physical activity levels, determinants, and interventions among minority adolescents. They point to the need for further research in these areas and specifically request that health care professionals capitalize on their unique opportunities to intervene in minority adolescent populations. Wilson, Nicholson, and Krishnamoorthy, in chapter 6, emphasize the important role that diet may have in preventing the incidence of morbidity and mortality among minority adolescents. These authors provide a framework for understanding the significance of environmental, individual, and genetic influences on developing dietary interventions for specific minority adolescent populations. In the next chapter, Guthrie, Caldwell, and Hunter provide a review of the antecedents and correlates of several health problems currently affecting minority female adolescents. They outline social, cultural, and psychological contextual factors that may have significant impact on future health-promotion efforts targeted at this population. Finally, in chapter 8, Hazuda and Monterrosa present prevalence rates of chronic illnesses among specific minority groups. In particular, this chapter reviews health behaviors that are relevant in preventing chronic illness.

In summary, Part II provides an overview of a variety of health risk and health-promoting behaviors. As a whole, these chapters describe an important profile of health-related behaviors. This profile can serve as a basis for guiding clinicians in their efforts to improve minority adolescent health.

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Chapter

3

Preventing Drug Abuse and Violence

Gilbert J. Botvin and Lawrence M. Scheier

Drug abuse and violence are two of the most serious public health problems in the United States. Etiological studies have shown strikingly similar causes for these problems. Although drug abuse and violence prevention efforts have evolved independently, there is a surprising degree of overlap in the objectives and methods of many approaches. Moreover, empirical data and theoretical formulations suggest that an array of adolescent problem behaviors (including drug abuse and violence) are interrelated, raising the possibility that multiple problem behaviors may be prevented by a common intervention strategy. Although racial and ethnic differences have been observed with respect to drug abuse and violence, there appear to be considerable similarities across populations in the risk factors associated with these problems. However, available evidence concerning the etiology and prevention of drug abuse and violence in racial and ethnic minority populations is limited.

This chapter is not intended to be a comprehensive review of the existing literature. Rather, it was designed to summarize what is known about effective school-based approaches to drug abuse prevention and to discuss the kind of prevention model that might have dual applicability to drug abuse and violence. We begin with a summary of the prevalence and current trends in drug use and violence, discuss the relationship between drug abuse and violence with respect to etiology, and then suggest a general developmental model for drug abuse and violence that integrates several theoretical perspectives. We describe school-based approaches to drug abuse prevention along with evaluation data concerning their effectiveness—for youth in general and with respect to minority populations in particular. Although most of the existing literature consists of studies conducted with predominantly White populations, this literature provides an important point of departure for identifying approaches that might also be effective with racial and ethnic minority adolescents. Where empirical evidence exists, we discuss racial and ethnic differences in prevalence rates and etiology as well as research concerning the effectiveness of preventive interventions targeting minority youth.

Prevalence and Current Trends in Drug Use

Recent national survey data (Johnston, O'Malley, & Bachman, 1994) have shown a sharp rise in marijuana use among eighth, tenth, and twelfth graders as well as an increase for all three grade levels in the use of cigarettes, stimulants, LSD, and inhalants. This reversal of the decade-long downward trend in drug use underscores the importance of developing more effective strategies to prevent drug abuse. Among high school seniors, 31% had used illicit drugs in the past year, and 42.9% had done so during their lifetime. Specific drug use data were as follows: The annual prevalence rates were 26% for marijuana, 7% for inhalants, 6.8% for LSD, and 8.4% for stimulants. The lifetime rates for these respective drugs were 35.3%, 17.4%, 10.3%, and 15.1%. For alcohol use, the annual rate was 76% and the lifetime rate was 87%. Although annual rates for smoking were not provided, the lifetime rate was 61.9%, and the 30-day rate was 29.9%.

Since 1991, when racial and ethnic differences were included in the national estimates for secondary school students, Black youth have reported the lowest prevalence estimates for all drugs mentioned in the survey, whereas Hispanic youth have reported the highest lifetime, annual, and recent 30-day prevalences. A different picture emerges, however, from the National Household Survey (National Institute on Drug Abuse [NIDA], 1991), which lumps together a broader age range inclusive of individuals from 12 through 17 years of age (thus, high school seniors are included along with eighth graders). In this survey, which relied on face-to-face interviews, prevalence estimates for marijuana use in the past year were largely the same for Blacks (10.4%), Whites (10.3%), and Hispanics (9.4%). Recent data from the 1993 NIDA survey showed that annual illicit drug use among Hispanics had soared from 13.3% to 17.6% and usage was at the highest level among the three largest racial groups. Whites were second at 13.5%, followed by Blacks (11.0%), for any illicit drug use in the past year (NIDA, 1993).

Given disproportionately higher rates of drug-related problems among minority populations relative to Whites, it might reasonably be expected that rates of drug use would be correspondingly higher. The fact that a number of national, state, and local surveys have found that the prevalence of drug use is either the same or lower for ethnic minority youth than for White youth has led to considerable speculation. Attempts to account for lower than expected rates of drug use found in several surveys for different racial and ethnic groups (particularly for Black youth) have considered a range of possible explanations. Some of the explanations considered include differential truthfulness, larger than average within-group gender differences, differential school dropout rates leading to underrepresentation of drug users in school-based minority drug surveys, delayed initiation, and differences in discretionary income. However, empirical examination of these hypotheses using national survey data from the Monitoring the Future Study (Wallace, Bachman, O'Malley, & Johnston, 1995) has generally failed to adequately explain disparities between observed and expected prevalence rates for drug use among minority youth.

Role of Racial and Ethnic Factors

In addition to exploring racial variation in patterns of drug use, several researchers have begun to examine the specific ways in which ethnic and cultural factors contribute to different etiologies among White, Hispanic, and Black youth. Unfortunately, no clear consensus

has emerged from these studies. For example, Dembo, Blount, Schmeidler, and Burgos (1986) reported nonsignificant associations among perceived environmental risk (e.g., status given to gangs and drug availability), ethnicity, and drug use. In contrast, Barnes and Welte (1986) reported that Black and Hispanic youth had higher prevalence for alcohol-related social problems than did Whites, despite higher rates of drinking among Whites. They also noted that, on the basis of select analyses of students reporting high levels of illicit drug-related social problems, minority youth reported almost double the number of alcohol-related problems compared with White youth.

