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Youth with Multiple Problems

Sixteen-year-old Michael has just ended a stay in a juvenile detention center. Arrested twice—once for breaking and entering and once for an assault that followed a night of heavy drinking—Michael has problems other than his encounters with the legal system. He attends high school erratically and no doubt will soon drop out entirely. He smokes almost a pack of cigarettes a day and smokes marijuana frequently. Recently he has begun to experiment with harder drugs. Now, Michael has another surprise in store for him—his girlfriend is pregnant and she plans to tell him this as soon as she sees him after his release.

We have written this book for Michael and for the many other young people headed for deeply troubled lives. Research has helped us understand much about young people with multiple behavior problems and the cost of their actions to themselves and society. Research and clinical work have also helped us to identify numerous promising strategies to work with these multiproblem youth and to begin to reduce the number of teens who end up on a downward spiral. In this book, we lay out what we know about these young people. Our goal is to demonstrate actions that are more effective in order to alter the destructive path these children travel.

The existence of a small group of multiproblem youth has been clear, at least since Jessor and Jessor (1977) first described the phenomenon of deviance-prone youth. However, despite literally hundreds of studies showing that delinquency, substance use, and high-risk sexual behavior co-occur, the implications of this phenomenon for policy, practice, and research are not clear. They have been unclear because no one has brought all this information together and spelled out its significance

for research and practice. Prevention and treatment strategies typically focus only on a subset of problems. For example, we have programs to prevent academic failure, but we know little about whether these programs can prevent delinquency or drug abuse. In addition, we know that the family, schools, peers, and the community may (either positively or negatively) influence what happens to these teens. For example, with protective factors, such as a stable home life, involved parents, and teachers at school who never give up, even a teen beginning to get involved in problematic behavior can pull out of the downward spiral. Yet, when the child's father abandons the family, the mother works two jobs, and the child's acting out in school lands him or her in the principal's office more often than not, avenues narrow for the opportunity to resist the negative pull. We know that influences on the development of the multiproblem pattern begin while the child is still in the womb. Obviously, the time to intervene is when the potential for the developmental of problems is in its infancy. Despite our knowledge, we have not instituted widespread comprehensive, evidence-based approaches geared to deal with these problems before they lead to a cascade of increasingly destructive behavior patterns.

In Chapter 2, we document the extent to which multiproblem youth account for a large proportion of the occurrence of serious antisocial behavior, risky sexual behavior, drug and alcohol misuse, and tobacco use. In that chapter, we also show how multiple behavior problems lead to many problematic outcomes such as suicide and unwanted pregnancy. In Chapter 3, we show how to estimate the social costs attributable to the behavior of multiproblem youth. In Chapter 4, we identify the major factors that influence young people to develop these problems. Chapters 5–8 describe empirically evaluated interventions shown to reduce one or more of the problems that concern us. Chapter 5 focuses on interventions that target preadolescent influences on the development of multiple problem behaviors. It documents numerous strategies to follow for prevention of these problems and to promote successful adolescent development. Chapter 6 describes interventions designed to prevent problem behaviors among all adolescents. Chapters 7 and 8 describe interventions focused on helping adolescents who are already showing signs of problematic behavior. The final chapter examines issues involved in applying these scientific findings to help communities develop programs and policies to help not only youths in trouble but also those headed in that direction.

ADOLESCENT PROBLEM BEHAVIORS

We have chosen to focus on five adolescent problem behaviors: antisocial behavior (including aggressive social behavior and more serious acts

such as stealing and assault), cigarette smoking, alcohol and drug misuse, and sexual behavior that risks pregnancy or disease. We chose these behaviors for several reasons. First, they represent the five most costly problems our society faces. Second, young people who engage in any one of these problem behaviors are highly likely to engage in the others. Third, many of the same biological and environmental factors influence the development of each these problems. Fourth, many of the prevention and treatment interventions previously developed have an impact on more than one of these problems. It is clear to us, therefore, that our society's efforts to lower the rates and costly consequences of each of these problems will benefit from comprehensive and coordinated strategies that simultaneously address the entire set of problems.

Most typical adolescents engage in some of these behaviors to some extent. For example, the majority of adolescents report committing some form of delinquent behavior at some point in their adolescence (Elliott, Huizinga, & Menard, 1989). Similarly, by the age of 17, 70–75% of adolescents drink alcohol, 25% have smoked marijuana, and 80% have engaged in sexual intercourse (Huizinga, Loeber, & Thornberry, 1993). Although we may argue about the desirability of these behaviors in any form, we would all have to concur that, at serious levels, these behaviors are deeply problematic for everyone concerned and can only lead to more difficulties. Therefore, we focus on types of behavior that most would agree are problematic because of the serious consequences they can and often do produce.

We call youth who engage in two or more of these behaviors "multiproblem youth." Because large numbers of youth begin to engage in these serious behavior problems only after they reach adolescence, our primary focus is on children between the ages of 11 and 18, although we look also at early precursors of these problems and the corresponding prevention strategies for use with younger children.

