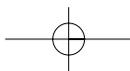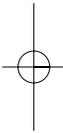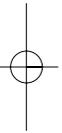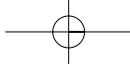# Part II

COMMON PATHWAYS AND INFLUENCES ON ADOLESCENT RISK BEHAVIOR

Section A

Multiple-Problem Youth

CHAPTER 15

Preventing Multiple Problem Behaviors in Adolescence

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One of the most consistent findings in studies of adolescent problem behavior is that problems are inter-related. For example, the same youth who engage in delinquent behavior are the ones more likely to smoke, drink alcohol in excess, use other drugs, engage in high-risk sexual behavior, drop out of school, or attempt suicide. The relationships are by no means inevitable, but they are large enough and consistent enough to justify a focus on the factors that influence the development of multiple problems and on the interventions that are likely to reduce the number of youth with these problems.

Over the course of the 2000–2001 academic year, the Robert Wood Johnson Foundation and a consortium of National Institutes of Health agencies funded a project at the Center for Advanced Study in the Behavioral Sciences (CASBS) that synthesized what we know about multiproblem youth. This chapter summarizes the work of the CASBS team. A more detailed account of our findings is forthcoming (Biglan et al., in press).

THE INTERRELATIONSHIPS AMONG PROBLEM BEHAVIORS

Numerous researchers have found that adolescents with one problem behavior (such as smoking cigarettes) also have others (e.g., violence or high-risk sexual behavior). Links exist between delinquency and high-risk sexual behavior (Biglan et al., 1990), antisocial behavior and illicit drug use (Elliot, Huizinga, & Menard, 1989; Robins & McEvoy, 1990), and behavioral problems and alcohol consumption (Hanna, Hsiao-ye, Dufour, & Whitmore, 2000). Annual surveys conducted by government agencies such as the Substance Abuse and Mental Health Services Admini-stration (1999), National Institute on Alcohol Abuse and Alcoholism (1996), and the National Highway Traffic Safety Admini-stration (2001) indicate that alcohol use by youth is related to serious conduct problems, including drunk driving, homicide, other violent crimes, and risky sexual behavior.

One way of gauging the importance of a focus on multiproblem youth is to look at the

proportion of all problems for which they account. In an analysis of National Household Survey data, the CASBS team looked at the 12- to 20-year-olds who reported engaging in none, one, or two or more of the following problems: serious antisocial behavior, smoking, alcohol misuse, illegal drug use, and high-risk sexual behavior. Only 18% of young people had two or more of these problems, but those individuals accounted for 65% of drunk driving, 88% of violent arrests, 72% of all arrests, 87% of the health problems related to drug use, and 75% of improper needle use among drug abusers (U.S. Department of Health and Human Services, 2000).

THE SOCIAL COSTS OF ADOLESCENT PROBLEM -*BEHAVIOR

Ted Miller of the CASBS team analyzed the costs of multiproblem youth. To do so, he reviewed existing evidence from cost analyses of individual problem behaviors and examined what proportion of each problem was likely attributable to youth with multiproblem behaviors. The behaviors included in his analysis were juvenile crime, cigarette smoking, binge drinking, cocaine or heroin abuse, high-risk sexual behavior, suicide acts, and dropping out of school. He compiled an estimate for the costs incurred in 1998 by each behavior. These included long-term costs of these behaviors, such as the continuing costs of permanent injury to a crime victim. However, it did not account for the long-term costs of youthful cigarette smoking, which are enormous (Centers for Disease Control, 2002a).

The estimate of the total cost of multiproblem behavior in 1998 for the United States was $422 billion. The two most costly were antisocial behavior ($165 billion) and dropping out of school ($141 billion).

INFLUENCES ON THE DEVELOPMENT OF MULTIPLE PROBLEMS

Research over the last 40 years has provided much greater understanding of the factors that influence young people. Here, we will briefly summarize factors—from the prenatal period through adolescence—shown to influence problem behavior in adolescence.

Prenatal factors that contribute to problems in adolescence include maternal nutrition and substance use. For example, male children of mothers who smoked during pregnancy display a higher incidence of criminal and conduct problems than do children of nonsmoking mothers (Brennan, Grekin, & Mednick, 1999; Gibson, Piquero, & Tibbetts, 2000; Wakschlag et al., 1997). Raine, Brennan, and Mednik (1994) found that children of mothers who had birth complications (e.g., forceps extraction, breech delivery, umbilical cord prolapse, preeclampsia, long birth duration) or experienced maternal stress about having a child were likely were likely to commit crimes in adolescence. Similarly, genetic factors appear to contribute to antisocial behavior. For example, Reiss (2000) examined the correlation between parenting behavior and child outcome for both biologically related and biologically unrelated mother-child pairs. He found that genetic influences could almost entirely explain the relationship between harsh parenting and antisocial outcome in adolescence.