Newcomb and colleagues (Maddahian, Newcomb, & Bentler, 1988; Newcomb, Maddahian, Skager, & Bentler, 1987) reported that ethnic group membership was an essential factor in determining risk status and that it contributed independently to adolescent drug use. They also noted ethnic differences in the number of psychosocial risk factors and their relationships to drug use. Blacks were at the lowest risk for each of the individual risk factors studied (e.g., self-esteem, psychopathology, and low grades) and had the lowest scores on a summed unit-weighted risk index compared with White, Asian, and Hispanic youth. However, Black youth at greatest risk (seven-plus risk factors) were 100% more likely to be smoking cigarettes, and among Black youth there was also a significant positive association between being characterized as a heavy (daily) user of tobacco, alcohol, or marijuana and the number of risk factors. Thus, despite their comparatively lower rates of risk both for drug use and in terms of number of risk factors, a small proportion of Black drug-using youth appear to be at heightened risk (see also Maddahian, Newcomb, & Bentler, 1985).

Additional studies have also highlighted ethnic differences in correlative patterns between risk and drug use. Coombs, Paulson, and Richardson (1991) reported different predictors for licit and illicit drug use among Hispanic and White youth. Parental objection to selection of friends was significantly and negatively related to tobacco and alcohol use for Hispanic youth but not for Whites. Gender, on the other hand, was an important predictor for White but not for Hispanic youth. Among Hispanics, a youth's attitude toward parental objection to friends was a significant predictor of marijuana use, whereas only perceived friends' use of marijuana entered into the equation for White youth. Other studies have corroborated the finding of differential etiologies for Black and Hispanic youth. Flannery, Vazsonyi, Torquati, and Fridrich (1994), for example, reported that perceived

friends' use of alcohol, a measure of aggression, school adjustment, and peer pressure predicted male Hispanic drug use, whereas friends' alcohol use, peer pressure, and aggression predicted drug use for White boys. The model for White girls included grades and parent–child relations in addition to the variables mentioned for boys; the model for Hispanic girls included only school adjustment as a significant predictor of drug use.

Prevalence and Current Trends in Violence

Related to drug abuse is the problem of violence, which has ascended to the very top of the U.S. national agenda in recent years and has become a public heath problem of significant magnitude. According to national data, over 20,000 deaths and 2.2 million nonfatal injuries occur each year as a result of interpersonal violence (Centers for Disease Control and Prevention [CDC], 1985). Although national sources of data (such as the Uniform Crime Reporting Program and the National Crime Survey) exist, it is generally acknowledged that the data on nonfatal injuries from assaultive violence are underreported and may actually be 2 to 3 times higher than national crime data indicate (Hammond & Yung, 1993). National trend data suggest that although the proportion of young people committing serious violent crimes (e.g., aggravated assaults, forcible rapes, and homicides) is about the same as in 1980, the frequency of violence against today's youth and its lethality have increased significantly (Federal Bureau of Investigation, 1992). Violence is the second leading cause of injury-related death in the United States, and homicide risk increases dramatically during adolescence (Rodriguez, 1990). In New York City, homicide is the leading cause of death for adolescents ages 15 to 19 years (New York City Department of Health, 1993). The results of a national survey conducted in 1991 indicated that 26% of high school students had carried a weapon at least once in the past month (Kann et al., 1993).

Ethnic minority youth are at particularly high risk for violence. As Hammond and Yung (1993) noted in their excellent review article, inner-city Blacks, Hispanics, and Native Americans are at greater risk for assaultive violence than Whites. Black youth are at 4 times greater risk for homicide than White youth of the same age; followed by Hispanics, at 3 to 4 times greater risk than Whites; and Native Americans, who are at twice the risk. Although murder rates are typically higher

among males than females, the magnitude of risk for Black males and females relative to White males and females is equally great. Similar patterns of risk exist for assaultive violence not resulting in death. Ethnic differences also have been noted with respect to the sources of violence. Blacks have family-friend-acquaintance homicide rates that are 6 times higher than Whites. Hispanics have the highest homicide rates by gang-related violence. Asian Americans are less likely to experience violence from someone they know, but have the highest rates of violence from strangers.

Relationship Between Drug Abuse and Violence

Data from several sources suggest a strong interrelationship between drug abuse and violence (e.g., Elliott, Huizinga, & Menard, 1989; Kingery, Pruitt, & Hurley, 1992). It is not only that drug abuse is a predictor of later involvement in assaultive violence but that homicides and other types of assaultive violence occur while individuals are under the influence of alcohol (Dawkins & Dawkins, 1983) or illicit drugs or are involved in drug-related criminal activity (Tardiff & Gross, 1986). Suicidal behaviors, another form of violence, have also been found to be related to aggression and substance use among high school students (Garrison, McKeown, Valois, & Vincent, 1993). Despite these associations, the relationship between drug use and violence is complex and poorly understood. Several longitudinal studies (Kandel, Simcha-Fagan, & Davies, 1986; White, Pandina, & LaGrange, 1987) found little evidence that drug use either necessarily precedes or follows violence, only that they tend to co-occur in some individuals and are associated in frequency and severity. Neither is a necessary or sufficient condition for the other, but existing evidence suggests that both may have similar etiologies.

Etiological Factors

A common set of demographic, environmental, inter- and intrapersonal factors appear to be involved in the etiology of drug abuse and violence. According to review articles (e.g., Elliott, 1994; Hammond & Yung, 1993), a number of risk factors are associated with assaultive violence. Demographic factors include poverty, ethnic minority group membership, gender (i.e., being male), age, and living in the inner

city. Family factors include weak family bonding; ineffective monitoring and supervision; exposure to and reinforcement of violence in the home; poor impulse control and problem-solving skills of caretakers; and the acquisition of expectations, attitudes, beliefs, and emotional responses that support or tolerate the use of violence. Media influences include the modeling of violent behavior as an appropriate response to a variety of situations as well as the desensitization to violence that comes from seeing an estimated 180,000 murders, rapes, armed robberies, and assaults during the 15,000 hours of cumulative viewing that have been spent watching TV during childhood and early adolescence (Comstock & Strasburger, 1990). Such dispositional or temperamental factors as antisocial personality, attention deficit disorder, or poor impulse control have also been implicated. Other psychosocial factors include commitment to conventional norms and values; expectations, attitudes, and beliefs about sources of violence; perceived threats and misattributions of others' intentions; normative beliefs about the appropriateness of violence as a problem-solving strategy; and difficulty coping with anger and frustration. In addition, lack of personal competence and independence, low self-efficacy, poor problem-solving skills, poor social skills, and difficulty in coping with stress and anger can be contributing factors. Related to this is the use of alcohol and drugs, poor academic performance, and involvement with a delinquent peer group (e.g., gang membership) in which violence is modeled and reinforced. According to Elliott (1994), violence is often used to achieve desired goals, such as power and status, or as a method of resolving conflict; for many it is viewed as the most effective means of achieving these goals. Many of these same factors have been associated with drug use (Botvin & Botvin, 1992; Hawkins, Catalano, & Miller, 1992).