Serious Antisocial Behavior

Antisocial behavior consists of aggressive and criminal acts. The most serious forms of antisocial behavior are so-called index crimes, identified by the FBI as murder, aggravated assault, sexual assault, gang fights, car theft, theft of something worth more than $50, breaking and entering, or strong arming someone (Elliott et al., 1989). In addition, antisocial behavior is generally defined to include less severe delinquent offenses, such as buying stolen goods; carrying a hidden weapon; stealing something worth less than $5; prostitution; selling marijuana; hitting a teacher, parent, or student; disorderly conduct; selling hard drugs; joyriding; stealing something worth $5 to $50; and panhandling (Elliott et al., 1989). Some also distinguish violent from nonviolent crimes. Typi-

cally, they consider robbery, assault, rape/sexual assault, murder, and attempted murder as violent crimes. In this volume, we consider "serious antisocial behavior" to include index offenses as well as physical aggression perpetrated against other individuals.

Perhaps the most serious antisocial behavior is murder. Snyder and Sickmund (1999) estimate that juveniles committed 2,300 murders in 1997 in the United States, or 12% of all murders. The rate of murders committed by juveniles increased substantially between 1984 and 1993 but has declined since then to the same level as in 1986 (Snyder & Sickmund, 1999). Males account for most murders committed by adolescents and the recent decline in the murder rate resulted from changes in the rate among adolescent males. Juveniles are responsible for an even higher proportion of violent crimes besides homicide. Based on the National Crime Victimization Survey conducted by the Bureau of Justice, juveniles were involved in 14% of sexual assaults, 30% of robberies, and 27% of aggravated assaults in 1997. Similar to the pattern for murder, the rate of other serious violent crime increased from 1986 to 1993 but declined back to its 1986 level (Snyder & Sickmund, 1999). Nonetheless, juvenile involvement in violent crime is still an important and costly issue.

Cigarette Smoking

Cigarette smoking is the number one preventable cause of disease and death in the United States (U.S. Department of Health and Human Services [USDHHS], 2001). More than 400,000 Americans die each year of smoking-related illnesses (Centers for Disease Control and Prevention [CDC], 1989) and an additional 50,000 die from chronic exposure to secondhand smoke (CDC, 1989). This results in premature mortality that translates into 6 million years of life lost each year (Smoking-Related Deaths, 1993).

Adolescent smoking is a particularly important problem because most smokers begin smoking before the age of 18 (USDHHS, 1994). Estimates suggest that one-third of adolescents who begin smoking will eventually die of a smoking-related illness (Pierce, Gilpin, & Choi, 1999). Most of the problems associated with adolescent smoking appear later in life. However, some health consequences of smoking in adolescents are detectible, including increased respiratory infections and lessened lung capacity (USDHHS, 1994). Thus, preventing adolescent smoking is a high priority for public health (USDHHS, 2001).

Researchers have defined adolescent smoking in various ways, mostly in terms of self-reported smoking in the previous week or the previous month. Unlike occasional alcohol use, there appears to be no level

of tobacco use that is advisable. Recent evidence, for example, shows that after even a couple of cigarettes, adolescents begin to exhibit some signs of addiction (DiFranza, 2000). However, most adolescents do not believe that tobacco is addictive until they are already addicted (Slovic, 2000). Figure 1.1 presents the monthly prevalence of smoking among 8th, 10th, and 12th graders from nationally representative samples of schools for the years 1991 to 2001. The data come from *Monitoring the Future,* a project that obtains data on adolescent problem behaviors from a nationally representative sample of high schools and middle schools (Johnston, O'Malley, & Bachman, 2000a, 2000b, 2000c; *Monitoring the Future,* 2003). The prevalence of youth smoking increased steadily from 1991 to 1996 in all grades and continued to increase for 12th-grade students in 1997. Further, despite much clamor about the problem, considerable activity designed to reduce youth smoking, and acknowledging that prevalence has shown a steady decline over the past 4 years, its prevalence was still higher in 2001 than it was in 1993 for 8th and 10th graders. On a positive note, there is a decrease shown in 12th graders in 2001 compared to the percentage shown for them in 1991 (Johnston, O'Malley, & Bachman, 2001).

Alcohol Misuse

Once considered a rite of passage, youthful high jinks, or "better than using drugs," underage drinking is now recognized as a serious public health problem. The National Household Survey on Drug Abuse, con-

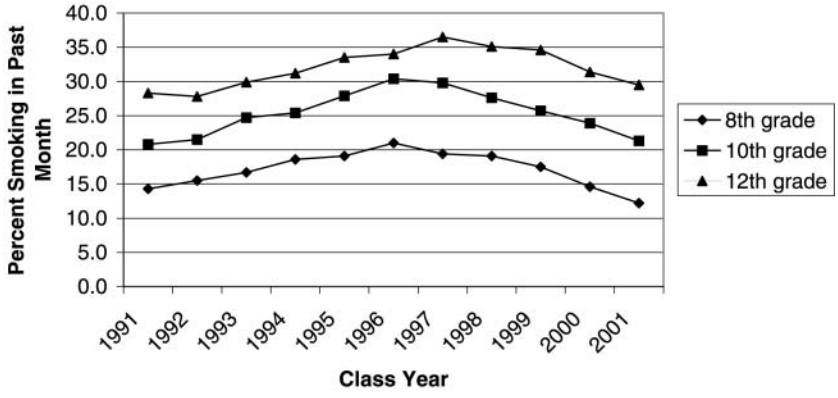

FIGURE 1.1. Trends in 30-day prevalence of tobacco use. Data from Johnston, O'Malley, and Bachman (2001) and *Monitoring the Future* (2003).

ducted by the USDHHS, is the only national household survey of drug and alcohol use in the country and involves annual interviews of between 15,000 and 17,000 respondents (Substance Abuse and Mental Health Services Administration [SAMHSA], 1998). Data from this survey indicate that 52% of 8th graders and 80% of 12th graders reported having used alcohol at least once. By ninth grade, 25% of students reported having five or more drinks in a row in the previous month. Just less than one-third of 8th graders and half of all 10th graders report being drunk at least once. Girls now consume alcohol at the same rate as boys.

