally, those lost to follow-up were marginally older, were more likely to be male gender, and had been assigned to the control condition. While dropouts were marginally more likely to use drugs than those followed, these differences reached significance only for alcohol consumption. (See reference 29 for details.) At baseline, 138 (37%) of youths reported

TABLE 1. Mean (SD) scores for low, medium, and high categories of the baseline perceptions

	Low	Medium	High
Peer sex	9.88 (3.02)	15.87 (1.01)	21.25 (2.08)*
Peer condom use	4.75 (2.23)	9.87 (.94)	14.05 (1.01)*
Peer drugs	5.00 (.00)	7.77 (.98)	14.60 (3.32)*
Family drugs	4.00 (.00)	6.68 (.95)	14.27 (3.40)*
Open communication	27.09 (6.01)	37.37 (2.16)	46.85 (2.68)*
Problem communication	17.33 (4.07)	25.75 (1.68)	33.73 (5.30)*
Parental monitoring	14.94 (3.76)	23.93 (2.15)	29.31 (.87)*

*$P < .0001$.

ever having engaged in sex; 81 (28%), 93 (34%), 99 (38%), 104 (43%), 80 (47%), and 86 (61%) of youths reported engaging in sex during the previous 6 months at follow-ups at 6 months, 1 year, 18 months, 2 years, 3 years, and 4 years, respectively. Among sexually experienced youths, condom use rates at baseline and at the six follow-up assessments above were reported by 75 (65%), 53 (74%), 61 (74%), 66 (71%), 65 (67%), 52 (73%), and 47(63%), respectively. Drug use was reported by 26 (7%) at baseline and by 14 (5%), 24 (9%), 40 (15%), 67 (27%), 65 (38%), and 62 (44%) at the six follow-up assessments above (e.g., 6 months through 4 years of follow-up).

Bivariate Associations and Predictions

Correlates of Peer Sexual Behavior Baseline perceptions of peer sexual involvement were significantly associated with youth sexual behavior at baseline and were significant predictors of sexual involvement through all 4 years of follow-up (see Table 2). At each assessment period, youths who thought at baseline that few of their friends were engaging in sexual activity were less likely to be sexually involved than youths who thought that some of their friends were sexually active. These last-mentioned youths were less likely to be sexually involved than youths who thought that most of their friends were sexually involved.

The inverse correlations between baseline perceptions of parental monitoring with adolescent sexual activity were significant at baseline and at 12 months. The trend remained apparent through 36 months of follow-up. Baseline perceptions of open communication predicted decreased sexual involvement through 2 years of follow-up, although these differences were only significant at 24 months. Higher levels of problem communication were only significantly associated with increased sexual involvement at 24 months.

Correlates of Condom Use As shown in Table 3, higher perceptions of peer condom use were correlated with increased use of condoms at baseline and predicted higher levels of use at 6 months. Perceptions of high levels of parental monitoring were predictive of higher rates of condom use at 12, 18, and 36 months. Open communication was correlated with high rates of condom use at baseline and predicted higher use rates at subsequent intervals; these differences were significant at 12 months. Problem communication was not associated with differential rates of condom use.

Correlates of Drug Use Baseline perceptions of high peer drug involvement were significantly associated with drug use rates at baseline and at 6 and 24 months (see Table 4). Perceptions of family drug involvement were associated with increased rates of drug use by the youth at baseline and at 6 and 12 months. Low rates of perceived parental monitoring were predictive of high drug use rates at 6 months. Open communication was inversely associated with drug use rates at baseline and 18 months. Baseline perceived medium levels of problem communication were associated with high rates of drug use at 48 months.

Regression Analyses

The stepwise regression model (see Table 5) revealed different risk and protective profiles for the three dependent variables. With regard to sexual activity, in addition to baseline sex, male gender, and older age, baseline perception of peer sexual

TABLE 2. Association between sexual behaviors, as number (%) of youths engaging in sex, over 4 years with baseline perceptions of peer and parental factors

