Adolescent Risk-Taking Behavior: A Review of the Role of Parental Involvement

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Adolescents' participation in potentially harmful, risk-taking behaviors has generated widespread public debate and has been the impetus for a voluminous literature and countless "fixes" proffered by a host of different disciplines. The risky behaviors in question include such categories as substance abuse, sexual behavior, reduced school performance, risky driving, violent behavior, and juvenile delinquency. The number of American adolescents participating in them is nothing less than staggering.

Substance abuse continues to be a popular activity for the youth of America. According to the Centers for Disease Control and Prevention (CDC), about one third of the adolescents surveyed in the 1997 Youth Risk Behavior Surveillance Report (YRBS)[1] reported consuming 5 or more drinks of alcohol at least once in the 30 days preceding the survey. The prevalence of tobacco use among adolescents has escalated in the past several years. In 1995, it was estimated that approximately 90% of all initiation of tobacco use occurs among persons younger than 18 years.[2] The 1997 YRBS indicated that 70.2% of the students surveyed had tried smoking. This same report indicated that within the sample of adolescents surveyed, 47.1% had used marijuana in their lifetime, and 8.2% had used cocaine. Among students surveyed by the CDC, 17% reported the use of other illegal drugs (LSD, PCP, "ecstasy," mushrooms, "speed," "ice," or heroin). Nationwide, 16% of the students surveyed reported the use of some form of inhalant to become intoxicated during their lifetime.

According to the 1997 YRBS,[1] 48.4% of US students surveyed in grades 9 through 12 had engaged in sexual intercourse in their lifetime, and 16% of these students had sexual intercourse with 4 or more partners. Approximately 7% of those students who were sexually active had initiated sexual intercourse before 13 years of age. In consequence, each year, approximately 1 of 10 teenaged girls becomes pregnant, and 1 of 6 adolescents contracts a sexually transmitted disease. Acquired Immune Deficiency Syndrome (AIDS) has become the sixth leading cause of death for teenagers and young adults between the ages of 15 and 24 years. Although recent evidence suggests that the rate of teenage childbirth is down in the United States, the above figures definitely indicate that there is much more work to be done in this arena.

In the United States, 30% of all deaths among youths and young adults are caused by motor vehicle crashes. Frequent high-risk driving behavior makes motor vehicle crashes the leading cause of death in youths between the ages of 15 and 20 years. The CDC in 1997 reported that 19.3% of students surveyed nationwide reported rarely or never wearing safety belts while riding in a vehicle driven by someone else.[1] Of equal concern, approximately 17% of those students surveyed by the CDC reported that they had driven a vehicle one or more times after drinking alcohol, and 36.6% of students nationwide had been a passenger in a vehicle driven by someone who had been drinking alcohol.

The prevalence of school failure and dropping out is also a major area of concern. As early as 1989, the Carnegie Council on Adolescent Development estimated that 1 in 4 adolescents was vulnerable to multiple high-risk behaviors, including school failure.[3] The consequences of this high-risk behavior have included fewer job prospects, lower salaries, and an increased likelihood of unemployment.[4] Those individuals who drop out of the educational system are also more likely to be welfare recipients, exhibit delinquent behavior, abuse substances, and engage in criminal activities.[4]

The conclusion: an alarming number of youths in America are engaging in risk-taking behaviors that are potentially harmful and even lethal. The implication of

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this conclusion is a future in which significant proportions of young adults are less equipped to function adaptively in society as responsible, productive adults.[4]

Intervention Attempts

Society has not ignored the plight of the ill-equipped adults of the future. Numerous causal inferences for adolescent risk taking have been made, and countless programs have been implemented in an effort to attack the causes and ameliorate those behaviors deemed problematic. Speaking of adolescent risk takers, Hersch[3] explains, "Theories abound on how to manage them, fix them, and improve them, as if 'they' were products off an assembly line: just tinker with the educational system, manipulate the drug messages, impose citywide curfews, make more rules, write contracts, build more detention centers, be tough" (p 13).[3] The media has dedicated extensive time and effort to the explication of the difficulties of being an adolescent in today's society.[4] As Dryfoos[4] explains, constituencies exist for all the categories of problem behavior, including academic competency, delinquency, substance abuse, sex and pregnancy, and mental health. Numerous "experts," publications, and even the government are available to answer questions in each of these domains. Yet, the problems with adolescent risk taking still exist.

Insufficient and ineffective parental involvement with their children has received a great deal of attention as a correlate to adolescent risk taking. There are many correlational studies in the scientific literature demonstrating the linkage between parental involvement (typically assessed through self-report measures) and this societal problem. On the other hand, there are few research studies evaluating attempts to actually encourage parental involvement to reduce adolescent risk taking. The available research suggests that involved parents who are warm, supportive, and consistent in their behavior and style of discipline can effectively reduce the probability that their child/adolescent will engage in risk-taking behaviors.[5,6] The research summarized below suggests that meaningful parental involvement may be the most viable approach for mitigating problem behaviors that occur during adolescence. There are many methodological and logistic difficulties associated with manipulating parental involvement as an experimental variable, and considerably more work is needed in this area.

A variety of definitions of *parental involvement* have evolved in the literature. The relationship that can be demonstrated between parental involvement and various adolescent behavior outcomes is dependent upon both the operational definitions of parental involvement and the outcome measures utilized.[7,8] Across the various theoretic or taxonomic approaches taken to address the concept of parental involvement, however, involvement behaviors appear to fall into 2 primary domains and a third minor domain: (1) parents interacting (that is, spending time) with their children; teaching, mentoring, coaching, supporting, sharing activities, and providing relevant information about risk-taking situations and how to avoid them, (2) parents reducing their children's access to risk-taking situations by monitoring their activities, and (3) parents espousing concern for their children's well-being.

Regardless of how parental involvement is defined or what particular risky behaviors are studied, the vast majority of the literature in this arena is correlational in nature, addressing the associations between levels of involvement and various adolescent risk-taking behaviors. There is very little reported research evaluating systematic attempts to increase parents' involvement with their children, especially at the earlier ages when critical behavior patterns and parent-child relationships are being established.

The remaining sections of this paper present the following:

1. A summary of representative correlational research that assesses the relationship between parental involvement and adolescent risk taking of various types
2. A summary of research reports we could find on strategies to mitigate adolescent risk-taking behaviors by attempting to promote greater parental involvement
3. General conclusions and a discussion of the implications for future research and initiatives

To develop this review of the empirical literature on the role of parental involvement in adolescent risk taking, we searched the following electronic databases**:** PsychLit, UnCover, ERIC, and PsycFIRST, using such search terms as *parental involvement, parent expectations, educational communication,* and *adolescent risk taking and delinquency*. We also searched the bibliographies of the literature found for other relevant contributions to the field. With a few important exceptions, we considered only empirical research (correlational or experimental) published in refereed, scientific journals

since 1990. We occasionally cite a nonempirical work for the insight it may bring to some relevant concept.