Converging evidence suggests that through their effect on parent-child—and particularly early maternal-child—interactions, all of the just-cited factors may lead to problem behavior. All appear to involve the infant's being fussy and difficult to console. This makes it less likely that the mother and infant will develop synchronous and comforting interactions that lay the groundwork for shaping the child's cooperative, prosocial behavior. Instead, patterns of aggressive and

uncooperative behavior on the part of the child and coercive reactions on the part of the parent may develop. These patterns of coercive interaction have been shown to contribute to the further development of aggressive behavior (Patterson, Reid, & Dishion, 1992).

Such aggressive behavior appears to be the single most important predictor of the development of diverse problems in adolescence. When children enter elementary school, aggressive and uncooperative behavior contributes to academic failure and peer rejection. Aggressive and socially rejected children are significantly more likely to engage in delinquency in adolescence (Patterson, DeBaryshe, & Ramsey, 1989).

A key pathway through which aggressive elementary school children become adolescents with multiple problems is their association with deviant peers. From initial experimentation with cigarettes (Friedman, Lichtenstein, & Biglan, 1985) to engagement in criminal acts (Patterson et al., 1992), adolescent problem behavior is a social activity. Dishion and his colleagues (Dishion, Eddy, Haas, Li, & Spracklen, 1997) have recently shown that one of the mechanisms of this influence is straightforward positive reinforcement of talk of deviant behavior—which presumably accompanies approval of the behaviors themselves.

Concerns About Stigmatizing Multiproblem Youth

One concern sometimes raised in discussions of multiproblem youth is that by stigmatizing young people with problems, we will increase the punitive and unproductive ways in which they are treated. Our response is that at-risk youth are already regarded in punitive and stigmatizing ways. Consider the policies currently in place that track young people into "opportunity schools" and the policies that increasingly try juvenile offenders

as adults and require mandatory minimum sentences. Articulating the extent and cost of youth with multiple problems may prompt an already too punitive society to further punishment, but it can also be the occasion to point to the inadequate and harmful nature of current practices and to describe more effective interventions that have recently been identified. There are interventions all along the course of development that can help young people develop the skills and interests they need to avoid multiple problems and lead productive and satisfying lives. Let us briefly review some of them.

PREVENTION OF ADOLESCENT PROBLEMS THROUGH PREADOLESCENT INTERVENTIONS

Interventions for the Prenatal, Perinatal, and Early Childhood Periods

Three programs that target this period of development are the Nurse Visitation Program (Olds et al., 1998), the Syracuse Family Development Research Program (Lally, Mangione, Honig, & Wittner, 1988), and the Perry Preschool Project (Clarke & Campbell, 1998; Yoshikawa, 1995). Each has shown encouraging results.

The Nurse Visitation Program, developed by David Olds and colleagues, focused mostly on white (89%), unmarried (62%), and low socioeconomic status women (61%). It consisted of home visits by nurses during the young mother's pregnancy and the first 2 years of the child's life. The nurses befriended the mother and supported her in making health and behavior changes, such as quitting smoking and getting a job. The randomized trial evaluating the program showed that these mothers reported fewer sexual partners, fewer cigarettes smoked

per day, and fewer days on which they had consumed alcohol in the past 6 months. As adolescents, the children of mothers who were poor and unmarried had significantly fewer arrests, fewer convictions, and fewer probation violations than did the offspring of poor unmarried women who did not receive nurse visitation. A later randomized trial among African American women (Kitzman et al., 2000) achieved results similar to those of the initial study.

Interventions for School-Aged Children

The Good Behavior Game has been in use in schools around the world since its development in the 1960s by Barrish, Saunders, and Wolf (1969). The classroom is divided into two or more groups and groups earn free time and other rewards for brief periods of on-task and cooperative behavior. Embry (2000) reviewed 13 evaluations of the program and concluded that the game can reduce aggressive and uncooperative behavior and increase cooperative behavior across diverse socioeconomic and ethnic groups. Kellam, Ling, Merisca, Brown, and Ialongo (1998) evaluated the program in a randomized trial involving first grade students in 19 Baltimore elementary schools. The game reduced aggressive behavior in first grade (Dolan et al., 1993), and boys' aggress remained lower even in sixth grade (Kellam, Mayer, Rebok, & Hawkins, 1998). Boys who received the intervention were significantly less likely to be smoking at age 14 (Kellam & Anthony, 1998).