Binge drinkers are also responsible for a majority of the alcohol consumed by young people. Recent analyses (Office of Juvenile Justice and Delinquency Prevention [OJJDP], 2000) of data from the 1997 U.S. National Household Survey on Drug Abuse (SAMHSA, 1998) show that binge drinkers constituted 2.4% of 12- to 14-year-olds in that survey but drank 82% of the alcohol consumed by that age group. They comprised 12.1% of 15- to 17-year-olds, but drank 88.5% of the alcohol consumed by this age group.

A large number of teenagers binge drink at least on occasion (see Figure 1.2). In 2001, 29.7% of 12th graders, 24.9% of 10th graders, and 13.2% of 8th graders reported consuming five or more drinks in a row at least once in the 2 weeks before the survey. What is most alarming about these data is that the prevalence of binge drinking has varied little within subsets over the past 10 years. The percentage of 10th grad-

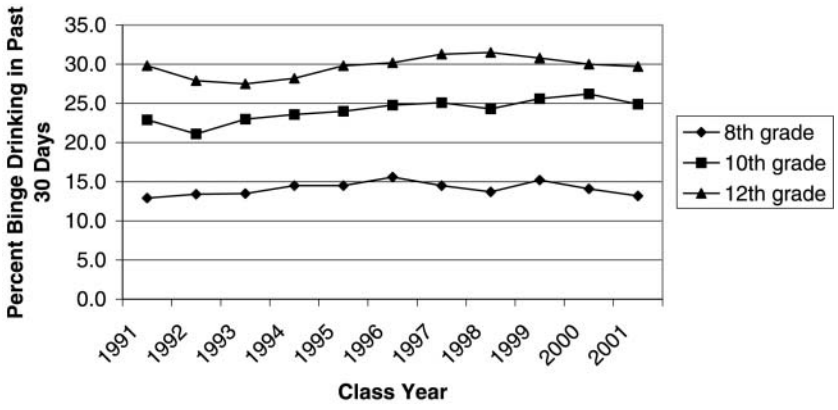

FIGURE 1.2. Trends in 30-day prevalence of binge drinking. Data from Johnston, O'Malley, and Bachman (2001) and *Monitoring the Future* (2003).

ers having "been drunk" in the past month is the highest since 1991, when *Monitoring the Future* started including students in the 10th grade. The trends over the past 10 years demonstrate the frequent pattern of this high-risk drinking by grade level (Johnston, O'Malley, & Bachman, 2001; *http://monitoringthefuture.org/pubs/monographs/overview2000.pdf*).

Drug Dependence and Abuse

The terms "drug abuse" and "drug dependence" refer to patterns of drug use problematic for the user or for those around them (American Psychiatric Association, 1994). Abuse involves serious consequences of use, including one or more of the following: (1) failure to fulfill major role obligations; (2) absence, suspensions, or expulsions from school or work; (3) recurrent substance use in hazardous situations (e.g., while driving); (4) recurrent substance-related legal problems; (5) continued use despite persistent problems; or (6) conflict caused or exacerbated by use.

Dependence refers to an even more serious pattern in which a person uses a substance to the extent that it causes impairment or distress. At least three of the following can indicate dependence: (1) increased tolerance of the substance, requiring more to achieve the same effect; (2) withdrawal symptoms when not used; (3) greater or longer use than intended; (4) persistent desire for the substance; (5) much time spent seeking or using the substance; (6) reductions in social, recreational, or work activities; or (7) continuing substance use despite physical or psychological problems.

Not surprisingly, given these definitions, drug abuse is associated with crime and with numerous problems of physical health and psychological well-being (see Institute of Medicine [IOM], 1996, for a summary of the evidence). Among the health consequences associated with drug abuse are HIV/AIDS infections that result from injecting drug users sharing needles, unsafe sexual contacts with infected drug users, and mother-to-infant transmission of the virus. Experts now believe that injecting drugs is the number one risk factor for HIV infection (IOM, 1996). In addition, injection drug users have higher rates of viral and bacterial infections, including hepatitis, pneumonia, and endocarditis. Numerous psychiatric disorders co-occur with drug abuse. Drug abuse probably causes or heightens at least some of these disorders. Maternal drug use impairs fetal development. In addition, parents who abuse drugs are more likely to neglect or abuse their children.

We should distinguish drug dependence or abuse from drug use. Obviously one must begin use of a substance before dependence or

abuse is established, but not all drug use leads to these problems. One of the problems with much of the research on adolescent drug taking is that the research simply examines the patterns of use without indicating the extent to which use is associated with dependence or abuse. As we shall see, young people who develop problematic use of drugs typically develop some of the other problems we are considering.