Etiological Mechanisms

Similar etiological mechanisms also appear to accentuate or mitigate vulnerability for drug abuse and violence. Cognitive–mediational and social interaction models of aggression in children and young adolescents support the view that deficits in social problem solving and poor cognitive strategies foster the development of deviant and antisocial behaviors (Dodge, 1980, 1986). A conceptual basis for these models is that functional deficits in social information processing lead to inappropriate and often negative attributions, appraisals, and expectations

regarding peer-instigated behavior (Lochman, 1987). A growing literature has also documented that aggressive youth are characteristically low in self-esteem, feel rejected by the larger (normative) peer group, and suffer from poor academic performance. On the basis of a number of empirical studies of aggressive and antisocial male children and adolescents, Coie, Lochman, Terry, and Hyman (1992) concluded that the combination of social withdrawal and peer rejection contributed largely to "channeling rejected, aggressive boys into deviant peer groups that in turn influence their members toward increased antisocial behavior" (p. 783). These associations serve to bolster self-esteem and promote social interactions circumscribed by behavioral standards and normative beliefs that favor aggressive responses (Lochman, 1992). Longitudinal studies of antisocial behavior (e.g., Patterson, 1986) have suggested that deficits in familial social interactions precede the development of inadequate social and cognitive skills in children. Deficiencies in these skills foster school problems, feelings of rejection from peers and family, and learned behavioral contingencies (coercive processes) that produce delinquent and antisocial behavior. According to Patterson's model, the combination of poor parenting practices, inappropriate parental discipline, and a lack of parental monitoring establishes a hostile and negative environment for a child. These conditions are often exacerbated by social and economic disadvantage, language barriers, and poor acculturation.

Figure 1 provides an overview of an aggression and violence model that incorporates elements of social–interactional and social–cognitive perspectives. Ideally, the behavioral transformations consistent with these views unfold developmentally from early childhood through early adolescence. The area designated as "parallel developmental contingencies" represents the more common risk-engendering psychological processes hypothesized to foster violence and drug abuse behavior. A variety of factors influence whether a youth will be prone to violence, drug abuse, or some combination of both, including (a) individual differences in vulnerability, (b) activation of protective mechanisms (e.g., low family tolerance of deviance), (c) exposure (e.g., when a specific risk factor operates along the developmental continuum), and (d) the intensification or amelioration of prior risk processes (e.g., dysfunctional family functioning that perseveres throughout childhood). For example, early family dysfunction and poor parental monitoring can lead to early stage delinquency, social strain, and poor social skills. Left unabated, these problems can accentuate

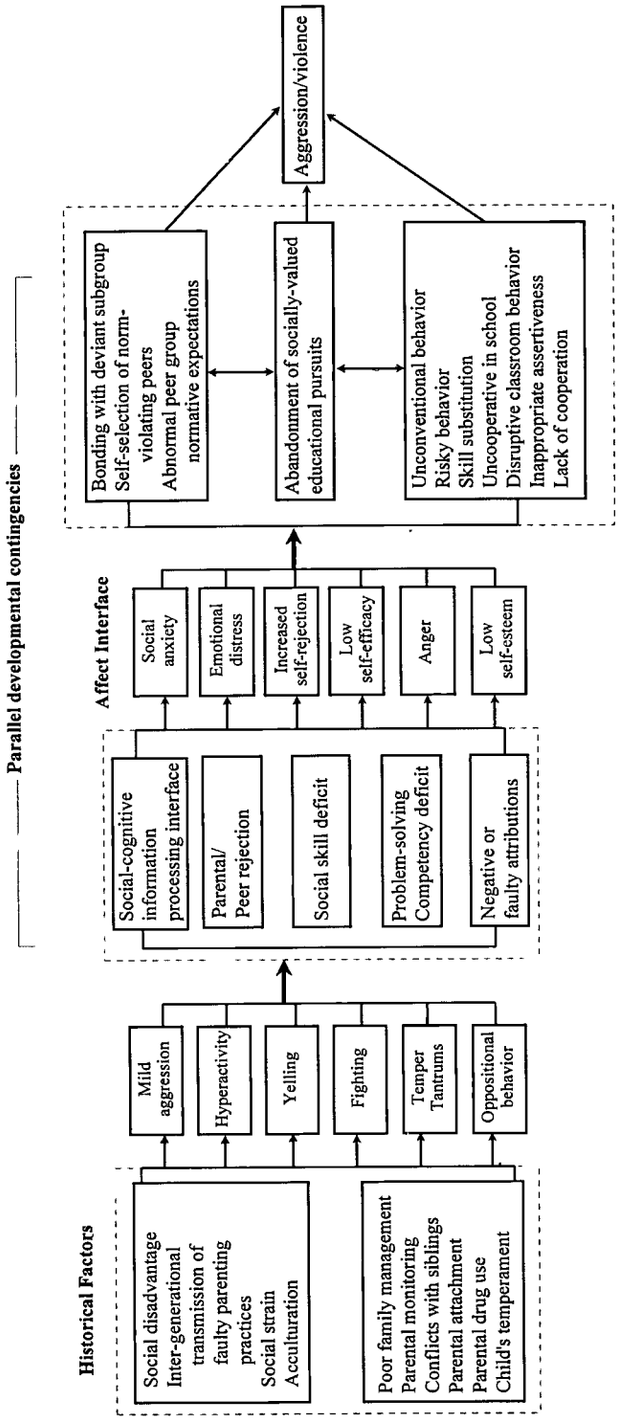

Figure 1. A hypothetical domain model depicting parallel developmental contingencies for aggression and violence.

peer rejection by prosocial groups and foster the need for deviant subgroup bonding. This type of bonding facilitates the adoption of inappropriate behavioral standards for aggression as well as drug use, which is more easily accessible and reinforced (Coie et al., 1992).