The following discussion presents some representative correlational studies that have been conducted to assess the relationship between parental involvement and adolescent risk taking in several important domains.

Substance Abuse

In the research literature on parental involvement and adolescent substance abuse, parental involvement has been defined in terms of both monitoring and interaction strategies. Citing several researchers (eg, Bingham and Crockett, 1996; Gottfredson, McNeil, and Gottfredson, 1991), Ramirez-Valles et al[9] note that low levels of parental involvement have been associated with a greater likelihood of adolescents engaging in problem behavior, including drug use and delinquent acts.

Numerous researchers have found poor parental monitoring to be linked to early exploration of drugs (eg, Ary et al,[10] Chilcoat and Anthony,[11] and Dishion et al[12]). Chilcoat and Anthony[11] examined whether the effects of parental supervision and monitoring could be sustained through late childhood and early adolescence. Citing previous research (ie, Chilcoat, Dishion, and Anthony, 1995), Chilcoat and Anthony[11] reported that high levels of supervision and monitoring were related to lower levels of initiating drug use in a sample population of 8- to 10-year-old children. Chilcoat and Anthony[11] found that in their sample of 900 urban youths, the most commonly used substances were alcohol (13.2%) and cigarettes (11.1%). Inhalants and marijuana followed with a prevalence of 3.9% and 1.6%, respectively. Data showed that youths in the lowest quartile of parental monitoring were 3 times as likely to initiate use of marijuana, cocaine, or inhalant drugs when compared with the highly monitored youths. Youths in the highest quartile of parental monitoring were found to delay the initiation of substance abuse by about 2 years. These authors concluded that effective monitoring practices may protect children against substance use, even when these youths are exposed to friends or other acquaintances who are users. Moreover, these researchers contend that the prevention of up to 20% of marijuana, cocaine, or inhalant use could be accomplished through increased parental monitoring in those children in the lowest 2 quartiles. This estimate is increased to 36% if the children in the lowest 2 quartiles could be increased to the highest quartile of parental monitoring.

In an 18-month longitudinal study, Ary et al[10] found that the number of parent/child coercive interactions, or aversive disciplinary interactions, served to shape the aggressive adolescent. Parental avoidance as a result of these coercive interactions and related changes in levels of discipline and monitoring serve to crystallize patterns of antisocial behavior in children. Children exhibiting these crystallized patterns of antisocial behavior are seen as more likely to experience failure in the academic arena, rejection by conventional peers, and subsequent gravitation toward affiliations with deviant peers. The increase in the number of deviant peer affiliations further reinforces antisocial behaviors, thereby increasing the probability that the child will engage in risk-taking and delinquent behavior.

Ary et al[10] found that both parental monitoring/family factors and peer influences were related to a general problem behavior construct. Low levels of family involvement, high levels of coercive interactions (conflict), and subsequent decreased levels of parental monitoring were associated with a greater likelihood of deviant peer affiliations. Furthermore, increases in the number of deviant peer affiliations were associated with an increased likelihood of adolescents' engaging in diverse high-risk behaviors, including substance abuse, academic failure, risky sexual behavior, and antisocial behavior. Ary et al[10] assert that the strong interrelationships among this diverse set of adolescent problem behaviors lend credence to the validity of a single problem behavior construct.

Melby and Conger[13] assessed the relationship between family management practices and tobacco use in male adolescents (n = 204). Parental childrearing behaviors were determined by the integration of parent, spouse, and student questionnaire responses and observer ratings of the first interaction. Specifically, the relationships between 2 dimensions of childrearing behavior, nurturant/involved behaviors and harsh/inconsistent behavior, and adolescent tobacco use were examined. These researchers also examined the relationships between social environment factors, including family member and peer tobacco use, and adolescent tobacco use. Harsh/inconsistent parenting practices, including hostility (coercive interaction between parent and adolescent), fathers' inconsistent discipline, and fathers' harsh discipline, were directly related to the number of the adolescents' peers using tobacco, as well as adolescent tobacco use. Nurturant/involved parenting

behaviors, including warmth/support, positive reinforcement, behavior monitoring, and standard setting, were inversely proportional to tobacco use.

Qualitatively different styles of parenting, including authoritarian parenting style, supportive parenting, and parent/adolescent communication or discussion, have also been shown to be good predictors of adolescent risk-taking behaviors, including substance abuse.[14,15] The available literature indicates that nonauthoritarian parenting styles are associated with a decreased likelihood of substance abuse. This finding suggests that it is not merely the amount of involvement, but the way in which it is carried out, that makes a difference in risk taking.

Taken as a whole, the correlational research on parental involvement (defined in terms of both degree and quality of interaction and monitoring) and adolescent substance abuse clearly suggests that these 2 variables are related.

Sexual Risk Taking and Pregnancy

As with substance abuse, both the nature of parent-child interaction and level of parental monitoring have received attention in the literature on sexual risk taking and adolescent pregnancy. As with substance abuse, the correlational research generally points to a direct relationship between level of parental involvement and reduced adolescent sexual risk taking.

Metzler et al[16] examined the relationship between several social context factors and adolescents' engagement in risky sexual behaviors. They found coercive parent-child interactions, or the amount of conflictual interactions between parent and child, to be associated with an increase in deviant peer affiliations and greater sexual risk-taking behavior. Parental monitoring, defined in terms of supervision provided by parents and parents' knowledge of the whereabouts of their adolescents, was found to be both directly and indirectly related to adolescents' engagement in sexual risk-taking behavior. The direct relationship between parental monitoring and sexual risk-taking behavior was attributed to the provision of greater access to adolescents' activities that is accomplished through consistent monitoring.

Not surprisingly, Metzler et al[16] also found parental availability to be directly related to parental monitoring. Consistent with this finding, increases in the number of parental figures available was associated with a decreased likelihood of engagement in risky sexual behaviors. Additionally, family involvement showed an inverse relationship with the occurrence of coercive interactions between adolescents and parents and was consequently indirectly related to risky sexual behavior.

Similarly, Scarmella et al[6] found parental warmth (parents' warmth, parent/child communication, quality time, parents encouraging independence, and prosocial behaviors) and involvement (child monitoring, discipline, amount of positive reinforcement) to be correlated with greater academic achievement and with fewer deviant peer affiliations. The combination of poor school performance and deviant peer affiliations was associated with increased engagement in risk-taking behavior and, more specifically, with a pregnancy by late adolescence. Additionally, these authors found an inverse relationship between parental warmth and involvement and risk-taking behavior and pregnancy status. These authors note that research in this area has also shown that parents whose interaction with their children includes consistent discipline, monitoring, and positive reinforcement are better able to clearly communicate their expectations about appropriate social networks for their children. Consequently, increased parental involvement is associated with decreased deviant peer affiliations.