	Peer sex			Parental monitoring			Open communication			Problem communication		
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
Baseline	25 (19)	41 (39)	55 (51)*	48 (53)	42 (39)	15 (18)*	40 (45)	32 (34)	35 (34)	30 (31)	42 (43)	35 (36)
6 Months	16 (15)	23 (28)	37 (46)*	20 (30)	22 (30)	12 (18)	21 (32)	16 (23)	19 (26)	15 (26)	23 (30)	19 (24)
12 Months	17 (17)	30 (39)	37 (48)*	25 (38)	27 (37)	13 (21)†	26 (38)	20 (30)	22 (30)	21 (34)	19 (29)	28 (35)
18 Months	26 (25)	34 (49)	30 (44)†	26 (43)	25 (36)	19 (31)	25 (40)	27 (44)	19 (27)	25 (41)	24 (42)	22 (29)
24 Months	26 (26)	34 (49)	35 (59)*	28 (44)	33 (49)	16 (31)	31 (49)	31 (49)	16 (28)§	16 (30)	34 (54)	28 (41)§
36 Months	22 (33)	20 (43)	29 (69)‖	21 (54)	19 (40)	13 (34)	13 (37)	23 (49)	18 (42)	18 (49)	21 (45)	15 (37)
48 Months	26 (47)	29 (71)	24 (71)§	17 (63)	22 (63)	20 (54)	23 (66)	18 (55)	21 (60)	17 (57)	24 (73)	21 (53)

*$P < .0001$

†Test for linear association was significant ($P < .05$).

‡$P < .01$.

§$P < .05$.

‖$P < .001$.

TABLE 3. Association between condom use, as number (%) of sexually active youths using condoms, over 4 years with baseline perceptions of parental and peer factors

	Peer Condom Use			Parental monitoring			Open communication			Problem communication		
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
Baseline	14 (45)	29 (63)	32 (84)*	23 (58)	23 (64)	8 (57)	17 (50)	16 (57)	23 (79)†	17 (74)	18 (49)	21 (68)
6 Months	7 (44)	16 (73)	25 (89)*	10 (59)	14 (70)	8 (80)	11 (58)	12 (92)	11 (65)	10 (71)	16 (76)	8 (57)
12 Months	12 (80)	22 (76)	19 (79)	13 (57)	20 (77)	8 (89)‡	11 (48)	14 (88)	19 (86)*	14 (70)	14 (82)	16 (67)
18 Months	21 (72)	21 (70)	17 (74)	11 (46)	16 (67)	15 (88)†	14 (56)	16 (67)	12 (75)	17 (71)	11 (55)	14 (67)
24 Months	15 (60)	23 (64)	22 (82)	18 (75)	16 (49)	12 (80)†	15 (54)	21 (70)	9 (60)	9 (56)	20 (63)	16 (64)
36 Months	13 (72)	19 (68)	14 (93)	11 (65)	12 (67)	18 (83)	9 (75)	15 (75)	12 (75)	14 (82)	12 (63)	10 (83)
48 Months	15 (60)	12 (55)	16 (76)	12 (71)	11 (61)	10 (63)	14 (74)	8 (50)	12 (67)	7 (50)	13 (65)	14 (74)

*$P < .01$.

†$P < .05$.

‡Test for linear association was significant ($P < .05$).

TABLE 4. Association of drug use, as number (%) of youths reporting use, over 4 years with baseline perceptions of peer and parental factors

	Peer condom use			Family drug use			Parental monitoring			Open communication			Problem communication		
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
Baseline	4 (3)	7 (7)	15 (18)*	7 (4)	6 (8)	13 (14)†	9 (10)	8 (7)	3 (4)	12 (14)	4 (4)	4 (4)†	3 (3)	8 (8)	9 (9)
6 Months	1 (1)	3 (4)	10 (14)*	4 (3)	3 (6)	7 (10)‡	8 (12)	2 (3)	1 (2)†	3 (4)	3 (4)	4 (5)	1 (2)	6 (8)	3 (4)
12 Months	4 (3)	8 (11)	8 (13)†	4 (3)	6 (11)	10 (15)§	6 (9)	8 (11)	1 (2)	7 (10)	4 (6)	5 (7)	4 (7)	4 (6)	8 (10)
18 Months	14 (12)	12 (17)	11 (18)	15 (12)	8 (16)	14 (22)	6 (10)	12 (17)	7 (11)	10 (16)	12 (20)	4 (6)†	8 (13)	9 (16)	9 (12)
24 Months	22 (20)	24 (39)	16 (29)†	32 (25)	12 (27)	18 (31)	16 (25)	18 (27)	10 (19)	16 (25)	16 (25)	13 (23)	14 (26)	14 (22)	17 (25)
36 Months	26 (37)	20 (41)	11 (29)	32 (40)	9 (27)	16 (38)	14 (36)	16 (34)	13 (33)	12 (33)	14 (30)	18 (42)	12 (32)	17 (36)	15 (36)
48 Months	25 (39)	20 (57)	12 (38)	30 (44)	15 (52)	12 (36)	12 (44)	15 (42)	13 (35)	16 (46)	13 (39)	14 (39)	9 (29)	20 (61)	14 (35)†

*$P < .0001$.