Given this caution, consider recent evidence on the prevalence of drug use among adolescents. Figure 1.3 presents data from *Monitoring the Future* on the percentage of students in 8th, 10th, and 12th grades reporting the use of marijuana in the past month. The data are for the years 1991–2001. Figure 1.4 presents data for the same years on the use of any other illicit drug during the prior month. Most school-based surveys do not provide in-depth information about the patterns of drug use; thus we do not know what proportion of the users of these drugs would meet the criteria for drug dependence or abuse.

Use of both marijuana and other illicit drugs increased from 1991 to 1996 across all three samples. However, in 1997, while prevalence of use leveled off or declined for 8th and 10th graders, the use of marijuana and hashish among 12th graders continued to climb until 1999. However, by 2001, prevalence rates for both marijuana and other illicit drugs had leveled off for all grade levels surveyed. Nonetheless, in 2001, more than 22% of 12th graders and nearly 20% of 10th graders reported marijuana use in the last month. Among 12th-grade students, 10.8% reported use of other illicit drugs. This was a 3.7% increase from 1991.

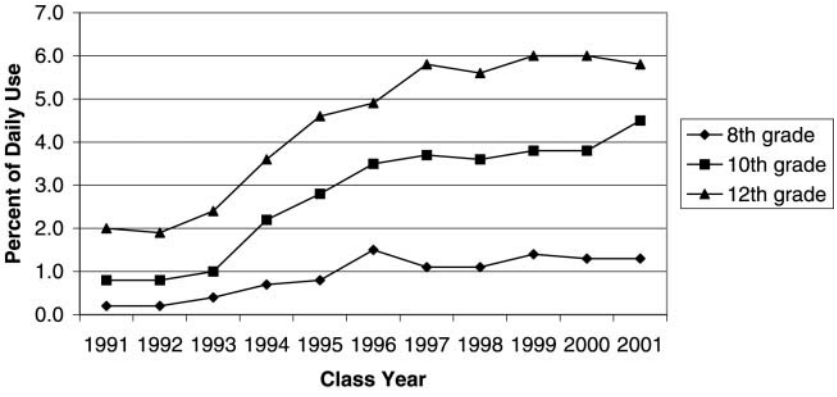

FIGURE 1.3. Trends in 30-day prevalence of marijuana/hashish use. Data from Johnston, O'Malley, and Bachman (2001) and *Monitoring the Future* (2003).

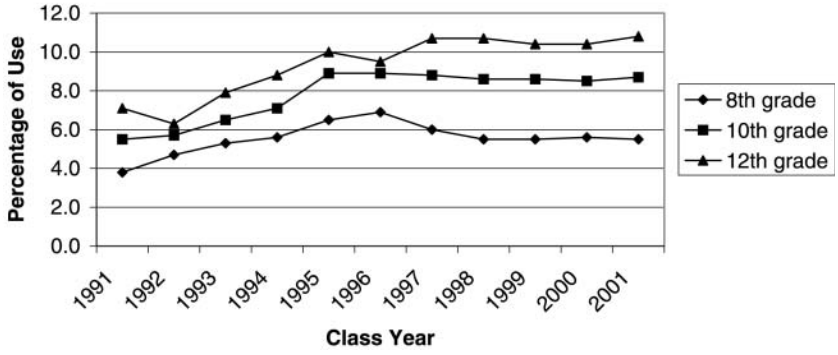

FIGURE 1.4. Trends in 30-day prevalence of illicit drug use (other than marijuana/hashish). Data from Johnston, O'Malley, and Bachman (2001) and *Monitoring the Future* (2003).

Risky Sexual Behavior

Sexual activity is a normal part of adolescent development, but it also carries risk. Sexual intercourse obviously can lead to unwanted pregnancy and the possibility of contracting a sexually transmitted disease, including AIDS. By "risky sexual behavior," we mean engaging in sexual intercourse without using birth control or condoms and having sex with multiple partners—practices that have been associated with increased risk of contracting AIDS or other sexually transmitted diseases, or unwanted pregnancy.

According to the Alan Guttmacher Institute (1999; *http://www.agiusa.org/pubs/fb_teen_sex.html#tp*), each year in the United States about 10% of 15- to 19-year-old women become pregnant and 78% of those pregnancies are unplanned. During the 1990s, the teen pregnancy rate declined in the United States. However, it is still much higher than in any other developed country, twice as high as the pregnancy rate in England, and nine times higher than in Japan or the Netherlands.

Sexually transmitted diseases have long been a problem among adolescents. Each year, one in every four sexually experienced teens acquires a sexually transmitted disease (Alan Guttmacher Institute, 1999). Chlamydia and gonorrhea rates among adolescents are often higher than among adults. In some studies, researchers have found as many as 15% of sexually active adolescent women to have the human papillomavirus, some strains of which have a link to cervical cancer. The Guttmacher Institute also reports a higher hospitalization rate for acute pelvic inflammatory disease among adolescents than among older women. Typically

caused by untreated gonorrhea or chlamydia, pelvic inflammatory disease can lead to infertility and ectopic pregnancy.

The risk of contracting AIDS has increased the dangers associated with sexual behavior. The CDC (1998) reports that, through 1997, there were 2,953 cases of AIDS reported among adolescents. Although that number is relatively small, HIV infection typically occurs long before the diagnosis of AIDS. Thus, the fact that there were 22,000 AIDS cases reported among 20- to 24-year-olds through 1997 is probably due in large measure to HIV infections occurring during adolescence. The rate of AIDS is disproportionately higher among Hispanic and African American adolescents than among Caucasian youth. HIV infections are particularly high among homeless youth, juvenile offenders, and high school dropouts (CDC, 2000a).

