This article examines the social-historical lineages of adolescent alcohol and other drug (AOD) use prevention programs. It shows how risk factor research evolved from assumptions of deviance regarding the mentally ill and examines patterns in prevention research that have inhibited advancement in the field. These patterns take shape as a general assumption of the target population as deviant, over- or misinterpretation of research results, and evidence that researchers and program managers or administrators shift or initiate programs with no causative basis. For the field to move ahead, researchers, program specialists, and policymakers must reconsider these patterns in light of protective factor and harm reduction approaches.

DEVIANCE AND DEVIANTS

Why Adolescent Substance Use Prevention Programs Do Not Work

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Research literature on youth alcohol and other drug (AOD) use and abuse is considered flawed by a number of researchers (Austin 1988; Bangert-Drowns 1988; Battjes and Jones 1985; Botvin and Wills 1985; Bukoski 1985; Flay 1985; Goodstadt 1986; Howard 1988; Kinder, Pape, and Walfish 1980; Moskowitz 1989: Schaps et al. 1981). This article takes a social-historical approach in examining researchers' and program managers'/administrators' assumptions on the effectiveness of adolescent AOD research and programming. We draw from examples of some of the most influential research in the substance abuse field.

When researchers critically examined the underlying assur ,ptions of their own and others' work, they tend to move a field of research forward. Those who have failed to do so generally produce research that serves to maintain long-held (and often unsupported) assumptions. An examination of the assumptions present in a body of research and social programming can reveal

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the complex relationship between the demands placed on the researcher, the desire to locate truth, and the desire to fill gaps in knowledge and/or outcomes. Reviewing adolescent AOD research and programming within this context might provide us with important insights into the reasons behind the successes and failures in the AOD field over the past three decades.

Why now? In fact, this examination is long overdue. In the *Report to Congress on the Nature and Effectiveness of Federal, State, and Local Drug Prevention/Education Programs*, Klitzner (1987) presented a litany of problems in prevention programming and evaluation. In 1988, Austin noted that many programs continue with little success. Moore and Saunders, in 1991, stated, "Education programmes aimed at the prevention of youth drug abuse (and many of these programmes seek the unrealistic aim of preventing all use) have been characterized by only limited degrees of success" (p. 31). Despite years of criticism, millions of dollars continue to be poured into prevention efforts.

What factors inherent in the system of funding, implementing, and evaluating these efforts support this continued funding in the face of contrary evidence, if in fact this evidence is contrary? The answers to these questions can be found in the social-historical lineage of the field of AOD prevention for youth. Placed within a social-historical context, we maintain that, since the early days of the medical domination of community mental health, the view of adolescents as individuals in need of help has remained essentially unchanged. Researchers and/or programmers shift or initiate programs with little or no causative basis and with little or no change in the assumptions on which their work is based. We conclude that effective prevention of AOD abuse among adolescents depends on an awareness and proper understanding of adolescent patterns of substance experimentation protective factor research, and the use of harm reduction models.

We reached these conclusions through the following research methods. An extensive literature review was conducted in which we examined the field of AOD prevention programs for youth and related fields including community mental health, epidemiology, adolescent psychology, juvenile justice, education, and public health. The focus of this review was to assess (1) the assumptions guiding the research, and (2) the relationship between the findings presented and the conclusions drawn. Implicit assumptions were revealed using discourse analysis in which we examined stylistic, semantic and syntactic patterns. The explicit philosophical basis of the research, as stated by the authors, also was included.

In conducting this review, as we moved closer to the central issue of evaluating the effectiveness of AOD prevention for youth, we found that a

small number of articles informed an ever-broadening number of researchers and programmers. These works are considered important because they repeatedly were cited throughout the literature as the basis of AOD prevention studies and program development. They became the focus of our understanding of the social-historical patterns and assumptions revealed in the research. Because these few articles have had a widespread influence on the central issues of this review, we present them in detail.

In the first section, we show how research and programming in the field of community mental health provided a social and historical context for the assumptions and interpretations found in research and programming for adolescent AOD prevention. Next, we present a historical review of AOD prevention programs for youth, including the role of risk factor research, protective factor research, school-based programs, and community interventions. We close with alternatives to the current approaches to dealing with AOD prevention for youth.

THE COMMUNITY MENTAL HEALTH MOVEMENT: PRECURSOR TO ADOLESCENT AOD PREVENTION

In this section we show how community mental health programs are historically connected with AOD prevention programs and provide a parallel model for the difficulties encountered by researchers working in the prevention field. Specifically, from the early period of the community mental health movement we found (1) the assumption of a deviant target population by researchers and program developers (the basis of the medical model), and (2) programmatic shifts based on what is perceived to be a better state of affairs with little empirical evidence. For the investment, the medical-model approach in community mental health has returned poor results. By numerous accounts, the field of community mental health is likened to that of a field that is "dormant" (Shore 1992, 261).

In 1963, President Kennedy approved the Community Mental Health Centers (CMHC) Act as a result of a 1961 report of the Joint Commission on Mental Illness and Health. This act provided community-level services for people experiencing "an episode of illness" (Goldman and Morrissey 1985, 728).