These results are not isolated. Other programs shown to prevent the development of problem behavior among aggressive elementary school students include the Montreal Longitudinal Experimental Study (Tremblay, Pagani-Kurtz, Masse, Vitaro, & Pihl, 1995), the Seattle Social Development Program (Hawkins, von Cleve, & Catalano, 1991),

and LIFT (Linking the Interests of Families and Teachers).

Researchers at the Oregon Social Learning Center developed LIFT (Reid, Eddy, Fetrow, & Stoolmiller, 1999). Targeting first- and fifth-grade students ($N = 671$), LIFT consisted of the Good Behavior Game, parenting skills training, and increased contact between parents and teachers, via the phone. Reid and colleagues evaluated it in a randomized trial in which they assigned schools to receive or not to receive the program. Fifth-grade children who had been involved in the program had less association with deviant peers, lower likelihood of a first arrest, and less initiation of alcohol and marijuana use than did fifth graders who did not receive the program (Eddy, Reid, & Fetrow, 2000).

UNIVERSAL PREVENTION PRACTICES TARGETING ADOLESCENTS

A universal program is one designed to reach all members of the population, as opposed to only those who are at risk. The programs often reach the adolescents through schools, but some successful programs have worked with adolescents and their families.

Family-Focused Interventions

Preparing for the Drug Free Years (PDFY; Haggerty, Kosterman, Catalano, & Hawkins, 1999) and the Iowa Strengthening Families Program (ISFP) are two promising programs. PDFY works mostly with parents, but ISFP consists of seven sessions during which parents and children learn new skills for communication and for dealing with emotions. Spoth and colleagues evaluated both programs in a randomized, controlled trial involving 33 mostly white, dual-parent families in Iowa (Spoth, Redmond, & Shin, 2000, 2001). IFSP had a significant impact in

reducing youths' use of tobacco, alcohol, and other drugs. Among control youngsters, 19.1% reported having ever been drunk at a 2-year follow-up, whereas only 9.8% of the ISFP young people did so. PDFY also led to significantly lower rates of initiation of substance use.

School-Based Programs

Within the schools, researchers have developed classroom-based curricula to prevent substance use. A recent meta-analysis by Tobler and colleagues (Tobler et al., in press) indicated that the most widely known approach, Drug Abuse Resistance Education (DARE), has not shown significant effects in the 16 years since its creation. Life Skills Training (LST), developed by Botvin and colleagues (Botvin, Baker, Dusenbury, Botvin, & Diaz, 1995), has been more successful. LST is a 20-session, seventh-grade curriculum that has booster sessions in eighth grade. It includes, among other things, activities designed to enhance awareness of social influence to use substances and training in social skills, for resisting influences and for coping with stress. It has shown positive results on drug use among 12th-grade students who received this social skills training as early as the eighth grade (Botvin et al., 1995). However, a significant finding stresses the importance of implementing programs such as this with fidelity. Botvin and colleagues (Baker, Dusenbury, Tortu, & Botvin, 1990) found no benefit of LST when it is delivered inadequately.

Policies to Affect Adolescent Problem Behaviors

Many educators have overlooked the capacity of policy to prevent problems. For example, if there were laws in place affecting price, availability, and opportunity for alcohol, it could reduce binge drinking even without

the family and school interventions. It is also important to restrict advertising that targets youth (Biglan, 2001).

INTERVENTIONS TARGETING ADOLESCENTS WITH BEHAVIOR PROBLEMS

Interventions for Delinquency and Antisocial Behavior

An exemplary program is Multi-Dimensional Treatment Foster Care (Chamberlain, 1994), which focuses on adolescents who are repeat offenders, targeting family and peer risk factors that can lead to an increase in multiple-problem behaviors. The program places the adolescents in foster homes with parents trained in behavior management and at the same time trains the biological parents to better equip them for the time when adolescents return to their home. A randomized controlled trial indicated that the program reduces recidivism (Chamberlain & Reid, 1998). In addition, cost analysis has found the program to be more cost-effective than incarceration (Aos, Phipps, Barnoski, & Lieb, 2001).

Multidimensional Family Therapy addresses multiple factors that can affect use of drugs or other antisocial behavior. Therapists teach life skills to adolescents and work to improve relationships between parents and children as well as between parents and outside agencies. Families receive up to 25 individualized treatment sessions over a 3- or 4-month period (Hogue, Liddle, Becker, & Johnson-Leckron, 2002). Evaluations of the program involving randomized controlled trials show that it has some promise for reducing drug use, but these evaluations have not sufficiently established its effectiveness in prevention.