According to the most recent Youth Risk Behavior Survey (CDC, 2000b), about half of high school students have had intercourse. About 16% of them reported having had four or more sexual partners in their lifetime, a behavior that is associated with a higher risk of sexually transmitted disease. Fifty-eight percent of sexually active adolescents surveyed in 1999 indicated that they had used a condom at their last intercourse. Yet, 42% of young people were still engaging in unprotected sex. The use of birth control pills declined from 20.8% in 1991 to 16.2% in 1999. This may be due, in part, to the increased use of condoms. Nonetheless, these numbers imply that a substantial proportion of adolescents are at risk for pregnancy.

Racial, Ethnic, and Gender Differences in These Behaviors

Racial and ethnic groups and genders differ in their reported rates of most of these behaviors. For example, boys are more likely to commit violent crimes (Blum et al., 2000; OJJDP, 2000) and property crimes (OJJDP, 2000). Arrest rates for white male youth are lower than for black or Hispanic youth, but girls' arrest rates do not differ by ethnicity (Snyder & Sickmund, 1999). Despite this, black, Hispanic, and white males ages 12–16 reported similar rates of destroying property and carrying a handgun over the last 12 months, based on 1997 data from the National Longitudinal Survey of Youth (Center for Human Resource Research, 2001). That study also found that black males were slightly more likely to report committing assault (21%) than the Hispanic (13%) and white (15%) males (Snyder & Sickmund, 1999). However, Blum et al. (2000) found that both black and Hispanic youth were significantly more likely than white youth were to report weapon-related violence.

Differences exist also in substance use. White adolescents are significantly more likely to become cigarette smokers than are black,

Hispanic, or Asian adolescents (Blum et al., 2000; Pierce, Giovino, Hatziandreu, & Shopland, 1989). According to the latest *Monitoring the Future* data, white and Hispanic adolescents have higher levels of illicit drug use than do black youth (*http://monitoringthefuture.org/pubs/monographs/overview2002.pdf;* Johnston, O'Malley, & Bachman, 2003).

Finally, youth risky sexual behaviors differ for males and females and for different ethnic groups. According to data from the Youth Risk Behavior Survey (CDC, 2000b), a higher proportion of males than females reported having had multiple partners in the last 3 months. More African American males reported multiple partners than did white or Hispanic males. Condom use was also highest among African Americans males and females. Table 1.1 provides a breakdown of these data.

What should we make of ethnic differences in the rates of these problems? Our answer is, "Not much." As Blum et al. (2000) have pointed out, the amount of variance accounted for by gender, race, and ethnicity is relatively small and a focus on these variables often tends to "negatively portray minorities . . . while only marginally advancing our understanding of the factors that contribute to the behaviors under study" (p. 1883). Differences due to these variables are small relative to other factors that distinguish young people engaging in problem behaviors from those who do not. It is easier to manipulate those other variables, including family, school, peer, and neighborhood factors. Thus, whether one is concerned with preventing crime among African American or white youth, one will need to be concerned about altering family, peer, school, and neighborhood influences.

Certainly, these data provide some guidance about where society might concentrate its resources in trying to prevent problems. For example, the higher rate of HIV/AIDS among African American youth (CDC,

TABLE 1.1. Adolescent High-Risk Sexual Behavior by Ethnicity and Gender

	White (%)		African American (%)		Hispanic (%)	
	Male	Female	Male	Female	Male	Female
Two or more partners last 3 months						
9th grade	10.0	5.8	25.3	13.2	11.2	2.3
12th grade	8.0	6.2	34.2	10.7	12.5	6.1
Used a condom at last intercourse						
9th grade	67.4	51.1	75.7	79.9	73.5	61.3
12th grade	54.8	45.1	70.7	60.9	60.8	34.9

Note. Data from Centers for Disease Control and Prevention (2000b).

2000a) points to the need for preventive programs targeting this population. However, it still seems a mistake to make too much of the differences. Even if white youth are more likely than black youth to take up smoking, we should target all youth with antismoking campaigns.

Finally, there is a legitimate fear that emphasis on racial or ethnic differences in the rates of these problems could contribute to stigmatizing particular minority groups.

With respect to gender differences, the differences in antisocial behavior are most noteworthy. Even at an early age, boys are more likely than girls are to exhibit aggressive behavior that may eventually develop into the various forms of antisocial behavior. Moreover, although no one has adequately studied it, we suspect that older antisocial boys influence much of the problem behavior of adolescent girls by encouraging them to get involved in drug use and risky sexual activity. This certainly justifies efforts to prevent the aggressive and antisocial behavior among boys. Yet, even if fewer girls manifest antisocial behavior, its consequences are no less serious. Thus, it seems important to ensure that these behaviors be prevented among all young people, but we need to be alert to differences in the factors that lead to problem behavior development.

What Are the Costs to Society?

Undoubtedly, the costs to society are enormous (see Chapter 3). Cost estimates of youthful violence and related property crime in the United States were at $165 billion in 1998. The estimate for binge drinking is $29 billion, for cocaine and heroin abuse $21.7 billion. High-risk sexual behavior cost $48 billion, mostly for quality of life lost. The cost of youth smoking during 1998 was a relatively low $79 million. However, the lifetime cost of smoking for those ages 12 to 20 in 1998 is approximately $1.8 trillion. We offer a detailed analysis of how to measure costs to society in Chapter 3.