†$P < .05$.

‡Test for linear association was significant ($P < .05$).

§$P < .01$.

TABLE 5. Results of stepwise logistic regression (variables in the final equation and their associated ratio)

	Sex		Condom use		Drug use	
	IV	OR	IV	OR	IV	OR
Baseline	Gender	.11*	Peer communication	2.80†	Peer drugs	2.96†
	Age	1.62*	Open communication	1.97‡	Open communication	.46‡
	Peer sex	1.80†				
	Open communication	.62†				
6 months	Gender	.24†	Peer communication	4.39‡	Age	1.65‡
	Baseline sex	8.94*	Parental monitoring	4.30‡	Monitoring	.24‡
	Peer sex	2.18†				
12 months	Gender	.34‡	Gender	.11‡	Age	1.91†
	Age	1.48†	Age	1.62‡	Family drug use	2.42‡
	Baseline sex	2.26‡	Open communication	4.93†		
	Peer sex	2.11†				
18 months	Gender	.26§	Intervention	4.98‡	Age	1.40‡
	Baseline sex	3.11†	Monitoring	4.50†	Family drug use	1.93‡
	Peer sex	1.57‡				
24 months	Gender	.29§			Gender	.38‡
	Age	1.50§			Age	1.56§
	Peer sex	1.72‡				
	Open communication	.62†				
36 months	Baseline sex	3.08†			Age	1.39†
	Peer sex	2.02†				
48 months	Baseline sex	6.49†	Intervention	4.76‡		

IV, independent variables.
*$p < .05$.
†$p < .01$.
‡$p < .001$.
§$p < .0001$.

activity was a consistently strong predictor through 36 months of follow-up. Baseline perceptions of open communication were inversely correlated with sexual activity at baseline and at 24 months.

For correlates and predictors of condom use, baseline perceived peer condom use was significantly associated with condom use at baseline and at 6 months of follow-up, while two parental monitoring indices (open communication and parental monitoring) were positively correlated with condom use through the first 18 months of follow-up. Older age and female gender were the only significant predictors of condom use in the model at 1 year. Only intervention status was correlated with increased condom use in the last 2 years of follow-up.

Perceived peer drug use was significantly associated with drug use at baseline, while perceived baseline family drug use was an important predictor of drug use at 12 and 18 months. Other indices of parental supervision were significant correlates of low rates of drug use at baseline (open communication) and at 6 months (parental monitoring). Older age was also an important predictor of drug use throughout the follow-up period. Male gender was a significant risk factor at 24 months only.

DISCUSSION

Significance of the Findings

Consistent with the literature over the last four decades,[1–9] both peers and parents influence adolescent risk and protective practices in several behavioral domains. The finding from this study that the influence of baseline perceptions regarding peer and parental factors is powerful and enduring, extending in some cases through 4 years of follow-up, confirms findings from earlier decades.[6] As noted in the introduction, the finding that peer influences on sexual activity may be stronger than parental influences has been suggested previously, as least among African Americans,[12] and is consistent with the developmentally appropriate need for increased intimacy and peer involvement among adolescents. In addition, these data provide evidence that, beyond perceived parental communication and supervision, perceived parental behaviors (in this case, drug use) are also powerful predictors of adolescent risk involvement.

Several of the findings in the present study were not consistent with the earlier literature; these differences may reflect historical cohort differences or cultural differences since the population in this study was African American, and many of the previous studies had been conducted among Caucasian populations. The findings through both bivariate and regression analyses of a strong influence of perceived peer behavior with regard to sexual initiation are somewhat at variance with the earlier literature. Virginal youths in the 1970s, predominantly Caucasian, differed from their nonvirginal peers in that they reported greater parental influence than peer influence.[6] In the current study, open communication and increased parental monitoring were not strong predictors of sexual abstinence. This difference may reflect the fact that early onset of sexual activity was not normative in the 1970s population (all youths reported being virgins at the beginning of the study, and average age of sexual onset was 17 to 18 years),[6] but appears to be more so in the present population (e.g., more than a third of youths were already sexually experienced at baseline, and average age of onset was between 12 and 14 years).