Ramirez-Valles et al[9] examined the relationship between sexual risk behavior among youths and several predictors, including parental involvement (defined in terms of adolescents' report of the time spent with their mothers and fathers), and found that lower levels of parental involvement correlated with a greater likelihood of adolescents' engagement in sexual activity. Citing the work of several researchers (eg, Hogan and Kitagawa, 1985; Brewster, 1994; Cooksey, Rindfuss, and Guilkey, 1996; and Zelnik and Kanter, 1980), Ramirez-Valles et al[9] also note that family structure is related to level of parental involvement, with greater involvement when 2 parents are available. For example, African American women who live in intact families have lower pregnancy rates than those living in nonintact families.

These findings are consistent with research that suggests disruptions within families, like divorce, influence the timing of initiation of sexual activity.[17] Capaldi et al[17] found that an increase in the number of transitions occurring within the family context was associated with a decrease in the age at which adolescents initiated sexual activities.

High-Risk Driving

A disproportionate number of teenage drivers are involved in motor vehicle crashes. The crash rate of drivers between the ages of 16 and 19 is 3.8 times higher than that of older drivers. Consequently, it is not surprising that motor vehicle crashes are the single greatest health risk to adolescents.[1]

Adolescents' frequent engagement in high-risk driving has been attributed to inexperience and immaturity. The national experts at the Graduated Licensing Conference held at the University of Memphis[18] concluded that young drivers do not spend a sufficient amount of time under the supervision of a parent before obtaining their license, and the developmental immaturity of adolescents results in more frequent high-risk behavior while driving. Young drivers are more likely to engage in a wide variety of high-risk behaviors including speeding, refusing to wear safety belts, accelerating rapidly, following too closely, driving aggressively, and driving during more high-risk times (ie, nighttime). Immaturity also results in an increased susceptibility to peer pressure to engage in high-risk driving. Their opinion is substantiated by the finding that adolescents are more likely to be involved in crashes when other teenagers are passengers in the vehicle.[19-21] Interestingly, adolescent drivers rarely become involved in crashes when accompanied by a parent or adult.[22] These data suggest that adolescent drivers are capable of operating a motor vehicle safely but on occasion choose not to employ the skills they have acquired.

With the decrease in crashes occurring while adolescents are under supervision, the promotion of increased parental involvement with the early driving of teenagers is clearly appropriate. Graduated driver licensing programs are now in place in many states, and all of these programs mandate some form of parental supervision. For example, in California, Maryland, and Oregon, comprehensive graduated licensing programs require adolescents applying for their full license to present certification from a parent or legal guardian stating that he or she provided at least fifty hours of supervised driving practice. A decrease in both crash and conviction rates among young drivers followed implementation of these programs.[18]

Foss and Evenson[23] reviewed studies evaluating the effectiveness of graduated driver licensing programs and concluded that the logic and empirical bases for such programs are sound. However, the singular influence of increased parental involvement cannot be determined because that is only one component of these programs. Nevertheless, virtually all the existing data are consistent with the contention that parental involvement is strongly related to mitigating risky driving behavior.

Delinquency

The term *juvenile delinquency* has been used to describe multiple behaviors, including truancy, petty theft, cheating, promiscuity, underage drinking, and uncontrollability.[4] Dryfoos[4] suggests that a lack of social and emotional support within families is associated with an increase in the number of deviant peer affiliations. These deviant peer affiliations lead to a greater propensity to engage in "delinquent" and other high-risk behaviors. Several other predictors that are consistently associated with high risk for delinquency in repeated studies include early participation in antisocial activities, gender (being male seems to be a major predictor), substance abuse, school failure, and early initiation of sexual activity.[4]

In an examination of the correlates of crime among adolescents, Hanson et al[24] found several family relationship measures to be predictive of adolescent arrest. Hanson et al note that less-than-optimal family relationships, as determined by levels of intrafamilial conflict, dominance, affect, and supportiveness/defensiveness, are often associated with behavior problems in adolescents. For example, families of delinquents tend to exhibit more coercive interactions than families of nondelinquents. Additionally, higher rates of defensive styles of interaction and lower rates of supportive interactions have been linked to households with delinquent adolescents. Furthermore, family relations in the households of delinquent adolescents tend to be more antagonistic than those found between nondelinquent adolescents and their parents.

Hanson et al[24] found low levels of affection between mother and son and high rates of negative interactions (adolescents' successful interruption of mothers) to be predictive of an adolescent arrest record in father-absent families. Low rates of supportive verbalizations on the part of the mother were predictive of an adolescent having an arrest record. These findings are indicative of mother-son relationships characterized by minimal levels of warmth, affection, or support. Father-son relation-

ships characterized by cold and conflictual interactions were also found to be predictive of criminal activity.

In another study of juvenile felons, Henggeler et al[5] examined differences in the relationships of mother-son dyads with 3 types of youths: those who had been convicted of violent crimes, those who had been convicted of nonviolent crimes, and those who had no record of delinquency. They found that mother-son relationships in families with juvenile offenders were characteristically less warm than their non-offender counterparts. Furthermore, juvenile offenders experienced less positive communication and more negative communication with their family members than did non-offenders. Also, the results of the study suggest that violent juvenile offenders' relationships with their mothers are significantly worse than the mother-son relationships of nonviolent offenders. Henggeler et al note that although violent juvenile felony charges could precede decreases in parental positive/negative communication, the fact that 32% of the mothers of violent offenders had been previously charged with neglect makes the time precedence of violent felony charges less likely. Hence, mothers who exhibit warmth and engage in positive communication are less likely to have adolescents who engage in either violent or nonviolent offenses.

Borduin et al[25] examined the family interactions in lower-class African American families with delinquent and nondelinquent adolescent boys. The results of this evaluation again showed that families of delinquent adolescent boys were characteristically less warm and affectionate than their counterparts. Again, families of delinquent boys exhibited behavior characterized as more conflictual than families of nondelinquent boys. Parents of delinquent and nondelinquent boys exhibited opposite patterns of conflictual behavior independent of the content of the family interaction. The results of the study indicate that expressive interaction, defined in terms of discussion of emotional-social family issues, is associated with more conflict within the households of families of delinquent boys. These researchers assert that higher levels of expressive conflict are associated with a greater likelihood of marital disruption. Citing the work of Emery (1982), Borduin et al[25] note that marital discord may be a key determinant of risk-taking behavior in adolescents.

As with the other risk-taking domains, this sample of correlational research addressing juvenile delinquency and quality and quantity of parental involvement indicates that the two are related. The unique aspect of the work by Henggeler, Hanson, and their colleagues is that they also attempted to investigate actual strategies for increasing the quality and quantity of parental involvement in an attempt to reduce delinquency (see following discussion).