Clearly, even modest improvements in our ability to prevent young people from engaging in these behaviors could have substantial benefits in reducing health care costs, property damage, lost productivity, and harm to the quality of life of these young people (and others whom they harm).

Why Focus on These Problems?

We do not focus on depression, suicide, or anxiety disorders—the so-called internalizing disorders—in this volume except if they occur with two or more of the problems we discuss. These problems are not as highly clustered with antisocial behavior, substance use, and sexual

behavior as the latter behaviors are with each other. For example, Loeber, Stouthamer-Loeber, and White (1999) found in their study of Pittsburgh boys that persistent internalizing problems were unrelated to persistent substance use, except when persistent delinquency was also present. Moreover, risk factors for depression, suicide, and anxiety often differ from those for the focal problems of this book. Adequately dealing with them would require a much larger volume.

Nonetheless, these internalizing problems overlap to some extent with the ones on which we focus here. For example, Fergusson, Horwood, and Lynskey (1994b) reported that adolescents with conduct problems, early sexual activity, and marijuana use were significantly more likely than young people without these problems to report problems with mood, suicide ideation, and low self-esteem. White (1992) concluded that, although psychological problems such as depression do not consistently cluster with other problem behaviors, they do predict future drug use. This implies that some adolescents may use drugs to cope with psychological problems. At the same time, Aseltine, Gore, and Colten (1998) reported that depression and substance use did not co-occur significantly in a representative sample of 900 9th-, 10th-, and 11th-grade students from three high schools in Boston.

These findings suggest that, although one is unlikely to address the bulk of anxiety, depression, and suicide problems by targeting youth who engage in serious antisocial behavior, substance misuse, and risky sexual activity, interventions targeting such multiproblem youth will sometimes need to address depression and related problems. In addition, strategies designed to prevent the development of the problems we do focus on may very well contribute to lowering the incidence of depression, suicide, and anxiety problems.

A PUBLIC HEALTH AND LIFE COURSE DEVELOPMENTAL PERSPECTIVE

A public health perspective recognizes the importance of preventing problems along the life course in order to influence the actual number of teens who develop and display multiple behavior problems. The essence of the public health perspective is its focus on affecting the incidence or prevalence of a problem in an entire population rather than affecting only individuals. The perspective differs from the one found in many systems dealing with youth development, where the focus is typically on whether an individual young person has been affected. Prevention scientists and public health-oriented practitioners emphasize the idea that helping individual young people has limited social impact if the total

number with a particular problem remains the same. Our ultimate goal should be to reduce the total number of young people who engage in one or more problem behaviors. To do this, we must consider the entire populations of youth.

Focusing on multiproblem youth may not seem to be in keeping with this view, because it singles out a subgroup of young people. However, we advocate greater attention to multiproblem youth precisely because they contribute such a large proportion to our social problems. In fact, it may be that interventions that do not deal with this subgroup will have limited impact because they fail to affect the young people most likely to engage in multiple and more serious levels of problem behaviors.

Life Course Development

We organize information about multiproblem youth according to a life course developmental perspective (Baltes, Reese, & Lipsitt, 1980). According to this model, normative age-related changes, historical and cultural circumstances, and unique life events influence a child's development. Important genetic and biological conditions interact with these environmental and social experiences to influence the way a child develops. Thus, the child's biological systems mature as the child simultaneously develops skills and behavioral propensities over time, and these processes are interdependent. For example, in adolescence, many changes conspire to affect the adolescent's choices about educational goals or potential careers. Hormones, personality traits, peer pressure, school success, parental expectations, and social demands all influence their decision making. We can think of the life course of this development as a "trajectory" or path. As young people develop, they may or may not move toward an increasing number of problem behaviors, depending on the unfolding interplay between the characteristics they bring to current situations and the nature of those situations.

These developmental changes occur in the context of economic and cultural conditions that also proscribe or constrain behavior: Teens experience adolescence during a recession in a different manner from teens that reach adolescence during an economic boom. A child whose father dies during adolescence will likely have a different high school experience than one whose father suddenly makes it big. What can seem like a small shift in the adolescent's world can substantially alter that child's developmental course.

Michael, the teen we introduced at the beginning of this chapter, was only 8 when he began to be engaged in high rates of aggressive and disruptive behavior. Shunned by his peer group, he started spending

more time with kids like himself, prone to deviant behavior. When his parents were unable to provide consistent consequences to help control his aggressive behavior, and teachers threw up their hands, he ended up seeking out acceptance from kids like himself. As a result, he became involved in delinquent acts, smoking, alcohol, and other drug use.

To start even younger, evidence suggests that delivery complications during birth are associated with the development of violent behaviors when those infants reach adolescence, but only in cases in which mothers express rejection of the infant (Raine, Brennan, & Mednick, 1994). Presumably, birth complications in some way affect the functioning of infants, and when they are born into a family in which they are not wanted, their family may not be able to cope with their behavior. This interaction between the characteristics of children and their environment sets them on a path toward delinquency. Although we do not yet know the precise mechanism that leads to these developments, the implications of this research are clear: Helping families of babies with birth complications to provide effective environments for their children may help to prevent delinquency. Interventions to prevent birth complications from occurring in the first place could potentially accomplish the same end.