Several of the findings with regard to condom use varied, at least in part, from those previously reported. First, the finding that advancing age was positively associated with condom use was somewhat surprising since the extant literature, including studies conducted among African Americans, indicates that, as youths age, they tend to be less likely to use condoms.[12,30] However, in one of the studies, older youths who continued to perceive that their friends were using condoms did continue to use them.[12] Consistent with this finding, the data in the present study reveal that more older youths (i.e., those 12 years of age or older at baseline) than younger youths (i.e., those 11 years of age or younger at baseline) perceived that most of their friends used condoms (32% versus 19%, $P < .0001$). That is, although these findings are not consistent with the trend toward decreased condom use with age, since increasing rather than decreasing numbers of older youths compared to younger youths perceived their peers to be using condoms, the findings are logical and consistent with other studies. Second, in a cross-sectional study conducted among African American youths, we earlier reported that peer influences appeared to be stronger than parental influences.[12] In the present study, the same phenomenon was also observed cross sectionally. At the 6-month follow-up, both peer and parental factors (monitoring) were equally influential. However, at the 6-, 12-, and 18-month follow-ups, parental factors were more influential. These differences may reflect differences in the study design (cross sectional versus longitudinal) or repre-

sent an age effect since the median age of youths in the other study[12] was 11, while that in the present study was 11 at baseline (e.g., 13 at the 2-year follow-up).

For drugs, family factors, including communication, supervision, and modeling, were significant risk factors throughout the follow-up period. These findings are not consistent with those reported in previous decades regarding use of marijuana by Caucasians among whom there was evidence of greater peer influence compared to parental influences. These youth were more likely to model peer rather than parental models.[31] This difference may reflect variations in family members' substance use. That is, in situations in which family use is low, peer influence is more likely to be pro-drug than family influence; thus, peers will be the more likely coercive agent. In situations in which family use is perceived to be high, such as the present study, the more proximate influence of family may be stronger than that of peers. In fact, given that, in early adolescence, most youths were not using drugs during the first 2 years of follow-up, the stronger influence of family drug use is logical.

Potential Limitations of the Study

These data should be regarded as hypothesis-generating since they were collected as part of another study and require replication. These youths represent a convenience sample rather than a random sample; thus, they may or may not be representative of the community in which they live and/or a broader urban, low-income African American community. Risk behaviors and reports of peer and parental attitudes are by self-report of the youths without biologic or other external validation. Because not all youths completed all assessments, we were unable to employ growth curve analyses that would have taken full advantage of the longitudinal nature of the data.

Implications of the Findings

The implications of these data are important. Given their enduring influence on adoption of risk and protective behaviors among their adolescent children, parents should be included in intervention efforts. Likewise, efforts to include friends in interventions might be an effective mechanism to change behaviors. Finally, changing the perceptions of youths of peer—and parental—behaviors may be an effective intervention strategy.

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REFERENCES

1. Alexander CN, Campbell EQ. Peer influences on adolescent drinking. *Q J Stud Alcohol.* 1967;28:444–453.
2. Jessor R, Graves TD, Hanson RC, Jessor SL. *Society, Personality and Deviant Behavior: a Study of a Tri-ethnic Community*. New York: Holt, Rinehart, and Winston; 1968.
3. DeLamnter J, MacCorquodale P. *Premarital Sexuality: Attitudes, Relationships, Behavior*. Madison: University of Wisconsin Press; 1979.