Most contemporary theories of adolescent drug abuse underscore similar risk mechanisms that lead to drug abuse (e.g., see Newcomb & Bentler, 1988). Although emphasizing somewhat different risk factors, different points of developmental inflection, or different causal relations, models of drug abuse and antisocial behavior share a common thread in the primacy of social and personal competence. Although previous explanatory models of violence and drug abuse have stressed the causal nature of these processes, many of the risk processes can be conceptualized as recursive or reciprocal pathways that reflect behavioral maintenance or exacerbation. Moreover, the earlier model as presented in Figure 1 is not intended to convey a sense of equilibrium or equipotentiality among the postulated causal processes. Numerous factors impinge differentially on the hypothesized relations, including duration of risk, intensity, amplification, buffering, or inoculation, to name just a few, all of which modulate the effects of risk over time.

Theoretical Considerations

A Problem Behavior Perspective

Theoretical formulations and empirical data point to relationships among multiple problem behaviors. Thus, the relationship between drug abuse and violence may merely be part of a larger constellation of interrelated behaviors that also includes truancy, delinquency, and precocious or unprotected sexual activity. Problem behavior theory (Jessor & Jessor, 1977) conceptualizes these behaviors as part of an overall syndrome of functionally similar behaviors with a common etiology. Empirical support for a problem behavior syndrome or general deviance latent construct can be found in Jessor's own work (e.g., Donovan & Jessor, 1985; Donovan, Jessor, & Costa, 1988) as well as the work of others (e.g., Farrell, Danish, & Howard, 1992; McGee & Newcomb, 1992). Coie et al. (1993) has extended and articulated the notion of a cluster of related behaviors with a common etiology or set of risk factors as a basic prevention principle in the mental health field.

The significance of these conceptualizations and the supporting empirical data is that once a common set of predictors or risk factors is identified and an effective intervention is developed, it may be possible to prevent several different problems or disorders with a single prevention approach.

General Developmental Risk Mechanisms for Violence and Drug Abuse

Figure 2 shows a general developmental risk mechanism with common pathways and developmental contingencies for aggression or violence and drug abuse. Elements from several prominent theories of drug abuse (e.g., self-derogation, social influence, and peer cluster) and antisocial behavior are included to represent a broad mixture of risk processes. Given the utility of many of the putative risk–protective factors for predicting a wide variety of outcomes (i.e., problem behaviors), a superordinate construct of "general deviance' is modeled as the criterion (e.g., Donovan & Jessor, 1985; McGee & Newcomb, 1992). Variations on this model can be contrasted statistically with structural equation modeling (SEM) techniques. The figure designates key areas for developmental change and individual growth. In effect, the model captures etiologic-specific risk processes as well as key intervention points. The figure suggests that the effects of early family processes, personality, social, and cognitive factors on the behavioral outcomes are sequentially processed through a series of social–cognitive filters that culminates with the decision to engage in aggressive behavior or drug use.

According to Dodge and others (Dodge, 1980; Dodge, Price, Bachorowski, & Newman, 1990), deficient processing at any point along this continuum leads to deviant and antisocial behavior. Thus, we hypothesize that youth characterized as impulsive, risk taking, lacking in diligence, having poor self-reinforcement skills, and having low self-esteem engage in drug use primarily for the positive social benefits (e.g., it makes them look cool, helps them obtain friends, and elevates peer status). The immediate and proximal motivational reasons are captured under "social influences" and allude to the acquisition of deviant and antisocial behavioral standards. This approach may best characterize early stage drug abuse, but the model is also applicable to early stage delinquency (e.g., bullying and fighting). For instance, we would hypothesize that impulsive, poor self-monitoring

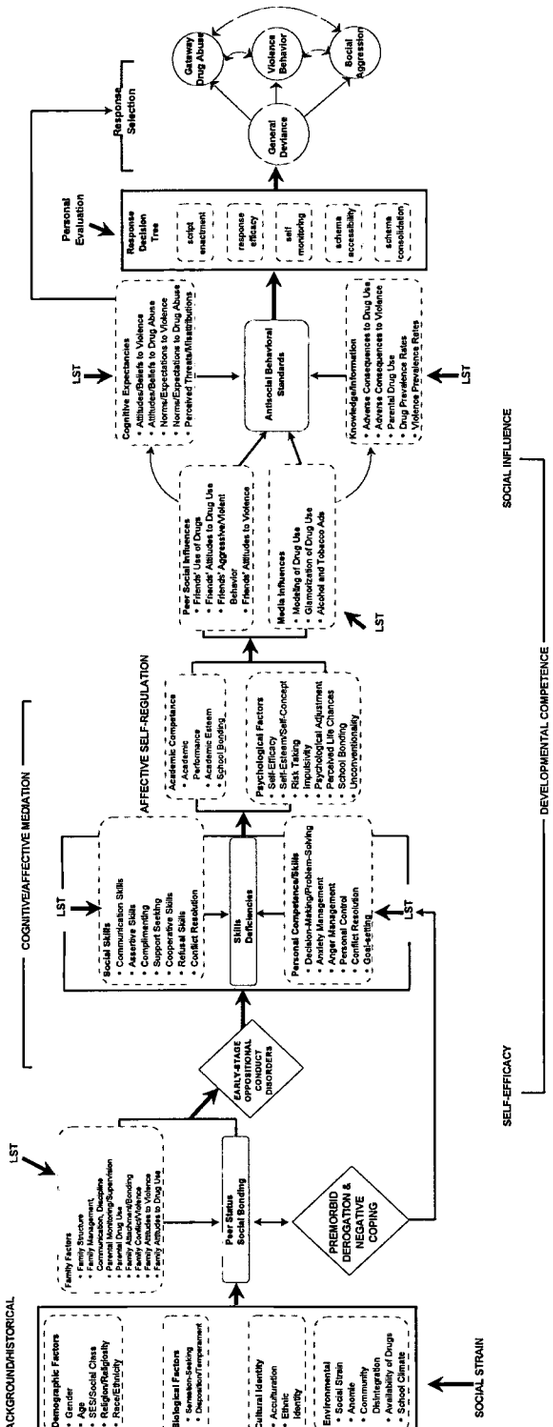

Figure 2. A common developmental pathway for violence-related and drug abuse behavior. Large, bold-headed arrows designate key areas for developmental change and individual growth. Risk processes are designated by diamonds, aggregate risk factors are enclosed by stippled lines, and hypothesized psychological filters are designated by large bold-faced boxes.

youth with low self-efficacy (low internal control) would have difficulty forming lasting ties with peers, school, or social institutions (i.e., clubs). For these youth, exacerbated drug use leads to violent behavior (i.e., fighting, property destruction, and extreme forms of antisocial behavior, including self-destruction). Although both drug use and violent behavior are considered under a single rubric of general deviance, risk processes specific to each construct may be examined using SEM techniques (McGee & Newcomb, 1992).