These examples suggest that if we want to understand the development of multiproblem behavior—or of nonproblematic behavior—we need to consider how the characteristics of the child or adolescent at any point in time interact with the ways that the environment influences subsequent development. Furthermore, understanding these influences leads to possible strategies for preventing serious problems from occurring.

If our concern is with preventing multiproblem behavior among teens, do we need to consider their entire lifespan from the prenatal period through adolescence? The answer is emphatically, "Yes." We can identify—at every point in the lifespan—both individual characteristics and aspects of the environment that predict the later development of one or more problems. Each points to an opportunity to promote successful development and prevent the development of problems.

Table 1.2 presents a schematic of this framework, organized by phases of development and factors that influence those phases. Biopsychosocial characteristics involve attributes a child brings to the environment based on biological and behavioral predispositions established genetically and in earlier development. The environment consists of "social fields" (Kellam, Ling, Merisca, Brown, & Ialongo, 1998; Kellam & Van Horn, 1997), which are the primary social environments with which the developing child interacts. The obvious and most frequently studied environmental influences on child and adolescent development involve the family, peers, and school. As we show in Chapter 4, the individual characteristics of the child, as well as multiple facets of the envi-

TABLE 1.2. Sources of Influence and Life Course Development

	Phases of development						
Influences	Prenatal	Perinatal	Infancy	Early childhood	Middle childhood	Early adolescence	Adolescence
Child[a]	×	×	×	×	×	×	×
Family	×	×	×	×	×	×	×
Peer				×	×	×	×
School				×	×	×	×
Media				×	×	×	×
Neighborhood				×	×	×	×
Community				×	×	×	×

[a]The biopsychosocial characteristics of the child.

ronment, influence development throughout childhood and adolescence. Certain well-established individual characteristics, family conditions, peer processes, and school practices make problem behavior particularly likely to develop. Others promote the development of skills, orientations, and social involvements that make problems less likely. Communities that ensure nurturing families and schools and that promote positive peer group formation will prevent many adolescent problems.

Other aspects of the environment, such as neighborhood and community characteristics, are also important for youth development. These directly influence youth and play a role in family, schools, and peer groups. A range of policies influence tobacco use and the use of alcohol and the problems associated with their use. For example, laws making alcohol and tobacco less accessible to youth can prevent their use (Forster, Wolfson, Murray, Wagenaar, & Claxton, 1997; Holder, 1998; Holder & Blose, 1987).

The ×'s in the table depict our estimates of the phases in which each influence comes into play to affect the developing young person directly. However, the table does not depict the influences of these fields on each other. Throughout development, the child's individual characteristics both react to and influence interactions with family members, teachers, and peers. Neighborhood and community conditions influence the family. Schools and families influence peer groups. Neighborhood and community conditions influence the practices of schools.

In addition to what their social sphere produces, children bring their own array of genetic predispositions; biological characteristics; and cognitive, behavioral, and affective capacities. Children with low impulse control and an auditory learning disability will have a tougher

time sitting in their seat in school and are less likely to learn to read at a developmentally appropriate time. These individual characteristics influence how the child reacts to the environment. These environmental influences in turn shape the continuing development of the child's biological and behavioral responses.

How does a social field or environment affect a child's behavior? There are a few fundamental principles. Chief among them is the principle that *consequences* influence behavior (Biglan, 2003a). An obvious example is, when children receive positive reinforcement for good behavior, they will more likely do the expected next time around. In the economic arena, the cost of goods obviously influences buying patterns (e.g., Landsburg, 1993). At every stage of development, in every social field, the consequences of both prosocial and problematic behavior influence children's development. Michael, for example, learned early in life that hitting and swearing got his parents to give in to his requests. Others learn to get their own way by asking in a more appropriate and respectful manner. Indeed, the relative costs and benefits of problematic and nonproblematic behavior are pivotal in making it more or less frequent, although individual characteristics may make some children more responsive than others to particular types or patterns of consequences.

A second obvious influence involves *stressful life events*. These can be one stressful event—such as a death in the family—or ongoing stressors—such as crowded neighborhoods with high crime rates and ineffective police and school systems. Teachers or parents who scream at children in frustration, parents who quarrel openly and without resolution in front of their children, and peers who taunt others create stressors in a child's life. Stressors have direct and negative effects on physiological and psychological functioning as well as on behavior. Environmental stressors influence the level of hormones released in the body, which in turn influences both the structure and function of particular brain areas (Anisman & Merali, 1999). Communities that wish to ensure young people's successful development must minimize stressful events for young people and those around them.

The environment also creates opportunities for and places limits on young people's behavior. For example, ready availability of substances creates opportunities for their use. Settings in which early adolescents are unsupervised present opportunities for them to experiment with a full range of behaviors such as vandalism, precocious sexual behavior, and substance use (Richardson, Radziszewska, Dent, & Flay, 1993). Settings that limit opportunities, such as supervised recreation programs, make such experimentation less likely.

Behavior can be neither discouraged nor promoted if others are not aware of it. How adolescents are monitored and watched by parents,

schools, and communities will affect how often problem behaviors are noted. Parents who know where their kids are, are aware of what they are doing, and interact with them regularly are in a much better position to reinforce desirable behavior and to prevent or penalize risky behavior. Schools must set up systems to detect problem behavior, but they must also have systems for recognizing desirable behavior. Communities that have systems for detecting such problems as drunken driving can significantly reduce fatal car crashes (Holder et al., 2000).