Academic Achievement: Methodological Considerations

As McNeal[26] notes, "the renewed focus on parental involvement is tied to reform movements for America's public schools" (p 118). In his discussion of parental involvement as social capital, McNeal explains that current national programs include parent involvement as one of the key elements of student success. Generally, research has supported the relationship between parental involvement and academic outcomes, particularly grade point average.[7] However, some of the empirical findings in the area examining the effects of parenting practices on academic achievement have been equivocal. This situation stems in part from variations in research design, specifically (1) a variety of operational definitions of parental involvement[15,27]; (2) a variety of operational definitions of academic achievement[7,8,15]; and (3) variations in the data sources for measures of parental involvement (eg, parents vs observations vs children).[8,28] This situation has led some researchers to the conclusion that the effects of methodological inconsistencies must be clarified before the relationship between parent involvement and various outcomes can be clearly understood.[7,26,27]

Academic Achievement: Relationship to Parental Involvement

The sections that follow summarize research investigating the relationship between parental involvement and academic achievement. The findings are organized by the 5 forms of parental involvement described by Christenson et al[15] and by Keith et al.[27]

The reader should be aware that much of the research suffers from the methodological issues described previously and that all of the work described in this section is correlational in nature. As with the other risk domains reviewed previously, it cannot be assumed that a positive relationship between parental involvement and academic performance means that the one *caused* the other.

Parent Expectations and Aspirations

Christenson et al[15] note that research consistently supports the general conclusion that academic achievement is correlated with high parental expectations. Indeed, research has found parents' expectations and aspirations for their children to be valid predictors of parental involvement and to be positively related to the children's academic achievement. (See, for example: Keith et al[8]; Keith et al[27]; Hoge et al[29].) However, because children's perceptions of high parent expectations also correlate with achievement, the actual parent expectations are confounded by the children's perception of those expectations.[8] Furthermore, Christenson et al[15] note that socioeconomic status and gender possibly serve as mediators between parental expectations and student achievement and that parents' expectations are influenced by the type of attribution parents make concerning their children's performance in school.

Using a large sample of eighth-grade students (n = 21,814), Keith et al[8] demonstrated that increased parental involvement correlated with higher achievement (performance on reading, math, science, and social studies achievement tests). Their findings pointed to a positive relationship between high levels of previous academic achievement and increased parental involvement (defined as parents' educational aspirations for their children, parent-child communication, and participation in school activities). Based on their findings, these authors concluded that parental involvement was a powerful influence on the academic achievement of eighth-grade students, a finding that was independent of socioeconomic status.

In a large follow-up study (n = 15,703), Keith et al[27] examined the relationship between parental involvement (aspirations and communication) and their children's high school grades. They found a significant relationship that was obtained across ethnic groups. Additionally, Keith et al addressed similarities and differences in parental involvement across gender. Parents in the study reported significantly higher aspirations for female children. Keith et al found that although parents were more involved with girls than boys, equal levels of involvement were associated with equal levels of achievement. This indicates that a strong relationship exists between parental involvement and academic outcomes, regardless of race or gender.

A longitudinal study conducted by Hoge et al[29] examined several family process measures (parental academic expectations, parental interest, parental involvement, and parent-child communication) as predictors of academic achievement (grade point average, school achievement tests) in a sample of sixth- and seventh-grade students (n = 300). These researchers concluded that family process factors are related to both grades (mean, R^2 = .17) and achievement test scores (mean, R^2 = .28). The strongest association was found between specific academic expectations and achievement test scores.

Providing a Home Structure for Learning

A home structure for learning refers to the actual home environment and the extent to which it encourages and supports academic achievement by students. Variables associated with a home structure for learning include such factors as time devoted to homework, verbal interaction, presence of books and educational materials, adult modeling of appropriate behaviors, and family rules about doing homework or amount of time spent viewing television.[8,15] In their review of the literature, Christenson et al[15] note that environments characterized by high levels of encouragement and frequent complex verbal interactions are associated with high levels of academic achievement and verbal aptitude.

The emotional environment of the home, or home affective environment, has also been associated with academic success. Citing the work of Estrada, Arsenio, Hess, and Holloway (1987), Christenson et al[15] note that a positive home affective environment, characterized by the degree of parental acceptance, nurturance, assurance, involvement, and emotional responsiveness, is related to an increased probability that students will pursue intellectually challenging tasks. In addition, a press for achievement in the family environment is related to higher grade point averages, as well as better performance on achievement tests. Ultimately, Christenson et al note that parents who are able to create positive home affective environments tend to have children who are successful in the academic arena, and these findings are not associated with the IQ, socioeconomic status, or gender of the student.

In a similar vein, Marjoribanks[30] found in a study of 330 11-year-olds that their perceptions of supportive family environments were predictive of educational outcomes. Family environment measures included parents' aspirations for their adolescents' educational/

occupational attainment, as well as adolescents' perceptions of these aspirations. Results indicated that parental aspirations for their adolescents' educational and/or occupational success were moderately correlated with actual educational and/or occupational attainment and occupational aspirations.

Communication Among Parents, Teachers, and Students

In a study of 362 high school juniors, Otto and Atkinson[7] examined the relationship between adolescent academic achievement and 2 general categories of parental involvement: (1) "connection" (ie, parent/child agreement, parent/child discussions, and parent/child career planning), and (2) "regulation" (ie, parental monitoring, after school supervision, parental regulation, and television viewing time). These categories are similar to the 2 major domains of parental involvement mentioned in the introduction: "interaction" and "monitoring." Measures included cumulative grade point average, score on the California Achievement Test (CAT), and self-reported misbehavior.

Of the 3 connection measures studied by Otto and Atkinson, parent/child agreement and parent/child discussions predicted adolescent grade point average. Of the 4 regulation measures, only parental monitoring of schoolwork predicted grade point average, and the relationship was negative. The inverse relationship between academic achievement and parental monitoring was attributed to the likelihood that parental monitoring practices are affected by academic performance. For example, McNeal[26] explains that in an effort to provide a positive home structure for learning, parents of adolescents who struggle academically tend to adopt parental monitoring practices more readily.

In an investigation involving data from 1052 schools that participated in the National Education Longitudinal Study, Sui-Chu and Willms[31] attempted to clarify the relative importance of parental involvement in the home and of parental involvement with the school. Specifically, home involvement included both parent/child discussion of school activities and parental monitoring of children's extracurricular activities. Contact between parents and school personnel, volunteering for school functions, and attending parent-teacher conferences or open-house meetings were identified as representative of school involvement. These researchers identified 4 factors that collectively accounted for 55% of the variance of parental involvement:

1. Home Discussion—included talking with parents and discussion of school program/activities
2. School Communication—included contact between parents and schools
3. Home Supervision—included limiting television viewing and going out, monitoring homework, and being home after school
4. School Participation—including volunteering at school and attending Parent Teacher Organization (PTO) meetings

These authors found that involvement at home, including discussion of school activities and helping students' plan their programs, was the dimension most highly related to academic achievement. Parents' participation in school activities was also found to have moderate effects on reading achievement.