Consistent with social strain and developmental models of aggression, our model hypothesizes that violence-prone or drug-abusing youth have crafted a set of expectancies and values that originated in childhood family interactive sequences and that these expectations regarding self and others have survived intact through their early adolescent years. The lack of preparation to address the high levels of conventionality and emphasis on skill acquisition and development in competitive environments such as in school stimulates a process by which these youth disengage from learning and begin to drift toward supportive, although highly deviant, peer groups that promote a new set of working standards (Snyder, Dishion, & Patterson, 1986). These standards usually include physical fighting as a vehicle to gain peer approval, drug use to obtain peer acceptance, and unconventional and high-risk behaviors to maintain peer status. A sequence of this nature promotes heightened delinquency (truancy, vandalism, and crime).

It is important to note that, in its initial stages, drug abuse is not a sufficient condition for violent behavior but instead accentuates certain vulnerabilities and risk-potentiating conditions. Thus, for many youth, violent behavior is "caused" by a risk mechanism that also includes long-term drug abuse. For instance, youth with low esteem who lack personal competence and social skills are likely to bond with other deviant friends to gain recognition and diminish their negative derogation. Early stages of delinquency include fighting and aggression to maintain peer status, which contribute to the development of behavioral standards. This activity enhances adolescents' expectancies for violence or drug use (e.g., "drugs help me gain peer approval"), which are consolidated through reinforcement and instrumental learning. However, continued drug use enmeshes these youth in a perpetual cycle of deviance (or activities that promote deviant behavior). As a second stage, our model hypothesizes that continued deviance in the presence of drug use will lead to violence (e.g., fighting with teachers, parents, and associating with nondeviant school peers).

Intervention Approaches

Approaches to Drug Abuse Prevention

Reviews of the prevention research literature (Botvin & Botvin, 1992; Hansen, 1992) and meta-analytic studies (Bangert-Drowns, 1988; Bruvold & Rundall, 1988) have indicated that drug abuse prevention programs using information dissemination, affective education, and alternatives approaches are ineffective. Studies testing these approaches have not been able to produce reductions in drug use behavior. The most promising approaches, according to available evidence, are those that target the psychosocial factors implicated in the initiation of drug abuse (Bangert-Drowns, 1988; Botvin & Botvin, 1992; Bruvold & Rundall, 1988). All of these approaches have been designed to be implemented with junior high school students in classroom settings and to provide students with the information and skills necessary for resisting social influences to use drugs. Some also teach an array of personal and social skills to decrease potential motivations for using drugs.

Resisting Social Influences

The most widely researched psychosocial approach to drug abuse prevention relies on a prevention model that derives from social psychology. The underlying conceptualization of this model and its many variations is that adolescent cigarette smoking, for example, is the result of social influences (persuasive messages) from peers and the media in the form of offers to smoke cigarettes, advertising appeals, and exposure to smokers who may serve as role models.

The prevention approaches based on this model have typically contained two or more of the following components: psychological inoculation, correcting normative expectations, and resistance skills training (Evans et al., 1978; Flynn et al., 1992; Ross, Greene, & House, 1977). Early research with approaches based on this model emphasized psychological inoculation and modifying normative expectations. More recent approaches have tested variations on this model that emphasize resistance skills training. Some approaches have added other components, such as having students make a public commitment to not use drugs.

Evaluation Results

Researchers have conducted a number of studies evaluating the effectiveness of social influence approaches to drug abuse prevention over the past decade and a half. Results of both small- and large-scale studies have documented the effectiveness of these approaches (e.g., Arkin, Roemhild, Johnson, Luepker, & Murray, 1981; Luepker, Johnson, Murray, & Pechacek, 1983; Pentz et al., 1989; Perry, Killen, Slinkard, & McAlister, 1983; Snow, Tebes, Arthur, & Tapasak, 1992; Sussman, Dent, Stacy, & Sun, 1993; Telch, Killen, McAlister, Perry, & Maccoby, 1982). Most of these studies have focused on smoking prevention, with some researchers reporting results in terms of smoking onset (preventing the transition from nonsmoking to smoking), others reporting results in terms of overall smoking prevalence, and still others reporting results with respect to an index measure or scale of smoking involvement.

Several follow-up studies (e.g., Luepker et al., 1983; MacKinnon et al., 1991; McAlister, Puska, Koskela, Pallonen, & Maccoby, 1980; Pentz et al., 1989; Sussman et al., 1993; Telch et al., 1982) have reported positive behavior effects lasting for up to 3 years. However, data from several longer-term follow-ups (Bell, Ellickson, & Harrison, 1993; Ellickson, Bell, & McGuigan, 1993; Flay et al., 1989; Murray, Davis-Hearn, Goldman, Pirie, & Luepker, 1988) have shown these effects to gradually decay over time, suggesting the need for ongoing intervention or booster sessions. Because little is known about the nature and timing of booster interventions, additional research is needed. Also, because relatively little research has been conducted with substances other than tobacco, data concerning the durability of prevention effects on other substances are not yet available.

Teaching Resistance Skills and General Life Skills

The second major approach to drug abuse prevention emerging during the past decade and a half integrates the teaching of skills for resisting social influences to use drugs with the development of general personal and social skills. In our research at Cornell University, we have tested a prevention approach called Life Skills Training (LST) that is based on this prevention model. As indicated in Figure 2, the LST approach is designed to affect a number of the factors believed

to play important roles in the etiology of drug abuse and violence. The LST prevention program can best be conceptualized as consisting of two general-skills-training components to enhance overall personal competence and a problem-specific component relating to drug abuse prevention. The program consists of 15 class periods, each roughly 45 min long. We have summarized the three components and the intervention methods and materials elsewhere (e.g., Botvin & Tortu, 1988; see also chap. 11, this volume).