The process of *persuasion* is also important, especially the way in which media influence behavior. In general terms, young people come to view objects and activities more or less favorably, depending on the contexts in which they view those activities. For example, when cigarette smoking appears in a context of exciting and desirable activities, it will appear more favorably (USDHHS, 1994). We can examine the extent to which young people's environments persuade them to view problem behavior favorably. Examining the media to which they are exposed is especially important.

Group norms influence behavior. Norms refer to the extent to which a behavior occurs in a group and the extent to which others are likely to approve it. Young people are more likely to engage in a behavior to the extent that they perceive that others engage in the behavior or would approve of their engaging in it. Peer-group norms are especially influential for problem behavior, but families, schools, neighborhoods, and communities have normative influences.

Finally, young people's social environments can cultivate social, verbal, cognitive, artistic, and athletic skills through *skill training*. In many educational situations (e.g., when a child is learning to read, do simple arithmetic, or play a new sport), the skill training is obvious. Skill training can occur with social behavior as well. For example, a child learns new skills when his parent teaches him how to handle a problem with his older brother. A parent can learn from a therapist who teaches her how to how to discipline without hitting. Skill training is a complex process that usually includes modeling behavior, instruction, opportunities for the child to practice the new skill, and reinforcement of gradual improvements in skills and performance. In building communities in which most children develop successfully, it is essential to examine whether their everyday environments are organized to teach them desirable skills and minimize opportunities for them to learn problematic behaviors.

To understand how children develop and how to intervene to prevent problems, we must look at all these mechanisms and how they operate within families, schools, peer groups, neighborhoods, and communities to shape the biological and social characteristics that children carry forward into adolescence. As Chapter 4 describes in detail, consequences, stressors, opportunities and limits for behavior, monitor-

ing, skill building, persuasion, and group norms all contribute to the development of problem behavior. This information defines points of intervention helpful for changing the life course of children such as Michael.

A Focus on Communities

The community is a natural focus for efforts to reduce the prevalence of youth problem behaviors. Local communities generally organize schools, family services, police practices, juvenile justice, media, and business (Biglan, 1995). These communities could also effectively implement efforts to change any of the proximal influences on problem behaviors and can most effectively mount comprehensive interventions at that level. Interventions that include media and community organizing or that combine school, family, and peer-group interventions are difficult or impossible to evaluate in smaller units. Communities are also the natural unit for assessing population-based outcomes. By focusing on community-level measures of the prevalence of drug use and abuse, we have the opportunity to move to the ultimate goal of public health research, namely, to affect entire populations.

Experimental Evaluation

In this book, we rely heavily on experimental evidence of the effects of programs and policies. We have reached a point in the development of the behavioral sciences when it is reasonable to demand experimental evidence of the efficacy of practices that claim to be of value. Practitioners have experimentally evaluated numerous policies and programs, and the resources and technical knowledge to conduct experimental evaluations are increasingly available. For the most part, we restrict our attention to programs and policies previously experimentally evaluated. As will be seen, there is still plenty to discuss.

Critics will argue that requiring experimental evidence of the effects of a preventive or treatment intervention may cause us to overlook valuable programs. There are undoubtedly valuable programs not yet evaluated but which are making a difference in the lives of young people. The problem, however, is that we do not know which ones they are.

We are not suggesting that a community interested in improving outcomes for its young people could not make progress by adopting some practices not experimentally evaluated. We simply suggest that a community would be on firmer ground by starting with the implementation of programs and policies already shown by experimental evaluation to be of value in some other setting. There is no guarantee that they will work, but they are a better bet than unevaluated practices.

Prevention and Treatment

Societies expend the bulk of their resources for dealing with common problems of human behavior on treatment of the problems rather than on their prevention (Mrazek & Hagerty, 1994). In most cases, it would probably be more cost-effective and humane to organize societies so that problems never occur, rather than to wait until they do and attempt to ameliorate them. However, given the current state of our knowledge, we take the view that both treatment and prevention practices should be included in any organized effort to address the problem of multiproblem youth. Research in recent years has identified both treatment and prevention practices that can affect these problems. It is unlikely that even the best prevention program will prevent every instance of a problem. Why would we want to forego the opportunity to ameliorate the problems that do develop, if efficacious interventions are available?

Moreover, the prevention–treatment distinction is, to an extent, a false dichotomy. Many of the most effective preventive practices are themselves "treatment" procedures. For example, nurse home visitation helps poor, young mothers to improve their health habits and parenting practices and thereby prevents adolescent problems such as delinquency (Olds, Henderson, Cole, et al., 1998). It both treats and prevents. Virtually any treatment program targeting children has the potential to prevent the development of problems in adolescence because problems in childhood make so many adolescent problems more likely.

As will be shown in Chapters 5–8, the few available cost-effectiveness analyses suggest that preventive interventions can save considerable public and private money. At the same time, even our best approaches cannot reach and affect every child. Some children will develop serious problems despite our best efforts, and approaches must be in place to reduce these problems after they develop. Thus, we must adopt the best preventive and intervention approaches if we wish to have an impact on not only the prevalence of problems currently but also the emergence of problems in the future.

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