Parent Participation in School Activities

Shared responsibility between parents and teachers has been recognized as necessary for positive academic outcomes.[15] In his examination of the degree to which parental involvement is predictive of behavior, McNeal[26] notes that previous research (eg, Lareau, 1989) suggests that both the existence of networks with other parents and communication with teachers and other school personnel are significant factors in determining a child's school achievement. According to this research, "cultural capital" is a strong determinant of academic performance, particularly for upper-middle-class children.

Using a similar approach and a large data set (>11,000) from the National Educational Longitudinal Study (1988), McNeal[26] also found that the influence of social capital was more likely for white, middle-class students from intact families. The explanation for this outcome was that minority parents are far less likely to initiate contact with educators due to previous negative experiences, a sense of intimidation that inhibits this communication, and the lack of resources available for minority students. Only one dimension of parental involvement, parent/child discussion, was consistently associated with improved achievement and reduced problematic behavior. In general, the effects of parental involvement on academic achievement were inconsistent. However, the reduction in

problematic behavior was generally significant. The study also indicated that discussions, PTO involvement, and monitoring were generally associated with positive behavioral outcomes.

Conclusions Concerning the Relationship Between Parental Involvement and Academic Achievement

Data generally show that increased parental involvement, regardless of how it is operationally defined, is associated with increased academic performance among children and adolescents. This is conventional wisdom in the teaching profession and attempting to solicit more involvement from parents is commonplace among teachers and school administrators. From a behavioral perspective, these attempts generally represent antecedents (ie, they occur before the desired behavior), which means that, by themselves, they are likely to be ineffective at producing behavior change. Unfortunately, systematic research into ways to manipulate incentives and consequences placed on parents to encourage increased involvement with their children is virtually nonexistent.

Recurrent Themes in the Literature

The Overlap of High-Risk Behaviors

Research on adolescents' engagement in risk-taking behavior has provided support for the existence of strong interrelationships between multiple adolescent problem behaviors, including antisocial behavior, tobacco, alcohol and drug use, risky sexual behavior, risky driving behavior, and school failure.[16] For example, research suggests that adolescents who engage in sexual activity are more likely to be involved in delinquent activities, partake in substance use, perform poorly in school, and associate with more deviant peers than their more conventional peers.[6] Delinquency and substance abuse have been found to increase the propensity for adolescents to become pregnant because they relate to a general tendency to engage in risk-taking behaviors, including promiscuous sexual behavior.[6] Indeed, in many ways truancy, school failure, risky sexual behavior, substance abuse, and delinquency are interrelated.[4] The co-occurrence of these high-risk behaviors suggests the need for an intervention that is effective across these domains. The correlational studies reviewed above indicate that efforts to increase parental involvement (defined in terms of both interaction and monitoring) might bring fruitful results.

Deviant Peer Relationships

The effects of association with peers who engage in socially unacceptable behaviors on adolescents' participation in these behaviors have been frequently described in the literature. Several studies provide evidence of the positive relationship between these deviant peer group affiliations and adolescents' participation in high-risk behaviors. For example, a study conducted by Metzler et al[16] found that several factors, including peer group participation in substance abuse and antisocial behavior, increase the likelihood that adolescents will engage in risky sexual behavior. Poorer monitoring and more coercive interactions with parents were associated with having more deviant peers and consequently were related to a higher propensity to engage in risky sexual behavior. Scarmella et al[6] found that adolescent sexual activity is significantly affected by relationships with peers. Moreover, these researchers found that an increase in the number of deviant peer affiliations was negatively related to academic competence, and lower levels of academic competence were associated with a higher propensity to become pregnant. Adolescents engaging in substance abuse are more likely to seek support from their peer group than from parents.[14] Allison et al[14] note that the available research suggests that deviant peer affiliations are significantly related to adolescent substance abuse.

Research suggests that increasing parental involvement may be an effective way to counteract the negative outcomes associated with deviant peer affiliations. Several studies propose that parents can indirectly shape their children's social networks. Scarmella et al[6] contend that parents can "structure their children's environment in ways that minimize opportunities to interact with peers who participate in or encourage activities of which parents do not approve" (p 1235). These researchers note that studies have supported the capability of parents to influence their adolescents to a greater degree than their peer groups and maintain this influence throughout the developmental cycle.[6] The available research indicates that an inverse relationship exists between the extent to which parents are

involved and the number of deviant peer relationships.[6]

Manipulating Parental Involvement

The literature summarized above clearly establishes the existence of a relationship between parental involvement (defined as both parent-child interaction and parental monitoring) and a wide range of adolescent risk-taking behaviors. In order to identify a causal relationship, future research should view parental involvement as a manipulable variable that has a potential mitigating effect on many of the high-risk behaviors discussed previously. Although various interventions, including those intended to increase parental involvement, may have some value for secondary and tertiary prevention, parental involvement has great potential for effective primary prevention. As mentioned previously, there is little experimental literature in this arena, and there is a clear and pressing need to identify some "best practices" for increasing parental involvement. In the following discussion, we have reviewed a few recent studies (including some of our own) that have attempted to accomplish this formidable task by empirically assessing interventions to encourage parental involvement. These studies are presented within the behavioral framework outlined for conceptualizing the 5 fundamental reasons why some parents engage in lower levels of involvement with their children. As will be seen, these studies have made an attempt to address some of these causes.

Why Parents Don't Always Do What They Are Supposed To

From a behavior analytic perspective, there are 5 general categories of reasons why anyone "doesn't do what he or she is supposed to." This list would, of course, be relevant to parents who are not adequately involved with their children to reduce their exposure to risk-taking situations:

1. They lack the capacity to do it.
2. They don't know what to do.
3. They don't know how to do it.
4. Something in the family or life context prevents them from doing it.
5. They don't want to do it.

It is clear from the above alternatives that parents who are not adequately involved with their children's lives can find themselves in that situation for a variety of reasons. There are, consequently, a variety of solutions for their dilemma.

Interventions to Increase Parental Involvement

We searched the literature for empirical studies that attempted to increase parental involvement by addressing one or more of the above 5 causes but found little relevant research. What follows is a discussion of the research we did find, organized in terms of addressing these 5 causes.

1. When parents lack capacity. A certain (low) proportion of parents are unable to become adequately involved with their children's lives because of cognitive or emotional problems (perhaps related to substance abuse or some other illness or condition) that prevent them from functioning in that role. Although departments of human services and the juvenile courts have removed many of these children from such situations, it is likely that many children are still under the influence of such parents. We found no empirical studies that addressed increasing the cognitive capacity of parents whose condition prevented them from effective parenting.