Over the past 15 years, a series of evaluation studies (summarized by Botvin & Botvin [1992]) have been conducted to test the effectiveness of drug abuse prevention approaches based on the LST model. These studies have been conducted in a logical sequence intended to facilitate the development of a prevention approach that is effective with different problem behaviors when implemented by different types of providers and with different populations. The focus of the early LST research was on cigarette smoking and involved predominantly White middle-class populations. Later research extended this work to other problem behaviors, including the use of alcohol, marijuana, and, most recently, illicit drugs other than marijuana. These studies have shown that the LST approach can reduce drug use among junior high school students (compared with untreated control participants) by up to 87%. Long-term follow-up data collected at the end of high school have provided empirical support for the durability of these effects on drug use as well as their potential for preventing more serious levels of drug involvement (Botvin, Baker, Dusenbury, Botvin, & Diaz, 1995). In addition, this research has increasingly been focused on the utility of the LST approach with inner-city minority populations.

Prevention Among Racial and Ethnic Minority Youth

A gap in the drug abuse prevention field that has only recently begun to be addressed concerns the lack of high-quality research with minority populations. In developing preventive interventions for minority populations, researchers have followed two strategies. One strategy, based on the assumption that the etiology of drug abuse is different for different populations, involves the development of interventions designed to be population-specific. The other strategy, which is based on the assumption that the etiology of drug abuse is more similar than different across populations, involves developing interventions to be generalizable to a broad range of individuals from different populations. Research with the LST program has followed the second course; that is, where warranted, modifications have been made to maximize generalizability, cultural sensitivity, relevance, and acceptability across varied populations. Although there are only limited data concerning the etiology of drug abuse among minority populations, existing evidence does suggest that there is substantial overlap in the factors promoting and maintaining drug use and abuse among different racial and ethnic populations (e.g., see Bettes, Dusenbury, Kerner, James-Ortiz, & Botvin, 1990; Botvin, Epstein, Schinke, & Diaz, 1994; Botvin, Goldberg, Baker, Dusenbury, & Botvin, 1992; Dusenbury et al., 1992; Epstein, Botvin, Diaz, & Schinke, 1994). A second reason for pursuing this course is that most urban schools contain individuals from multiple racial and ethnic groups. For both logistical and political reasons, even if differences did exist across populations to warrant different interventions, it would be extremely difficult to implement separate interventions for different racial and ethnic groups in the school setting.

Although some Asians have been included in the studies conducted with the LST program, the major racial and ethnic groups involved in the most recent research studies with minority populations comprise Black and Hispanic youth. As was the case with earlier research among White middle-class youth, the initial focus of this research was on cigarette smoking, followed by a focus on other gateway substances. Research testing the generalizability of the LST prevention approach to inner-city minority youth has progressed through the following sequence: (a) exploratory and qualitative research, consisting of focus-group testing and key-informant interviews; (b) expert review of intervention methods and materials; (c) consumer-based review of intervention materials and methods; (d) small-scale pilot studies; and (e) large-scale randomized field trials. Modifications have been made as necessary throughout the process of development and testing. None of the changes deriving from the etiological literature concerning minority youth or the first three research phases outlined above involved the underlying prevention strategy. Rather, these changes related to the appropriateness of the reading level of intervention materials; the inclusion of appropriate graphics (e.g., illustrations or pictures of minority youth); and language, role-play scenarios, and examples appropriate to the target population.

Hispanic youth. In the first study testing the effectiveness of the LST approach with a minority population, Botvin, Dusenbury, Baker, James-Ortiz, and Kerner (1989) examined a sample of 471 seventh graders (46% male) attending eight public schools in the New York metropolitan area. The sample consisted predominantly of lower income Hispanic students (74%) as well as a small percentage of Black students (11%) and White (4%) students. Schools were randomly assigned to conditions. The authors found significant differences between the experimental and the control group, controlling for pretest smoking status, gender, social risk for becoming a smoker, and acculturation. They also found intervention effects for knowledge concerning the immediate consequences of smoking, smoking prevalence, the social acceptability of smoking, decision making, normative expectations concerning adult smoking, and normative expectations concerning peer smoking.

Data from a subsequent large-scale randomized trial (Botvin, Dusenbury, et al., 1992) demonstrated significant program effects when the LST program was implemented with predominately Hispanic urban minority students. This study involved 3,501 students from 47 public and parochial schools in the greater New York City area. Intervention materials were modified (on the basis of results from our pilot study and input from consultants, teachers, and students) to increase their relevance to Hispanic youth as well as to ensure a high degree of cultural sensitivity. Schools were randomly assigned to experimental and control conditions. Using school means as the unit of analysis, we found significant reductions in cigarette smoking for the adolescents who received the LST program in comparison with control participants at the end of the seventh grade. Follow-up data demonstrated the continued presence of prevention effects through the end of the tenth grade.

Black youth. Before testing the LST approach on Black youth, we once again subjected the intervention materials and methods to an extensive review to determine their cultural appropriateness for the target population. We then conducted a small-scale study with nine urban junior high schools in northern New Jersey (Botvin, Batson, et al., 1989). The pretest involved 608 seventh-grade students; of these, 221 were in the treatment group, and 387 made up the control group. The sample was 87% Black, 10% Hispanic, and 1% White; 2% were of some other ethnicity. Schools were randomly assigned to treatment and control conditions within each of the three participating communities. Students in the treatment schools received the LST program, whereas students in the control schools received the smoking education curriculum normally provided by their school. Throughout the prevention program, we collected both classroom observation data and teacher feedback. Results indicated that there were significantly fewer posttest smokers in the treatment group than in the control group, on the basis of self-reported smoking status in the past month. Significant treatment effects were also found for knowledge of smoking consequences, normative expectations regarding adult smoking prevalence, and normative expectations regarding peer smoking prevalence. A large-scale prevention trial (Botvin & Cardwell, 1992) involving predominantly Black youth from 46 inner-city schools in northern New Jersey provided additional empirical support for the effectiveness of this prevention approach with this population. We randomly assigned 46 schools to treatment (n = 21) or control conditions (n = 25). In the treatment condition, all eligible classes in participating schools received the LST intervention; in the control condition, all classes received the health (smoking) education normally provided to its students. The sample used in the final analysis included 97% minorities and 3% Whites. Of the total sample, 78% were Black, 13% were Hispanic, 1% were Native American, 1% were Asian, and 3% classified themselves as "other." Initial posttest results showed significantly less smoking for students in the treatment group, who received the intervention in the seventh grade and booster sessions in the fall of the eighth grade, in comparison with both the nonbooster treatment condition and the control condition. At the final follow-up, students who had received booster sessions and the original intervention smoked significantly less than the controls.