The fundamental approach of the majority of community mental health institutions, including the CMHCs, was based on a medical model (Rappaport 1974). Client services were provided on the premise that the mentally ill were diseased individuals (Scheff 1966). Practitioners viewed individuals as in need of medical treatment for the mental illness symptoms

they manifested. Extreme aspects of treatment included procedures such as lobotomies and addictive drug therapies (Crane 1973; Hartlage, 1965; Lennard, Epstein, and Katzung 1967). Later, researchers questioned the appropriateness of treating the majority of those termed mentally ill with such therapies (Crane, 1973; Eisenberg 1973; Greenblatt and Shader 1971; Lennard, Epstein, and Katzung 1967; Rappaport 1974; Snyder et al. 1974; Szasz 1970). Friedson (1970), focusing on the possible inappropriate use of the medical model for this system, believed that the administrators of early CMHC programs (primarily physicians) were at the root of many mental health care problems: "Professional dominance is the analytic key to the present inadequacy" (p. xi).

A significant shortcoming of the movement was a scarcity of quality evaluative research, a problem that continues to plague the field. The few community mental health evaluation studies that do exist describe more about those community interventions that do not work rather than those that do (President's Commission on Mental Health 1978). In 1969, Kahn wrote that in the early years of the CMHCs, "data about effectiveness, efficiency, and innovation were missed" (p. 40). This simple statement identifies an issue that, in several forms, presages the methodological flaws that persist in prevention research. We found the evaluative research absent or inconclusive, at best.

The 1970s were a period of confusion and overhaul for the community mental health system. A host of difficulties experienced by clients and frontline staff in CMHCs led to a programmatic shift. It was recognized that the mentally ill might experience a range of psychosocial difficulties that directly affect their lives, as well as the lives of other community members. Was mental illness an outgrowth or a cause, for example, of poverty or homelessness (Kiesler 1981; Kiesler 1982)? This signaled a shift away from a disconnected view of intrapersonal, psychosocial difficulties toward a more integrated and comprehensive view of the mentally ill within an environmental context.

Although these programs were better integrated and directed than earlier versions of CMHC programs, there is an absence of evidence to support taking this new direction. We uncovered little more than speculative evidence recommending change of direction. Adler, at the time, argued for a macrological view of the individual as part of a community system (Adler and Raphael 1983). His works signal the beginning of the convergence of community-level intervention and a modern, pro forma examination of the role of the individual as part of his or her environment. Important works by Kiesler and colleagues (Kiesler 1981; Kiesler 1982: Kiesler and Sibulkin

1982) examined the policy implications of community prevention specifically designed for a well-defined and well-targeted mentally ill population.

Although program changes appear to have radically shifted, in actuality there was no change in the basic assumptions underlying the field. Community mental health programs still suffer from poor or nonexistent evaluation, a lack of sustainable effects, and the inappropriate assumptions of the medical model. Although it is essential to conduct research and discuss its results, we maintain that the critics' preoccupation with the research issues detracts from discussion of the possibility that it is the unchanging assumptions guiding the research that are responsible for the difficulties in the field.

This change from the view of the individual to the view of the individual placed within his or her environment does not represent a significant shift in the field. Programmatic change may be institutionalized, but progress is limited by the unchanging assumption that researchers and programmers hold of a deviant target population. Such associations are termed the *deviance assumption.*

ADOLESCENT AOD PREVENTION

Arising from the medical dominance of mental health, one begins to see the emergence of a set of assumptions regarding the deviance of the target population in the field of AOD prevention. Table 1 depicts a side-by-side comparison of assumptions found in the community mental health field and adolescent AOD prevention programming.

In reality all adolescents possess, to some extent, some or many of the risk characteristics associated with AOD use. Therefore, it can be argued that all adolescents are at risk for becoming drug-abusing deviants. Although many could argue that this an overly simplistic representation of an entire field of work, detailed review illustrates how these assumptions are embedded within the research itself. We begin with a brief examination of adolescent patterns of AOD use.

In the 1970s, mental health professionals and epidemiologists helped to define AOD issues unique to adolescents and their developmental periods of growth with a body of rigorously conducted research (Jessor and Jessor 1977; Kandel 1974, 1989, 1990a, 1990b; Kandel and Andrews, 1987; Kandel and Davies 1991; Kandel and Faust 1975; Kandel, Kessler, and Margulies 1978; Kandel, Raveis, and Kandel 1984; Kandel and Raveis 1989; Kandel, Simcha-Fagan, and Davies 1986; Kandel et al. 1986). This research went a long way toward describing the prevalence and patterns of adolescent AOD use, as well

TABLE 1: Assumptions of Deviance of the Target Population

AOD[a] Prevention for Youth	*Community Mental Health*
The goal is to prevent adolescent AOD use	The goal is to prevent mental illness
To prevent use, researchers and programmers must first understand the patterns of use	To prevent mental illness, researchers and programmers must first understand its etiology
Based on this information, certain types of adolescents are found to be more likely than others to use AODs	Based on this information, certain individuals are found to be at greater risk for mental illness than others
Associated with predictors of use are two key interpretations: (1) that through usage patterns and associated characteristics such as delinquency, users are socially deviant and (2) that any use equals abuse	Resulting from the dominance of the medical model, the mentally ill individual is defined as diseased, and is therefore deviant
Therefore, unless a prevention or intervention takes place, adolescents who possess such associated characteristics will become drug-abusing deviants, thereby harming themselves or others	Therefore, unless identified and treated, the mentally ill will harm themselves or others

a. AOD = alcohol and other drug.

as contributing factors (e.g., extent of peer influence) and various consequences of prolonged use (e.g., associated health risks).