2. Not knowing what to do. A much larger proportion of parents fail to become involved with their children because they don't know what to do. Our experience with parent focus groups has repeatedly confirmed that many parents want to know the "right" thing to do with regard to the chore of relating to their adolescents and providing them with progressively more freedom. They often find themselves isolated from other parents, with no easy venues for getting advice and direction. This isolation, often fostered by their own children, combined with their reticence to jeopardize their children's social development ("I want my daughter to be popular"), often results in their children gaining increased access to risk-taking activities.

3. Not knowing how to do it. For other parents, it is not a matter of not knowing what to do but rather of not having the skill to carry it out. Knowing what to say to one's child about drugs, sex, dating, etc, is one thing; knowing how to initiate and maintain such conversations is something else entirely. Knowing that an adolescent should receive a sanction for drinking, violating curfew, or failing to do homework is not the same as knowing how to apply those sanctions in a meaningful way. Unfortunately, mentoring and scenario training in these skills are generally unavailable

to parents, and they are left to their own limited resources.

For the following discussion of intervention research that involved a "training" approach, we have combined causes (2) and (3). Efforts to educate parents regarding strategies for relating to their children, talking with them, monitoring their behavior, and applying positive and negative consequences would fall under this category. Studies addressing different types of risk-taking behavior are described below.

Juvenile Delinquency. Although there are numerous examples of organized attempts to educate parents regarding their children's risk-taking propensities (eg, MADD [Mothers Against Drunk Driving]), we found few experimental studies that actually assessed the effectiveness of such attempts. One example is the work by Henggeler et al,[32] who conducted some interesting intervention research designed to evaluate strategies for increasing parental involvement to reduce the incidence of juvenile delinquency. Known as the "family-ecological systems approach," it entails a multisystemic treatment of juvenile offenders and has been particularly effective in reducing behavior problems among adolescents.

The treatment involves extensive training and close monitoring of family members, especially with regard to the quality and quantity of interactions with at-risk children.

Participants in the study received either family-ecological treatment (n = 57), an alternative treatment (n = 23), or no treatment (n = 44). Identification of dysfunction, either within a single system (eg, the family) or between multiple systems (eg, family, peer group, school), allowed customized therapeutic interventions for the juvenile offenders assigned to family-ecological treatment. The alternative treatment administered was dependent on the psychosocial needs of the adolescent as determined by a member of the Youth Diversion Project staff. The resulting range of alternative treatments included family counseling, individual counseling, recreational social adjustment, alternative educational experiences, or other miscellaneous approaches. Dependent measures included individual measures (extraversion, neuroticism, social desirability, and several dimensions of child psychopathology), measures of self-reported family relations (affect, conflict, and dominance), and observational measures of family relations (affect, conflict, dominance, and defensive/supportive communications).

The results of the study included significant reductions in adolescents' deviant peer affiliations and conduct problems. Additionally, those juvenile offenders who received the family-ecological treatment manifested reductions in immaturity and anxious-withdrawn behaviors. Unlike those participants in the alternative treatment or control groups, adolescents in the ecological-treatment group became significantly more involved in family discussions and experienced warmer relationships with their mothers. In their evaluation of the efficacy of this approach to the treatment of juvenile offenders and their families, Henggeler et al[32] found that a reduction in behavior problems among adolescents could be achieved by changing the transactions within and between the applicable dysfunctional family systems. Furthermore, these authors maintain that the costs associated with the intervention are significantly less than the costs that would otherwise be accrued to the legal system for handling the high-risk adolescents.

Sexual Behavior. In an attempt to address the issue of adolescent sexual behavior, teen pregnancy, and the growing problem of sexually-transmitted diseases among adolescents, the school-based "sex education" movement in America has evolved through 5 unique generations. During the first generation, educators focused on providing children and adolescents with correct information about human sexuality (an antecedent-only strategy), the idea being that if they possessed accurate knowledge, they would be less likely to engage in sexual activities. The second generation was based on the philosophy that if children were taught values and given decision-making skills (an antecedent-only strategy), they would make less risky choices regarding their sexuality.

The third generation involved the abstinence-only or "Just Say 'No'" movement (an antecedent-only strategy). This effort, strongly supported by the federal government, was predicated on the notion that children and adolescents could be taught to abstain from sexual intercourse until marriage. The fourth generation focused on reducing sexual behaviors associated with contracting AIDS and other sexually transmitted diseases. This initiative was developed separately from the other sex education programs that were in existence. Its general approach was similar to the first generation, in that the programs tended to be knowledge based.

The fifth generation, currently in vogue, represents a synthesis of the other four. These programs have a rel-

atively narrow focus on sexual risk-taking behaviors, and they generally include information, decision-making, and social learning approaches toward the development of negotiation and "refusal" skills. (For a good discussion, see Kirby et al.[33])

In their review, Kirby et al[33] concluded that the effectiveness of school-based sex education has been fairly marginal, especially with adolescents who are already sexually active. Its greatest impact seems to be with postponing first intercourse for periods up to 18 months. Because all 5 of these approaches toward school-based sex education were largely antecedent-only interventions, it is not surprising that their impact has been limited.

A discussion of the literature evaluating these various approaches to sex education is beyond the scope of this review. However, it can be pointed out that little emphasis has been placed on systematic attempts to increase parental involvement in adolescents' sex education/monitoring process. This situation exists in spite of the fact that only a relatively small minority of parents become involved in their children's sex education.[34]

In an effort to address this gap in the literature, Oliver et al[35] manipulated the degree of parental involvement in a school-based family life curriculum. This curriculum was a K-12 system-wide program that had been implemented in a large metropolitan public school system as part of a mandate related to the large numbers of unwed teenage childbirths in the county. The study examined the impact of 9 joint parent-child homework assignments in classes of seventh and eighth graders who were studying the curriculum. The inclusion of this curriculum supplement was based on the premise that parents who communicate with their adolescents about sexual issues are more likely to deter their children from engaging in this high-risk behavior.

The study used a quasi-experimental design, with outcome measures that included parental survey data and findings from separate focus groups, with family life curriculum teachers and parents of experimental group children (receiving the joint homework assignments) and control children (no joint assignments). Post-intervention survey scores of parents in the experimental group were significantly higher than those of the control group, indicating that parents of students in the experimental group had a more favorable opinion about the curriculum. The 24 parents who attended 1 of 6 focus group discussions unanimously indicated positive impressions of the use of joint parent-child homework assignments. Parents with children in the experimental condition reported high levels of satisfaction and indicated that the homework assignments were useful in prompting discussions with their children. It is informative that, although teachers did not distribute almost half of the planned homework assignments, of those that were distributed, 83% were completed.