Tailoring interventions to the target population. In a recently completed study, Botvin, Schinke, Epstein, and Diaz (1994) tested the relative effectiveness of a broad-spectrum prevention approach (LST) previously found to be effective with White, Black, and Hispanic youth and a prevention approach specifically tailored to Black and Hispanic youth. Both prevention approaches were similar in that they taught students a combination of generic life skills and skills specific to resisting offers to use drugs. However, the tailored, or culturally focused, approach was designed to embed the skills-training material in myths and legends derived from Black and Hispanic cultures. Six junior high schools containing predominantly (95%) minority students were assigned to one of three conditions: (a) to receive the LST pro-

gram, (b) to receive the culturally focused prevention approach, or (c) to serve as an information-only control group. The sample was 48% Black, 37% Hispanic, 5% White, 3% Asian, and 8% other. Students were pretested and posttested during the seventh grade. Results indicated that students in both skills-training prevention conditions had lower intentions to drink beer or wine relative to the information-only control participants, and the students in the LST condition had lower intentions to drink hard liquor and use illicit drugs. Both skills-training conditions also affected several mediating variables in a direction consistent with nondrug use. According to these results, both prevention approaches were equally effective, producing significant reductions in behavioral intentions to drink and use illicit drugs and suggesting that a generic drug abuse prevention approach with high generalizability may be as effective as one tailored to individual ethnic populations. These data also provide support for the hypothesis that a single drug abuse prevention strategy can be used effectively with multiethnic populations.

Two-year follow-up data ($N = 456$), collected at the end of the ninth grade for participants in Botvin, Schinke, et al.'s (1994) study showed significant prevention effects for both prevention approaches (Botvin, Schinke, Epstein, Diaz, & Botvin, 1995). Students in both skills-training prevention conditions drank alcohol less often, became drunk less often, drank less alcohol per drinking occasion, and had lower intentions to use alcohol in the future relative to the control participants. However, these data also showed that the culturally focused intervention produced significantly stronger effects on these variables than did the generic LST approach. The findings of this follow-up are particularly interesting because, while suggesting that it may be possible to develop a preventive intervention that is effective for a relatively broad range of students, they show that tailoring interventions to specific populations can increase effectiveness among inner-city minority populations.

Extending the LST Model to Aggression and Violence Prevention

Studies testing interventions for decreasing peer rejection and aggression (Coie & Koeppl, 1990) and aggressive, oppositional, and conduct disorder behavior (Kazdin, 1987) have included generic skills-training components similar to those in the LST approach to drug abuse prevention, along with some additional, problem-specific material. These interventions have typically emphasized teaching social skills, problem solving, and anger management by using cognitive–behavioral techniques. Both short- and longer-term effects have been produced with respect to the skills targeted as well as to self-esteem, social status with peers, and aggression. Some of these studies (e.g., Hammond & Yung, 1991; Lochman, Coie, Underwood, & Terry, 1993) have been conducted with inner-city minority youth. This literature and literature showing relationships among multiple problem behaviors suggest that modifying the current LST model to include material specific to aggression and violence may result in a prevention approach that is effective with both drug abuse and violence. In the sections that follow, we describe a version of the LST approach to preventing drug abuse that Botvin and his colleagues at Cornell's Institute for Prevention Research are currently developing to extend to aggression and violence prevention with inner-city minority youth. The adaptation includes both a school and a parent intervention, each of which we describe below. We are testing both interventions in a 5-year investigation funded by the National Institute on Drug Abuse.

School-Based Intervention

Although much of the material in the generic skills-training components has relevance for violence prevention as well as drug abuse prevention, some additional generic skills would also need to be included to further strengthen the intervention and render it appropriate as a violence prevention approach. Likewise, additional new material specific to the problem of violence is needed to render the LST model appropriate as a combined drug abuse and violence prevention approach. A combined drug abuse–violence prevention LST model would consist of training provided in seventeen 45-min class periods, which would be augmented by in-class video material and a parent intervention consisting of take-home videos and written material.

Personal skills component. This component is designed to affect an array of personal self-management skills. The personal skills component includes material that contributes to the following goals:

1. Fostering the development of decision making and problem solving (e.g., identifying problem situations, defining goals, generating alternative solutions, and considering consequences);
2. Teaching skills for identifying, analyzing, interpreting, and resisting media influences;
3. Providing self-control skills for coping with anxiety (e.g., relaxation training) and anger and frustration (inhibiting impulsive reactions, reframing, and using self-statements); and
4. Providing the basic principles of personal behavior change and self-improvement (e.g., goal setting, self-monitoring, and self-reinforcement).

Most of this material consists of generic self-management skills important to both drug abuse and violence prevention, except for the self-control skills that deal with anger and frustration management, which is more specific to violence prevention.

Social skills component. This component is designed to affect several important social skills and enhance general social competence. The social skills component contains material designed to help students overcome shyness and improve general interpersonal skills. Emphasis is on communication skills, general social skills (e.g., initiating social interactions, conversational skills, and complimenting others), skills related to boy–girl relationships, and both verbal and nonverbal assertive skills. This component is the same as that included in the drug abuse prevention LST model.

Drug-abuse-specific component. This component is designed to affect students' knowledge and attitudes concerning drug use, normative expectations, and skills for resisting drug use influences from the media and peers. The material contained in this component is similar to that of many psychosocial drug abuse prevention programs (e.g., Evans, Hansen, & Mittlemark, 1977; Hurd et al., 1980; McAlister, Perry, & Maccoby, 1979; Pentz, Dwyer et al., 1989). It concerns short- and long-term consequences of drug use; knowledge about the actual levels of drug use among both adults and adolescents, to correct normative expectations about drug use; information about the declining social acceptability of cigarette smoking and other drug use; information and class exercises demonstrating the immediate physiological effects of cigarette smoking; information about media pressures to smoke, drink, or use drugs; knowledge of techniques used by cigarette and alcoholic beverage advertisers to promote the use of these drugs, as well as skills for resisting them; and techniques for resisting direct peer pressure to smoke, drink, or use drugs.