The results of defining adolescent AOD prevalence and use patterns are strikingly similar to the formative assumptions taken in community mental health. Korchin (1977), for example, reiterated what was stated earlier—that the early community mental health movement, "on the whole . . . kept mental health services anchored in medical institutions" (p. 488). We have described the association of disease and deviance with the individual in need of services in this article.

In her seminal AOD study, *Interpersonal Influences on Adolescent Drug Use*, Kandel (1974) concludes that

> these findings on the relative influence of parents and peers on drug use fit a "cultural deviance" model of behavior, and in particular, the theory of differential association developed by Sutherland to explain deviant behavior. . . . The crucial factor in the learning of delinquent roles by adolescents may be the availability of delinquent role models in the adolescent peer group. (P. 236)

The results of this study might indeed be well-founded. However, in this case the interpretation of these results led to a transference of the deviance

assumption from community mental health to AOD prevention. In the next section we discuss how the deviance assumption, that is, the view of certain kinds of adolescent behavior as culturally maladaptive, became the dominant basis for AOD prevention research and programming.

THE RISK FACTOR MYTHOLOGY

Here, by tracing the historical lineage of the deviance assumption, risk factor research as it applies to AOD prevention and education is examined. We have found ourselves in agreement with Bell (1988) who concludes that, "although drug researchers have intimated that correlates of drug use are related to risk, the concept has seldom been well defined" (p. 137). Three points are made. First, risk factors, per se, are unclear and inconclusive as to what they actually predict. Second, the concept of a risk factor is mistakenly described by researchers and program developers through maladaptive correlates of risk factors, such as delinquency. We call the sum of these correlation-based assumptions the *risk factor mythology*. Finally, the reader will see how the argument of the risk factor mythology is shaped so that, to some extent, all adolescents may be considered to be "at risk" for drug use.

Historically, the risk label was originally defined by epidemiologists as "those persons who are capable of having or contracting a disease" (Macmahon, Pugh, and Ipsen 1960, 229). As Baizerman and Compton (1992) state:

> To use the concept of risk scientifically, there must be empirical research showing relationships among factors. Risk is related to action—to lowering (or raising) a population's susceptibility to a particular disease. Education took the term risk and the possibilities inherent in prevention and control and used these to discuss students, policies, and programs. (P. 7)

In this section these ideas are explored with the intent of answering the following two questions. How well has the scientific term *risk factor* been applied to drug prevention and education? How, in turn, have those working in these fields used the definition of risk factors as a mechanism for discussion of students, policies, and programs?

Researchers have argued that there is an adolescent subpopulation more susceptible than the normative adolescent to engage in AOD use and become chronic AOD users (Hawkins, Lishner, Jenson, and Catalano 1987). Researchers define high-risk youth by one or more factors that seem to predispose them to AOD use. According to this body of literature, adolescents are more likely to use AODs if (1) they come from families where their parents

use AOD, (2) they experience early behavioral problems, (3) they experience poor and inconsistent family management patterns, (4) they experience strong family conflict, (5) they have family social deprivation, (6) they experience school failure, (7) they have a low degree of commitment to education and poor school attachment, or (8) they have a disorganized community and poor neighborhood attachment.

A gap exists in the research between the early works in this field from the 1970s to the mid-1980s. No research was found describing the frequency, intensity, duration, or mix of risk factors necessary to accurately predict the advent of adolescent AOD use. Several studies have found that the possession of a number of risk factors might predict adolescent AOD use (Bry, Mckeon, and Pandina 1982; Newcomb and Bentler 1988). It is postulated that if the field were to continue to develop, the link between risk factors and AOD use would need to be solidified.

Two statements from a 1987 article by Hawkins and colleagues seem to fill the void in defining the concept of adolescent risk factors. AOD prevention programmers interpreted these statements, defining risk factors through the associated factors of delinquency and AOD use, as a conceptual hook on which to hang their efforts. Both statements make a connection between adolescent delinquency and AOD use and abuse. (Although they appear in different portions of the article, we state them consecutively.)

> The evidence is clear and consistent. Frequent use and abuse of drugs are more common among youths who engage in chronic delinquent behavior than among other adolescents. . . . Moreover, recent studies have revealed common factors in the etiology of adolescent drug abuse and delinquency. (Hawkins et al. 1987, 81)

> This evidence suggests that greater attention should be given to prevention approaches addressing multiple common risk factors for delinquency and drug abuse and to coordination of services targeting youths exhibiting serious antisocial behaviors. The strong correlation between chronic serious delinquency and drug abuse should be translated into prevention and treatment interventions. (Hawkins et al. 1987, 100)

Hawkins et al.'s (1987) extremely comprehensive review of relevant literature might appropriately link adolescent AOD use with delinquency. Yet look again at Kandel's (1974) earlier conclusion:

> These findings of the relative influences of parents and peers on drug use fit a "cultural deviance" model of behavior, and, in particular, the theory of differential association developed by Sutherland to explain deviant behavior. . . . The crucial factor in the learning of delinquent roles by adolescents may be the availability of delinquent role models in the adolescent peer group. (P. 236)

At first, taken individually, the similar conclusions reached in these two landmark studies appear to move the field toward new and important research. However, when viewed together, the conclusions reached by these researchers merely reinforce a medically derived deviance assumption regarding the target population, adolescents.