The juvenile justice system has long been involved with youth intervention, particularly

with incarceration, youth diversion programs, and intensive probation, parole, or both. There is some evidence that behavioral skills training provided to delinquents in these contexts can have value (Lipsey, 1998). However, our society makes far greater use of punishment than the evidence merits. For example, boot camps have become popular recently, but evidence indicates that they have no benefit (Aos et al., 2001). In general, incarceration should be evaluated in light of the evidence that it reduces participation both in the workforce and in committed relationships, thereby contributing to continued involvement in crime in adulthood (Sampson & Laub, 1994).

COMPREHENSIVE COMMUNITY AND STATEWIDE INTERVENTIONS

Community Interventions

Community interventions could reach a wide range of ages and target numerous behavioral problems. However, to date, the most evaluated community interventions have focused on the prevention of substance use. For example, Project SixTeen (Biglan, Ary, Duncan, Black, & Smolkowski, 2000) targeted tobacco use, and Project Northland (Perry et al., 1993), Communities Mobilizing for Change on Alcohol (Wagenaar & Toomey, 2000), and the Saving Lives Project (Hingson, Heeren, & Winter, 1996) focused on alcohol use among adolescents. The Community Trials Project (Holder et al., 1997) sought to reduce alcohol-related problems among all ages, and the Midwestern Prevention Program (Pentz, Dwyer, et al., 1989; Pentz, MacKinnon, et al., 1989) concentrated on adolescents only, but across a wide range of substance use.

Each of these programs has shown some success when evaluated in a randomized trial. These promising results indicate the possibility of additional wide-range targets across all ages of development. It is time to evaluate community interventions designed to affect antisocial behavior among adolescents.

Statewide Campaigns

Statewide efforts tend more to the implementation of policies and although initially focused only on alcohol use, have recently included tobacco regulation, particularly in California, Massachusetts, Arizona, Oregon, and Florida (Chaloupka, Grossman, & Tauras, 1997). States could consider this same kind of effort in prevention of other high-risk behaviors.

REALIZING THE PROMISE OF THESE INTERVENTIONS

The evidence briefly reviewed here and covered more comprehensively by Biglan et al. (in press) indicates that, throughout development, there are programs and policies able to prevent young people from developing multiple problems. As research accumulates, we can be confident that available interventions will grow in number and strengthen in efficacy.

Yet the true promise of all this knowledge will come when these interventions are widely implemented with careful attention to ensuring that they have the effects that existing evidence suggests are possible. The CASBS team convened a meeting of experts who developed recommendations on how communities could realize the promise of these interventions. We summarize them here.

• *Develop a shared vision among community organizations.* Communities with a shared vision of what they want child rearing to be like are more likely to mobilize the resources to bring about improvements (Roussos & Fawcett, 2000). That vision can

specify the outcomes that the community most desires for its young people, the outcomes that most need attention, risk and protective factors that need modification, and the interventions that need to be implemented to bring about improvement. Although research on how to achieve these partnerships is limited, there are useful guides that provide the basis for further evaluation of strategies (Roussos & Fawcett, 2000).

• *Ongoing assessment of child and adolescent well-being.* Just as we monitor economic performance, we need to develop a system for monitoring the well-being of children and adolescents. Such systems will focus communities on the more important problems, provide the basis for advocacy about what needs to be done (e.g., Kingsley, 1998), and allow them to evaluate their efforts. Over time, the widespread use of such systems will foster the selection of more and more effective child-rearing practices, as those associated with improvements are retained and those that appear to be of no value are abandoned or modified. There has been considerable progress in articulating what such systems might look like and how to achieve them (Kingsley, 1998; Mrazek & Biglan, 2002). The cost of obtaining, organizing, and making data available on youth well-being is decreasing. The CASBS meeting concluded that it is not too early to establish a national goal of helping communities establish such monitoring systems.

• *Empirically supported interventions across the life span and across multiple levels of influence.* The studies cited earlier testify that throughout young people's development, we can do something to prevent problems and promote success. Interventions can target families, peer groups, schools, neighborhoods, and communities. We need policies at the federal and state levels to foster the adoption and implementation of programs and policies shown to make a difference. Knowing that even the best studies with the most successful outcomes do not guarantee success in a new setting, those policies also require ongoing monitoring of outcomes.

• *The innovating and evaluating society.* Our society is evolving toward more frequent and systematic use of science to assess the effects of policies and programs. It is doing so because of mounting evidence—such as that noted here—that careful scientific research can contribute to the improvement of many lives and the avoidance of many costs. Recognition of this evolutionary process may further accelerate our progress. To the extent that each community begins to demand that the outcomes for its youth be carefully measured and the importance of its child-rearing practices understood, we will achieve a society in which far fewer young people suffer and many more lead happy and productive lives.