Violence-specific component. The violence-specific component is designed to affect knowledge and attitudes concerning violence and aggression, normative expectations, and skills for resisting pro-violence influences from media and peers. This component helps students examine information concerning violence prevalence rates; sources of violence; the appropriateness and efficacy of using aggression and violence as a way of dealing with problems or conflicts; common situations leading to violence and how to avoid them; identifying hostile misattributions and distorted perceptions, and how to modify them; strategies for "saving face," maintaining status, and resolving conflict situations; and skills for identifying and resisting pro-violence influences from media and peers.

Parent Intervention

Notwithstanding the evidence supporting the effectiveness of school-based approaches to drug abuse prevention and their promise for preventing violence, considerable research has pointed to the need for interventions that target the family (e.g., Brook, Brook, Gordon, Whiteman, & Cohen, 1990). Kazdin (1993) and others have argued for the inclusion of family intervention components in prevention efforts targeting mental health. In a recent review, Kumpfer and Alvarado (1995) summarized the research conducted with family interventions targeting delinquency and drug abuse and highlighted the potential of including skills-based family intervention components in drug abuse and violence prevention programs.

A considerable literature exists that supports the potential of interventions targeting the family or parents for preventing drug abuse and violence in children (e.g., Kumpfer & Alvarado, 1995). Important focuses of family and parent interventions include parental monitoring and discipline, communication skills, drug abuse and violence prevention skills, and knowledge. For maximal effectiveness, parent interventions should be designed to complement and reinforce interventions being conducted in school settings. Because it may be difficult to involve more than a few parents in formal interventions (i.e., as this would require meetings), parent interventions should be easy to use, interesting, capable of being standardized, use a delivery channel that is widely available, and capitalize on the power of television.

Parent videotape. The parent videotape we used was designed to encourage parental monitoring and supervision of children, establishment of antidrug and antiviolence messages, effective communication, being a good (nonviolent and non-drug-using) role model, and practicing drug abuse and violence prevention skills with children. To promote synergy between the school and parent interventions, we included an introduction to the school-based prevention program for parents and a demonstration of the skills their children were learning in school.

Written materials. Another important part of a parent intervention is to supply a written manual for parents that provides information on both the causes and the consequences of drug use and violence, as well as on early warning signs for drug involvement and aggressive or violent behavior. We include the parents' manual to reinforce and more fully explain the skills covered in the videotape. Newsletters can also be distributed to parents to provide current information on drug abuse and violence prevention as well as information on their children's school-based intervention. Although the primary purpose of the written material is to convey information, a secondary purpose is to increase awareness of the problems of drug abuse and violence and to increase participation and support for the school-based intervention.

Homework assignments. Program leaders can also give students participating in the school-based intervention handouts and homework assignments that are designed to be completed with the parent or caregiver. Topics may include establishing family rules; goal setting, decision making, and problem solving; and practicing drug and violence prevention skills.

Parent workshops. Parents or caregivers of students involved in the drug abuse and violence prevention program can also be invited to attend a workshop. The workshop should be conducted on multiple occasions to increase the opportunity for all adults to attend. To increase the potential for parental involvement, program administrators should schedule these workshops at times that are convenient for parents (generally, early mornings, evenings, and weekends). The workshop agenda should consist of a videotape screening, a presentation on the causes and consequences of drug use and violence, and demonstrations and discussions of techniques that parents can use to help protect their children from drugs and violence. Workshop recruitment can be done through homework activities, mailed invitations, and parent–teacher conferences.

Conclusions and Implications for Practitioners

Drug abuse and violence are two of the most important public health problems facing the United States. After nearly a decade of decline, drug use among adolescents is once again on the increase. Violence has assumed new proportions as guns have proliferated and the lethality of violence among youth has increased dramatically. New urgency now exists for developing more innovative and effective solutions to two old problems.

Examination of the etiologies of drug abuse and aggression and violence has suggested considerable overlap in terms of risk factors and developmental mechanisms. Moreover, theoretical formulations and empirical work in several allied areas suggest a common problem behavior syndrome or general deviance syndrome. The implication for prevention practitioners is that theoretically and empirically related problems such as drug abuse and violence may be similar enough to be prevented by using the same intervention techniques.

Our own research with the LST prevention approach has demonstrated that such training can consistently produce substantial reductions in adolescent drug use. Longitudinal research has shown that preventive gains obtained with this approach can be maintained with booster sessions in subsequent years. Over a 15-year period, studies involving nearly 6,000 students from 56 schools have shown that the LST approach can reduce tobacco, alcohol, and marijuana use among adolescents. Preventive effects have also been found with respect to more severe levels of drug involvement, such as heavy cigarette smoking, immoderate drinking, and the use of multiple substances and illicit drugs. Overall, research with LST demonstrates the importance of using (a) an intervention model grounded in theory and empirical research concerning the etiology of drug abuse, (b) proven skills-training techniques, (c) an adequate intervention dosage, (d) a multiyear intervention that includes booster sessions, and (e) quality control to ensure adequate implementation fidelity.

Extending the LST model to include material related specifically to the problem of aggression and violence offers one potentially effective

approach to drug abuse and violence prevention. On the basis of an understanding of the etiological factors and developmental mechanisms of drug abuse and violence, we recognized that modifications to the current LST drug abuse prevention model were necessary. These modifications included adding self-management skills for dealing with anger and frustration and including domain-specific material concerning violence-related knowledge and attitudes, norms, and skills for resisting media and peer influences that promote aggression and violence. Beyond the components of a school-based preventive intervention, we suggest that practitioners include a parent intervention that incorporates videotape, written materials, homework assignments, and training workshops. Although not yet subjected to empirical testing with respect to aggression and violence, this combined school and parent approach to drug abuse and violence prevention would appear to offer considerable promise. Future research should be undertaken to test the effect of this prevention approach on aggression and violence, drug use, and risk factors associated with both types of behavior.

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Chapter

4

Health Promotion in Minority Adolescents: Emphasis on Sexually Transmitted Diseases and the Human Immunodeficiency Virus

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Nicque, a 15-year-old Hispanic female, saw a physician at the teaching hospital because she had abdominal pain and some cloudy discharge from her vagina. She told the physician that she had experienced these symptoms for a couple of weeks but thought that they would resolve after a few days. The physician questioned her about her sexual history, and she informed the doctor that she had had sex "a few times" in the past, but quickly added that she had been dating the same boy for almost 6 months. Diagnostic testing revealed that Nicque had endocervical gonorrhea, and it was apparent that the condition had gone untreated for some time. Nicque was surprised to learn that she also had pelvic inflammatory disease, which