The deviance assumption here mistakenly defines the concept of risk factors through a reliance on psychosocially maladaptive correlates such as drug use and delinquency. These correlations may indeed exist. However, the discussion and the interpretation of these results all but reinforce a cause-and-effect perception between risk factors and drug use. McIntyre, White, and Yoast (1989) articulate some problems with this view:

> There has been an overwhelming bias in the substance abuse field in favor of considering what Benard referred to as "disease, illness, pathology, maladaption, and and incompetence. . . . The preference for pathology to which the risk paradigm is especially susceptible poses significant problems. A heavy focus on disorder, inability, and failure misrepresents the full range of factors, forces, and experiences, which may ultimately produce the outcomes, which research seeks to understand. In so doing, it skews the scientific, professional, and popular perceptions of what is actually occurring in people's lives. It also potentially limits the chance of success of programs built on risk research which aim to intervene and assist. (Pp. 3-4)

Although associations between risk factors and deviance might exist in nature, there is an important question to consider. What is the social value of almost two decades of research based on the predictive demands of the scientific method, without establishing a clearly defined cause-and-effect relationship between risk factors and future difficulties such as adolescent AOD use? Because Hawkins et al.'s 1987 article filled the described research void, most in the field have been held captive to reinforcing the risk factor mythology.

This myth has filtered down to the most basic of social/organizational levels, nowhere more evident than in our public educational system. The risk factor mythology is so pervasive that many scholastic AOD prevention program applications require potential funding recipients to specifically address risk factors. For example, in the past several years the California Department of Education (CDE) has provided moneys for the Drug, Alcohol, and Tobacco Education (DATE) program. These statewide moneys are known as some of the largest sums available for prevention and intervention in the United States. The DATE application for funds, *Philosophy and Purpose of DATE Application*, states:

> The application also emphasizes the importance of reducing risk factors for drug, alcohol, and tobacco use and other problem behaviors of youth. Extensive research on risk factors

> offers a clear direction for prevention programs. If programs can reduce risks and increase protective factors, young people are less likely to experience problems with drugs, alcohol, and tobacco later in life. (California Department of Education, viii)

The application proceeds to identify 36 risk factors, which the department considers to be indicators of youth at risk or high risk. To procure DATE funds, applicants must show how they specifically plan to serve these students. From this, and many other prevention program applications examined, the desired orientation of the applicants is clearly directed toward the identification of at-risk youth. In this sense then, programmers, researchers, and policymakers alike have not only created, but also demand, an orientation toward the maladaptive linkages made in the risk factor mythology.

A MAJORITY OF ADOLESCENTS AT RISK

Given the obvious difficulty of identifying at-risk adolescents based on unpredictable criteria, how might this apparently necessary process of identification of at-risk adolescents be accomplished? Baizerman and Compton (1992) support what we have found in both research and practice. This goal is accomplished through the identification of a majority of adolescents as at-risk. In describing the social-historical construct of risk factors from medicine (particularly epidemiology) to education, Baizerman and Compton (1992) write:

> The technical term at risk has a new home in education, where it has come to have several meanings, not all of them technical in the sense of this term's use in public health. In Texas, students are identified as being at risk on the basis of such state academic criteria as test scores, retention in a grade, or status of being two or more years below grade level. School districts can identify additional students on the basis of such psychosocial variables as pregnancy or substance abuse. In many schools, this process results in the majority of students being identified as at risk. This is hardly surprising, since the educational use of the term "at risk" does not meet the test of the public health definition—that is, it is not known whether the characteristics used for identification actually predict which students are most likely to drop out of school . . . . the whole field of education used the concept of risk as part of an ideology, thereby joining science, mathematics, and morality. The major use of this ideology is to construct a socioeducational population of at-risk students and suggest that they are both the problem and its cause. The school is absolved and can be expected only to "do its best with limited resources." Whole schools and even districts are not thought of as being at risk; the problem and its sources are the students. (Pp. 8-9)

The importance of these statements should not be underestimated. From our examination of the research literature and adolescent AOD programming,

two points become clear. First, Baizerman and Compton's [reconstruction of the at-risk concept from medicine to education applies not only to Texas, but to the nation as well. Second, in a sense much broader than Baizerman and Compton perceive, their construct supports our conception of the risk factor mythology. We have found that the educational use of the term *at risk* not only does not predict which students are most likely to drop out, the characteristics used for identification predict little if anything, including future adolescent AOD use.

Our previously noted example, the California application for DATE fund (California Department of Education 1992), identifies at-risk youth based on a number of risk factors. Stated risk factors include

> Family risk factors: lack of clear expectations for behavior; lack of monitoring; inconsistent or excessively severe discipline; lack of caring; parental drug, alcohol, and tobacco use; positive parental attitudes toward use; low expectation for children's success; family history of alcoholism
>
> School risk factors: lack of clear policy regarding drugs, alcohol, and tobacco; availability of drugs, alcohol, and tobacco; school transitions; academic failure; lack of student involvement; little commitment to school.
>
> Community risk factors: economic and social deprivation; low neighborhood attachment and community disorganization; community norms and laws favorable to drugs, alcohol, and tobacco use; availability of drugs, alcohol, and tobacco.
>
> Individual/peer risk factors: early antisocial behavior; alienation and rebelliousness; antisocial behavior in late childhood and early adolescence; favorable attitudes toward drugs, alcohol, and tobacco use; greater influence by and reliance on peers rather than parents; friends who use drugs, alcohol, and tobacco, or sanction use; early first use.
>
> High risk factors: (for the purposes of these guidelines, the federal definition of high risk will be used) any student who is at high risk of becoming or who has become a drug abuser or an alcohol abuser and is a child who has one or more of the following characteristics: is identified as a child of a substance abuser; is a victim of physical, sexual, or psychological abuse; has dropped out of school; has become pregnant; is economically disadvantaged; has committed a violent or delinquent act; has experienced mental health problems; has attempted suicide; has experienced long-term physical pain due to injury; has experienced chronic failure in school; has been placed on probation, formal or informal, or has served time in a juvenile detention facility. (California Department of Education 1992, viii-ix)

At what time in his or her life has any adolescent not experienced at least one of these factors? Risk factors are so broadly defined in the DATE application that any California student under almost any circumstance could be classified as at risk for AOD use.