4. Walsh RH, Ferrell MZ, Tolone WL. Selection of reference group, perceived reference group permissiveness, and personal permissiveness, attitudes and behavior: a study of two consecutive panels (1967–1971; 1970–1974). *J Marriage Fam*. 1976;38:495–507.
5. Jessor SL, Jessor R. Maternal ideology and adolescent problem behavior. *Dev Psychol*. 1974;10:246–254.
6. Jessor R, Costa F, Jessor SL, Donovan JE. Time of first intercourse: a prospective study. *J Pers Soc Psychol*. 1983;44:608–626.
7. Jaccard J, Dittus P. *Parent-Teen Communication: Toward the Prevention of Unintended Pregnancies*. New York: Springer-Verlag; 1991:2.
8. Stanton BF, Li X, Galbraith J, et al. Parental underestimates of adolescent risk behavior: a randomized, controlled trial of parental monitoring intervention. *J Adolesc Health*. 2000;26:18–26.
9. Ianazu J, Fox G. Maternal influence on the sexual behavior of teenage daughters. *J Fam Issues*. 1980;1:81–102.
10. Steinberg L, Mounts NS, Lamborn S. Authoritative parenting and adolescent adjustment across varied ecological niches. *J Res Adolesc*. 1991;1:19–36.
11. Steinberg L, Dornbusch SM, Brown BB. Ethnic differences in adolescent achievement: an ecological perspective. *Am Psychol*. 1992;47:723–729.
12. Romer D, Black M, Ricardo I, et al. Social influences on the sexual behavior of youth at risk for HIV exposure. *Am J Public Health*. 1994;84:977–985.
13. Dinges MM, Oetting ER. Similarity in drug use patterns between adolescents and their friends. *Adolescence*. 1993;28:253–266.
14. Rodgers JL, Billy JOG, Udry JR. A model of friendship similarity in mildly deviant behaviors. *J Appl Soc Psychol*. 1984;14:413–425.
15. Steinberg L, Fletcher A, Darling N. Parental monitoring and peer influences on adolescent substance use. *Pediatrics*. 1994;93:1060–1064.
16. Dombusch SM, Ritter PL, Leiderman PH, Roberts DF, Fraleigh MJ. The relation of parenting style to adolescent school performance. *Child Development*. 1987;58:1244–1257.
17. Giordano PG, Cernkovick SA, Pugh MD. Friendship and delinquency. *Am J Social*. 1986;91:1170–1202.
18. Ennett ST, Bauman KE. The contribution of influence and selection to adolescent peer group homogeneity: the case of adolescent cigarette smoking. *J Personality Soc Psychol*. 1994;67:653–663.
19. Billy JOG, Udry JR. The influence of male and female best friends on adolescent sexual behavior. *Adolescence*. 1985;20:21–32.
20. Romer D, Stanton BF, Galbraith J, et al. Parental monitoring and communication as influences on adolescent sexual behavior in high-risk urban settings. *Arch Pediatr Adolesc Med*. 1999;153:1055–1062.
21. Baumrind D. The influence of parenting style on adolescent competence and substance use. *J Early Adolesc*. 1991;11:56–95.
22. Crouter AC, MacDenid SM, McHale SM, Perry-Jenkins M. Parental monitoring and perceptions of children's school performance and conduct in dual- and single-earner families. *Dev Psychol*. 1990;26:649–657
23. Goldfarb JL, Mumford DM, Schum DA, Smith PB, Flowers C, Schum C. An attempt to detect "pregnancy susceptibility" in indigent adolescent girls. *J Youth Adolesc*. 1997;6:127–144.
24. Stanton BF, Li X, Ricardo I, Galbraith J, Feigelman S, Kaljee L. A randomized controlled effectiveness trial of an AIDS prevention program for low-income African-American youth. *Arch Pediatr Adolesc Med*. 1996;150:363–372.
25. Galbraith J, Ricardo I, Stanton BF, Black M, Feigelman S, Kaljee L. Challenges and rewards of involving community in research: an overview of the "Focus on Kids" AIDS-prevention program. *Health Educ Q*. 1996;23:383–394.
26. Stanton BF, Black M, Feigelman S, et al. Development of a culturally, theoretically and

developmentally based survey instrument for assessing risk behaviors among African-American early adolescents living in urban low-income neighborhoods. *AIDS Educ Prev*. 1995;7:160–177.
27. Silverberg SB, Small SA. Parental monitoring, family structure and adolescent substance use. Paper presented at: Meeting of the Society of Research in Child Development; April 18–20, 1991; Seattle, WA.
28. McCubbin HI, Thompson AI. *Family Assessment Inventories for Research and Practice*. Madison: University of Wisconsin; 1987.
29. Li X, Stanton B, Feigelman S. Impact of perceived parental monitoring on adolescent risk behavior over 4 years. *J Adolesc Health*. 2000;27:49–56.
30. DiClemente R. Psychosocial determinants of condom use among adolescents. In: DiClemente R, ed. *Adolescents and AIDS: a Generation at Risk*. Newbury Park, CA: Sage; 1992:34–51.
31. Jessor R, Jessor SL, Finney J. A social psychology of marijuana use: longitudinal studies of high school and college youth. *J Pers Soc Psychol*. 1973;26:1–15.