Because the evaluation component of this study was limited to posttest measures from parents and teachers who completed the surveys and attended the focus groups, selection bias may have been a threat to the validity of the study's conclusions. However, it is important to note that those parents participating in the experimental group spent time completing the homework assignments with their children, and their impressions of the homework assignments were consistently positive.

Academic Achievement. Hampton and Mumford[36] evaluated a strategy for increasing parental involvement in inner-city schools in East Cleveland, Ohio. The Project FAST (Families are Students and Teachers) initiative was aimed at increasing levels of academic achievement by establishing long-term school/family partnerships. The initiative included a 3-year plan that involved student participation in annual summer enrichment camps, multi-year classroom assignments, and monthly parent workshops during the school year. The summer enrichment programs were implemented in an effort to promote long-term collaboration among students, their parents, and schools. In addition, multi-year class assignments were utilized to allow a more continuous level of contact with parents and, ultimately, increased parental interaction with schools. The monthly parent workshops focused on the knowledge and tools necessary to reinforce instruction, avenues for creating a home environment that supports learning, development of positive self-concepts in children, and basic parenting skills.

Because random assignment to the program was not possible, the researchers compared the mean performance on 2 achievement tests (Comprehensive Tests of Basic Skills and Terra Nova) of Project FAST students to the mean performance of nonparticipating (same-grade) students within the school, as well as within the district. The findings support a positive relationship between participation in Project FAST and academic achievement. With one exception, stu-

dents from Project FAST classrooms outperformed their nonparticipating counterparts in reading, language arts, and mathematics.

4. Contextual constraints. Some parents are capable of becoming involved in their children's lives, and they know what to do and how to do it. Their particular life situation, however, prevents them from carrying out these responsibilities. These situations include parental work obligations that require extensive amounts of latchkey time, divorced parents who are given limited access to their children, incarceration, single-parent homes in which the burden of maintaining the household creates barriers to involvement with children, etc. All these situations may prevent parents who are capable of becoming involved in their children's lives from achieving this goal.

There are numerous examples of attempts to mitigate the contextual constraints to effective parenting: flextime work schedules, after-school programs, alcohol-free proms, high school designated driver programs, and police-enforced curfews, to name a few. However, we found no empirical investigations that evaluated any of these strategies by manipulating an independent variable designed to produce increased parental involvement.

5. Not wanting to do it. Some parents are not constrained by any of the previous 4 factors; they simply are not motivated to become more involved with their children. They have limited interest in opening and maintaining communication channels, spending time, effectively monitoring, and appropriately disciplining their children. The choices these parents make can be understood in terms of the relative rewards and penalties that are being placed on their behaviors. In his articulation of his "Social Trap Theory," Platt[37] describes how people typically engage in responses that bring immediate reinforcers or that allow them to avoid immediate punishers, even though those same responses are likely to result in the application of substantial punishers or the loss of substantial reinforcers at a later time. Classic examples of social traps would be smoking, not wearing a safety belt in an automobile, and unprotected sex with a relative stranger.

In short, the power of consequences to affect behavior, be they rewards or penalties, is much greater if they are certain and immediate than if they are uncertain and in the future (delayed). Thus, avoiding the immediate negative consequence of an unhappy, pouting child may do more to control a parent's behavior toward his or her child than the future uncertain prospect that the child may become involved in risky sexual behavior, risky driving, and deviant peer groups. Children will generally attempt to apply reinforcers to any parental behavior that provides them with more access to risk-taking situations and to apply punishers to parental behaviors that restrict such freedom. Unfortunately, they often become quite adept at such contingency management, and parents succumb to their control tactics.

Strategies in this category aimed at increasing parental involvement would involve altering contingencies (consequences) placed on parents that would lead them to reprioritize their activities to allow for more functional involvement with their children. This approach centers on decreasing the potency (attractiveness) of the immediate benefits of inadequate involvement and monitoring. This may be accomplished in 3 fundamental ways:

1. Apply more immediate punishers to the parent for not being adequately involved with and/or monitoring his or her child. An example would be the recent trend toward making parents legally responsible for their child attending school (ie, parents fined/jailed for having habitually truant children). Another example would be laws holding parents economically responsible for any vandalism carried out by their child.
2. Apply more immediate rewards to the parent for increasing involvement/monitoring of his or her child. An example would be social recognition by other parents for monitoring a child's parties or contacting all the other relevant parents regarding a child's plans for a sleep over. Another example would be groups of parents committing to and socially rewarding each other for not letting their children date until a certain age.
3. Increase the salience of potential negative future consequences to their children when the parents are not adequately involved with their lives or do not adequately monitor their risk-taking behaviors. Thus, local statistics on junior high school student sexual activity, levels of alcohol use, vehicle crashes involving youthful drivers, rates of sexually transmitted diseases, etc, may increase the perception of risk that these things may happen to their children and, therefore, encourage some parents toward more involvement. Although

providing such information can be effective, this strategy still suffers from the problems associated with social traps.

Clearly, research involving the first 2 of the above strategies will be restricted because of the limited ability of researchers to manipulate the consequences imposed on parents. Such opportunities would exist primarily in juvenile court and perhaps in some school settings. We conducted 2 such studies within the juvenile court context. The first study[38] dealt with encouraging parents who had children removed from their homes and placed in foster care to accomplish the goals set for them by the court as a prerequisite for reunification. Inadequate motivation for such goal attainment represents a major factor in children's protracted stay in foster care situations. The second study[39] focused on increasing parental involvement with their teenagers' driving after the latter had been issued a traffic citation.

When juvenile court systems remove children from dysfunctional families, it is common practice for the social workers to develop a plan for reunification that entails the parent(s) accomplishing a series of goals (eg, drug or alcohol rehabilitation, anger management classes, finding work, repairing the home, parenting classes, and visiting the child). Although the goals will vary depending upon the case, the last requirement (parental visitation) is practically universal. Extensive delays in reunification often occur because the parents procrastinate in accomplishing the goals. The delays thus created can mean that children remain in foster care for months and even years.

Working within a large juvenile court system, Vassar et al[38] examined the efficacy of an intervention strategy intended to provide more expeditious resolution of foster care cases. Employing a randomized field design, the study attempted to determine whether case resolution could be expedited by replacing the periodic civilian case review board hearings with judicial review hearings to which parents were issued a summons to appear, thus increasing the perception of consequences placed on the parents. The cases assigned to the control group received the standard periodic review by the citizen review board. The results of this study indicated that the judicial review process resulted in a 110% higher rate of children leaving foster care. Furthermore, the disposition of these cases was accomplished in 59% of the time that was required for board-reviewed cases. Families in the treatment group met 59% of the assigned goals compared with 13% in the control group. Hence, requiring parental participation in the disposition of foster care cases appears to have had an effect on the number of assigned goals parents were able to meet in an effort to regain custody of their children.