Like McIntyre, White, and Yoast (1989), Baizerman and Compton's reconstruction of risk factors provides an interesting example of one form of scientific practice. In this case, it is a fundamental shift toward understanding

the social construct of at risk and the demands made by those who share this ideology. These researchers illustrate how this ideology represents a fundamentally maladaptive view of what is often normal adolescent development.

These researchers do not simply criticize the work in the field. They offer insight into the social processes by which the risk factor mythology is adapted and explore the consequences of these processes. It is clear that the broad social definition of risk factors and the identification of at-risk youth have done little to improve the AOD prevention field or education. In fact, as McIntyre et al. describe, a strong case can be made that the social application of the risk factor mythology leads to a host of negative implications for youth.

In summary, the difficulties in risk factor research have led to the following pattern in AOD prevention research and programming for youth. It is unclear what the concept of risk factors really represents and if, in fact, the possession of risk factors in any combination can predict adolescent AOD use. In spite of the lack of empirical evidence, prevention professionals cling tenaciously to the risk factor mythology for serving at-risk youth and developing prevention programs.

Consequently, AOD prevention professionals are unable to move beyond their belief in the salience of the identification of a majority of youth perceived as being at risk for becoming substance abusers. This pattern parallels what we found in the community mental health movement: a narrowly focused research and programming agenda, based on an unproved yet unchanging deviance assumption regarding the target population.

THE DEVIANCE ASSUMPTION GOES TO SCHOOL

In the 1970s researchers and programmers began implementing school-based drug education programs for youth (hereafter, referred to as school-based programs). This section depicts the transfer of the target population deviance assumption to students. It is described through a close examination of another landmark study, Tobler's 1986 meta-analysis of school-based drug education programs. In Tobler's study and throughout the school-based drug education literature, and in addition to the risk factor mythology, adolescent AOD use is perceived as the equivalent of AOD abuse.

With the exception of Schaps et al.'s earlier work (1981), no comprehensive comparative studies across various prevention modalities had been conducted. Tobler's (1986) study filled this research gap. As late as 1991, in a U.S. General Accounting Office (GAO) report on drug abuse prevention, it was stated that Tobler's meta-analyses were "particularly helpful in trying to identify . . . promising . . . AOD treatment approaches" (p. 50).

Based on a literature review of 240 potentially relevant studies, Tobler identified and reconstructed 143 experimental or quasi-experimental studies to be used in her meta-analysis. She identified and tested five types of programs to which adolescents have been exposed. These programs represented the spectrum of available treatment approaches. In various combinations, programs included student knowledge-only programs, peer programs (refusal and social/life skills), affective-only programs, and alternative activity programs.

She compared the value of these various treatment modalities with experimental design and self-reported student outcomes. In reducing adolescent AOD use patterns, some very interesting results were discussed:

> For Knowledge Only and Affective Only programs solid evidence exists for discontinuing their use. Multimodal programs show definite superiority over single modalities, although the combination of Knowledge Plus Affective modalities still fell well below the grand mean (effect size) for all programs. . . . This meta-analysis has identified two modalities that are effective. Peer Programs produced the only results which showed change toward the ultimate aim of reducing drug-abusing behaviors. (Tobler 1986, 559-61)

Throughout the drug prevention literature there exists the constant assumption that those who use any AODs constitute the moral equivalent of those who abuse AODs. One of the required features for inclusion in the Tobler meta-analysis was "primary prevention as the goal (defined by Bukowski [1981] as activities which assist youth in developing mature, positive attitudes, values, behaviors, skills, and lifestyles so that they do not need to resort to the use of drugs)" (p. 543). Self-reported drug use is delineated as the criterion for inclusion in the study. However, when it comes time to draw conclusions from the data, the phrase drug abuse is substituted for drug use. For example: "Peer Programs produced the only results which showed change toward the ultimate aim of reducing drug-abusing behaviors" (Tobler 1986, 561).

Here, the findings are not as important as the textual association. Although the criterion for inclusion in the study is represented through drug use, Tobler substitutes the words *drug abusing* to mean drug using. Regardless of intent, throughout the literature in the field of AOD prevention for youth, this linguistic substitution is found. By textually substituting drug abuse for drug use, a deviance assumption about students in schools is found.

If doubts remain about the existence of an implicit target population deviance assumption, the reader should look further at the conclusions reached by Tobler. Once again, in the quoted sentence the reader should pay

attention not to the conclusion, but rather to the implicit assumption. When discussing programs for "high-risk students," Tobler (1986) reaches this conclusion: "These programs were very intensive and involved costly programming, but they did change the behavior of a nearly implacable population" (p. 561).

"A nearly implacable population" denotes what we have seen as being the focus of risk factor research, an association of deviance with those identified as at risk. The school-based literature is dominated by this deviant view of the target population. Historically, the deviance assumption is now seen as being adequately transferred into the school-based drug education literature. No effort has been made to establish the concept of limits. In the minds of many, there are only two choices: abstention or abuse.

In previous sections, by using the risk factor mythology and the associated deviance assumptions, we described a focus of AOD prevention programs for youth based on the concept of the individual in need of help. In community mental health we noted a pattern of shifting program focus from the individual, per se, to the individual in the context of the environment. This shift accommodated a lack of sustained effects without requiring a change in assumptions. Almost by necessity, a similar pattern has emerged in AOD prevention. That is, an expansion of prevention and research that goes beyond the individual to include the environment in which youth lives: the community. At the same time, the reader will note no change in the underlying deviance assumptions.

In the following section, we closely examine the work of Pentz and her colleagues that we found to be the most cited of comprehensive adolescent AOD community prevention programs.

COMMUNITY INTERVENTIONS: PREVENTION REDUX

To date, Pentz and her colleagues' work in Project STAR and the Midwestern Prevention Project (MPP) stands as the first and most visible program that involves implementation and evaluation of a comprehensive community-based AOD prevention program for adolescents. This body of work is the closest to a model AOD prevention program for youth that we could find in the literature (Johnson, Hansen, and Pentz 1985; Johnson et al. 1990; MacKinnon, Weber, and Pentz 1989; Pentz 1983, 1985, 1986; Pentz, Alexander, et al. 1989; Pentz, Brannon, et al. 1989; Pentz, Dwyer, et al. 1989; Pentz et al. 1990).

The goal of these programs is to reduce the use and prevalence rates of gateway drugs: marijuana, tobacco, and alcohol. Briefly summarized, in the

authors' words, this is a multimethod approach in which implementers try to successfully do the following:

> Schools: Each year, students entering middle or junior high school for first time receive instruction on how to recognize and respond to social pressures and resist AOD involvement.
>
> Parents: Through homework assignments, parents are encouraged to establish family rules concerning substance use, discuss the consequences of use, and share their reasons for not wanting their child to become involved with AODs. Parents also are trained to implement prevention activities in and around all schools and to enhance their communication and rule-setting skills with their children.
>
> Mass Media: Press materials are developed and distributed to increase general community awareness of and interest in participation in the program. Video contests, commercials, talk shows, and news shows also are used to illustrate prevention skills and reinforce participants in the program.
>
> Community: Community leaders identify additional areas of need for prevention programming and focus their energy on encouraging schools, law enforcement, and other agencies to support healthy and rewarding activities for young people.
>
> Policy: As attitudes change, policies are made to support these changes; for example, implementing laws prohibiting smoking in public places and sales of alcohol to minors. (U.S. Department of Health and Human Services [DHHS] 1990, 4)

Project STAR has been operating since 1984. To date, several significant and often-cited articles have been published (Johnson, Hansen, and Pentz 1985; Johnson et al. 1990; Pentz 1983, 1985, 1986; Pentz, Alexander, et al. 1989; Pentz et al. 1986; Pentz et al. 1990). This body of research continues the two trends noted throughout this social-historical review: the overinterpretation of results and the maintenance of the deviance assumption.

Although the conclusions drawn by the authors in the most recent empirically based article are extremely positive, they are not supported by the actual results. In this 1990 article two levels of implementation were compared with a control group. Of 12 reported measurements of self-reported drug use across level of implementation there was a decrease in prevalence in only one category: cigarettes used in the previous month. In every other measure only a reduction of the rate of increase in use was reported. Furthermore, at the end of the study period, with one exception, the effect between a high-implementation program and a control group amounted to less than a 10% difference in rates of use. Pentz et al. (1990) drew the following conclusion:

> Results of this study indicated that quality of prevention program implementation, as measured by amount of implementation or program exposure, has a significant effect on changing adolescent drug use behavior. The findings also indicate that a high level of

> implementation can produce actual declines in drug use prevalence rates, or prevent increases. (Pp. 280-81)

In a press release issued by the U.S. Department of Health and Human Services (DHHS) dated June 1, 1990, it was noted that

> "after four years of evaluation, the findings clearly show that students who were in the comprehensive prevention program were significantly less likely to be drinking alcohol and smoking cigarettes and marijuana than their peers not in the program," explained Dr. Frederick K. Goodwin, administrator of the Alcohol, Drug Abuse, and Mental Health Administration. (P. 1)

Pentz further commented, "This study clearly demonstrates that a comprehensive prevention program can work in reducing not only use of cigarettes and alcohol, but also the use of illicit drugs as well" (DHHS 1990, 3).

The interpretation of results moves from the, "[indication] that a high level of implementation can produce actual declines in drug use prevalence rates, or prevent increases" to "this study clearly demonstrates that a comprehensive prevention program can work in reducing not only use of cigarettes and alcohol, but also the use of illicit drugs as well." We see that a change in the phrasing of a conclusion has a profound and fundamental effect on the implications for programmatic efforts. That is, from the press release it would appear that AOD prevention should shift toward comprehensive community prevention programs. However, in the data-based article the results are presented as less than conclusive and it is less apparent that a programmatic and research shift to the adolescent in the context of the community is appropriate.