The second study addressed the problematic issue of risky teenage driving. In an examination of the efficacy of a court-directed parental involvement program, Mattox et al[39] manipulated the level of court-encouraged parental involvement in an effort to reduce high-risk driving among teenagers and their subsequent citations for traffic offenses. This effort to increase driving safety among adolescents focused on the behaviors that put young drivers at risk. Mattox et al assert that interaction between parents and teenagers allows for control of the antecedents for high-risk behavior and timely enforcement of consequences for violation of rules. The program used a series of parent-child exercises to increase parental involvement with their youthful traffic offenders' driving behaviors.

In this study, the program had highly significant effects on the recidivism rates of female but not male adolescents. These researchers conclude that parental involvement and intervention of the judicial system could be viewed as the 2 factors responsible for mitigating recidivism. Furthermore, it was determined that judicial mandate, and the perception of authority that is adjoined to it, was viewed as an effective way to increase parental involvement. Although strong conclusions about the link between parental involvement and outcome data could not be made due to low response rate and lack of statistical power, this study does provide clear evidence that parental involvement is a resource that can be manipulated for the purposes of intervention. Another project is currently underway to further explore the relationship between parental involvement and the prevention of risky driving behavior.

The third strategy mentioned previously is increasing the salience of a potential negative consequence. There are numerous examples of attempts to engage parents by informing them of grave statistics about teenage driving fatalities, pregnancy, sexually transmitted diseases, adolescent drinking and drug abuse, academic dropout rates, and life-threatening dangers of gang membership. These antecedent strategies are designed to reframe some future, uncertain, but very negative consequence that may occur to their children and make it more salient or frightening, thus increas-

ing its power to encourage more parental involvement and monitoring behavior. There are few systematic investigations of the value of such attempts for actually reducing adolescent risk taking.

A study we recently conducted (Palmer et al[40]) involved the development of a television/radio/billboard campaign in northeast Tennessee designed to reduce the rate of teenage driver crashes. The advertisement campaign was designed with the input of student focus-group suggestions regarding the content and flavor of the ads. The students suggested that, in order to be effective, the ads should be graphic, have local scenes, and depict tragic outcomes for careless driving by teenagers. Thus, the purpose of the 3 ads was to increase the salience of a very negative (albeit infrequently occurring) consequence, not only for the juveniles who viewed them but also for the parents who viewed them.

Outcome measures included a scientific telephone poll taken of area parents and juveniles and actual crash statistics obtained before, during, and after the 3-month intervention, not only in the target area but also in a comparison area in southeastern Tennessee.

The polling data revealed that, taken as a whole, the 3 venues for delivery (television, radio, billboard) reached 98% of the juveniles and 82% of their parents. Five percent of parents of 16 to 18 year olds and 15% of parents of 14 to 15 year olds reported that they intended to implement meaningful monitoring strategies. With respect to the impact of the ad campaign on actual driving behavior, a time series analysis indicated that there was a 30.4% reduction in crashes involving juveniles during the 3-month duration of the campaign. An analysis of the comparison region indicated no similar reduction. The effect lasted only as long as the campaign, as the crash rate returned to baseline after the conclusion of the campaign.

Overreliance on Antecedent Strategies to Effect Behavior Change

Antecedents are defined as stimuli or events that occur prior to a behavior that are intended to influence the behavior. Examples of antecedents would include such things as "please don't litter" signs, political campaign ads, red lights, a physician's advice to a patient, pep talks, or any other attempts at communication intended to influence subsequent behavior.

Unfortunately, an overwhelming amount of evidence suggests that antecedents are effective at controlling behavior only to the degree that they signal meaningful consequences for engaging or not engaging in some behavior. The principle is often ignored when antecedents are not linked to meaningful consequences. When the antecedents don't work, another ineffective antecedent may be applied. For example, parents may implore their adolescent children to not engage in risk-taking behaviors, and when they discover their children have engaged in such behavior, they implore them again ("I thought I told you not to do that, so don't do it again!"). They persist in such strategies because they are reinforced for it; antecedents (such as lectures) are less painful for a parent to dole out than consequences (such as grounding). Furthermore, many parents simply are not aware of just how impotent antecedent-only strategies are at controlling their children's behavior.

Conclusions

The material covered previously has clearly shown that parental involvement is related to the extent to which adolescents encounter a wide variety of serious behavioral problems. However, some research suggests that these findings could be confounded by a combination of other effects, including direct genetic effects, gene-environment correlations, parents'-group-to-children's-group effects, context effects, and response biases.[41] The inability to refute possible confounds and identify causal relationships are limitations of correlational research. Resolution of the ambiguity of causal direction can be accomplished only by conducting studies that adhere to the criteria established for experimental research.

Unfortunately, few interventions intended to increase parental involvement for the purpose of reducing a specific problem have been described in the literature. The interventions that have been tested have not had a very meaningful impact on the target behavior of the children. The weak influence of increased parental involvement may have occurred because the interventions have come too late. For example, the work described previously that attempted to increase parental involvement with young drivers involved drivers between the ages of 14 to 18 years (Mattox et al[39]), and Oliver et al,[35] working in the area of sex education, attempted to increase involvement of parents with children in their early teenaged years. Similarly, the work by Henggeler et al[32] centered on adolescents.

If patterns of adolescent behavior have been strongly established by the early teenagers, then attempts to increase parental involvement at this time is much like closing the barn door after the horse has left. We suggest that researchers interested in school-based programs to increase parental involvement in areas such as academic achievement, sex, and driver education should begin by attempting to involve parents with their children's schoolwork in kindergarten and first grade. Work should then continue for many years to maintain the parental involvement until topics such as sex education or driving behavior become relevant. Thus, frequent parent-child discussion and interaction would have been firmly established by the time a topic such as sexual behavior became appropriate, and parents would find it far easier to introduce this topic than is the case for most parents today.

In terms of the 5 general reasons why some parents don't become as involved with their children as they should, pediatricians are in a good position to impact at least 2 of them. For the parents who don't know what to do or how to do it, pediatricians can point them in the right directions for gaining such knowledge and skill, as well as inform them of the potential consequences for not becoming adequately involved with their children or effectively monitoring their activities. Of course, such counseling amounts to an antecedent-only strategy and is therefore of limited effectiveness. On the other hand, to the extent that a medical professional helps parents learn why and how to involve their lives in their children's, reduced adolescent risk taking may follow.

Despite the correlation designs of most of the research reviewed in this article, the findings reviewed here suggest that parental involvement may be a bastion against adolescent risk taking. Furthermore, the few studies we could find that actually attempted to manipulate parental involvement as an independent variable provide evidence that such studies can be conducted and achieve meaningful results. We conclude that much more of this experimental research needs to be conducted.

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