Evidence of the deviance assumption is present in another 1990 article in which Pentz and her colleagues examine the effectiveness of the Project STAR over a three-year period. In this article comparisons are made between high- and low-risk adolescents. In this case the now familiar use-equals-abuse scenario is represented in this concluding statement reached by the authors:

> What is considered to be abusive is arguable. We maintain that any level of cigarette smoking especially in youth is abusive because amount of exposure to tobacco especially in youth is related linearly to heart disease and lung cancer. Perhaps the same cannot be said of alcohol and marijuana use, but it is likely that the probability of accidents and drug-related problems also increases monotonically with level of use. (Johnson et al. 1990, 454)

This represents a final example of a shift in program efforts with no change in the assumptions that accompany this shift. AOD prevention efforts shifted

from a focus solely on the individual to one that deals with the individual in the context of the community. This shift was effected without relinquishing the assumption of deviance, associations of use with abuse, nor the risk factor mythology. These practices are representative of the current state of the field of AOD prevention for youth.

We have seen that the views and practices found in the prevailing AOD prevention research and programs have a historic lineage based on a maladaptive view of adolescents. This lineage, derived from the medical dominance of early community mental health programs, represents shifts in research and practice unaccompanied by changes in this underlying assumption. Are there alternatives to the view that the adolescent who, alone or in the context of the environment, is perceived to be deviant?

NEW DIRECTIONS AND PROMISING ALTERNATIVES

In this section we present two areas of prevention research that are promising alternatives to the prevailing assumptions regarding AOD prevention and adolescents. These alternative views developed from psychosocial and public health models. There have been attempts to subsume these areas into the dominant view presented above. However, because the underlying assumptions about adolescents and prevention are not the same, we maintain that these areas of research cannot be assimilated and are promising areas that merit further exploration. We begin with a social-historical examination of protective factor research and end this section with an examination of harm reduction programs.

PROTECTIVE FACTORS

It is now documented that many adolescents possess psychosocial factors that protect them against negative outcomes. These psychosocial factors are termed *protective* or *resiliency* factors. Given the difficulties shown in risk factor research, protective factor research represents a much clearer, more predictable, and more adaptive alternative to viewing the issue of adolescent AOD use. Once again, we begin with the field of mental health.

In 1974, Garmezy asserted that

> the forces that move [at-risk] children to survival and to adaptation, the long-range benefits to our society, might be more significant than our many efforts to construct models of primary prevention designed to curtail the incidence of vulnerability. (P. 97)

Anthony (1987) found that some children of schizophrenic and manic-depressive parents thrived despite adverse conditions. The conclusions that Garmezy and Anthony reached have been translated into a relatively small, but well-conducted body of research (Masten et al. 1988; Rolf and Garmezy, 1987; Rutter 1974, 1979, 1981, 1985; Werner 1986; Werner and Smith 1982).

Protective factors are not merely the opposite of risk factors. Rather, they represent a separate group of factors, defined independently of risk factor research. Rutter (1985) defines protective factors as "influences that modify, ameliorate, or alter a person's response to some environmental hazard that predisposes to a maladaptive outcome" (p. 600).

Taking a social systems approach, Werner (1986) defines protective factors that help to prevent AOD use. She found that (1) having a small family; (2) family cohesiveness, structure, and rules during adolescence; and (3) adequate early childhood attention helped to protect and adolescent from a range of difficulties.

In an 18-year, longitudinal, cause-and-effect study with well-defined parameters Werner (1986), looking at children of alcoholics, confirmed Garmezy's and Rutter's findings regarding protective factors external to the family. She noted that it is important to have a strong relationship with any adult, not necessarily a parent. She described the importance of an informal multigenerational kinship network, supportive role models, and a lower incidence of chronic stressful life events. This social systems approach to protective factors is an excellent example of the potential in this area to support the successful development of young adults.

Instead of merely maintaining the assumptions underlying protective factors research, an examination of their social history indicates a trend toward incorporating them into the risk factor mythology. Considering the different histories of the two approaches, these attempts at assimilation are inappropriate.

Let us return to the California application for DATE funds discussed above. When requesting proposals for school district AOD prevention funding, the application states:

> Extensive research on risk factors offers a clear direction for prevention programs. If programs can reduce risks and increase protective factors young people are less likely to experience problems with drugs, alcohol, and tobacco later in life. (CDE 1992, viii)

If protective factors are viewed as a distinct and viable approach to preventing AOD use among youth at this very basic level, they would not be addressed as part of the *extensive research on risk factors*. Although many might view this as a trivial point, it was found throughout the literature.

Incorporating protective factor research into risk factor research and programming has great consequences unto itself and as part of the bigger picture. Unto itself, combining the two approaches under the rubric of risk factors presents protective factors as merely the converse of risk factors. By doing this the illusion is created that protective factors are a focus of prevention efforts when, in fact, they are merely used as an alternative means of dealing with risk factors. As part of the bigger picture, researchers and programmers can maintain the assumptions on which most of the prevention field rests. By subsuming protective factors into the risk factor approach, prevention researchers and programmers continue to focus on identifying the maladaptive adolescent in need of services.

Historically, protective factor research developed independently of risk factor research. It arose from a serendipitous finding in mental health and took a completely different course than risk factor research. Most important, our findings show that protective factor researchers do not display the deviance assumption that is found in the risk factor mythology. Protective factor research, with its positive view of the individual student, promotes the well-being of all as opposed to the maladaptive identification of adolescents. This change in perspective represents a fundamentally different way of viewing adolescent substance use and supports the development of new approaches to preventing substance abuse.

THE CONTEXT OF ADOLESCENT DEVELOPMENT

In their study, *Problem Behavior and Psychosocial Development: A Longitudinal Study of Youth*, Jessor and Jessor (1977) conclude that "repressive policies have been counterproductive, and interpretations of maladjustment appear to be efforts to divest society of its share of responsibility. It would be an important step forward for prevention and control if problem behavior in youth came to be seen as part of the dialectic of growth, a visible strand in the web of time" (p. 248).

Jessor and Jessor view problem-related behaviors of youth, including AOD use, in a developmental context of normal growth. Here we see the first indications of a distinction between experimental use of AODs and AOD abuse. Newcomb and Bentler (1988) seem to summarize this best:

> In fact, experimental use of various types of drugs, both licit and illicit, may be considered a normative behavior among contemporary United States teenagers in terms of prevalence. (P. 214)

Consistent and well-founded evidence supports the premise that it is normal for adolescents to experiment with AODs.

It appears that these researchers have taken a different approach to understanding adolescent behavior, that is, that problem behavior in youth is a developmentally appropriate form of limit testing and is not indicative of an implacably deviant population. The consequences of this view open up a new range of possibilities. Instead of maintaining the assumption that adolescent behavior is maladaptive, researchers and programmers can now realistically examine an alternative prevention strategy: adolescent AOD experimentation and harm minimization.

Not only might it be normal for adolescents to use AODs, but adolescents who do experiment with drugs have been found to be psychologically more well-adjusted than those who never use or those who abuse (Shedler and Block 1990). In a study in which 101 subjects are being followed from birth to the present (age 18 at the time of publication), Shedler and Block (1990) report that "when psychological findings are considered as a set it is difficult to escape the inference that experimenters are the psychologically healthiest subjects, healthier than either abstainers or frequent users" (p. 625).

In this longitudinal long-term study and on several levels, Shedler and Block have been able to do what no other researchers in this field have achieved. First, they have operationally distinguished between abstainers (no use of marijuana or any other drug), experimenters ("subjects who had tried marijuana once or twice, a few times, or once a month, and who had tried no more than one drug other than marijuana," [Shedler and Block 1990, 615], and frequent users ("subjects who reported using marijuana frequently, that is, once a week or more and who had tried at least one drug other than marijuana," [Shedler and Block 1990, 615]). Notice the lack of reference to abusers.

Second, Shedler and Block have established a clear cause-and-effect relationship between a comprehensive battery of valid and reliable psychological profiles and differences between abstainers, experimenters, and frequent users. In every measure taken at age 18, without exception, either abstainers and/or frequent users differed significantly from experimenters.

Additionally, these are not onetime findings. Through psychological profiles of subjects at ages 7 and 11, Shedler and Block were able to predict which subjects were going to have or not have future adjustment difficulties.

Based on their operationally defined distinctions, we believe that Shedler and Block (1990) are able to reasonably conclude that

> in the case of experimenters, drug use appears to reflect age-appropriate and developmentally understandable experimentation. In the case of frequent users, drug use appears to be a manifestation of a more general pattern of maladjustment, a pattern that appears to predate initiation of drug use. Undoubtedly, drug use exacerbates this earlier established pattern but, of course, the logic of a longitudinal research design precludes invocation of drug use as causing this personality syndrome. (P. 627)

The nontraditional distinction of levels of AOD use among adolescents is as important a contribution to the field of AOD prevention for youth as the longitudinal methods that these researchers employed. As a group, the works of Jessor and Jessor, Newcomb and Bentler, and Shedler and Block open the door to rational discussion of alternatives to the traditional AOD prevention approaches and the assumptions on which they are based.

Currently, a small group of researchers are beginning to discuss the previously undiscussible: how to refocus the field toward minimizing the consequences of AOD use without condoning use. In 1991, Moore and Saunders wrote:

> Much thinking about drug use still revolves around the basic premise of how to prevent drug use rather than how to minimize drug-related harm. In our view, drug use is rarely pathological, deviant or mindless, nor is it usually the result of estrangement from "agents of socialization." It is an activity which is almost universal across the globe, has many benefits, and is arguably part of normative adolescent development. In much existing research "use" and "abuse" are confused, either intentionally or not, and consequently researchers seek to measure levels of use rather than levels of harm. (P. 33)

The harm reduction approach represents an alternative to the traditional AOD prevention strategies examined here. This approach is not based on the view of the AOD user as deviant. Instead, the focus is on reducing the potential that an adolescent will go on to become an abuser of AODs and the harm to the individual and society resulting from AOD abuse.

The harm reduction approach is the next logical step based on the findings from the fields of protective factor research and adolescent development. Considering the lack of effectiveness demonstrated by traditional AOD prevention approaches in the United States, we believe that the harm reduction approach merits further research.

CONCLUSIONS

We have found that, with few exceptions, for the past two and a half decades the literature of AOD prevention programs for youth is in a state of

constant flux, paradoxically, with little change in the fundamental assumptions. Despite these massive efforts, adolescent use patterns of two of the traditional gateway drugs (alcohol and tobacco) have remained relatively stable over this period. Only marijuana use has fluctuated (Johnson, O'Malley, and Bachman 1991). These facts show that shifting programs have not served the goal of a sustained reduction in adolescent AOD use.

In this article, we have examined bodies of literature related to AOD prevention and youth. These areas include community mental health, risk factors, protective factors, a variety of prevention programs, and evaluation studies that have helped to shape the practice of AOD prevention programming. Taken individually, each research area may have merit. Taken together, the body of research reveals a fundamental flaw in assumption and interpretation. Programmatic shifts do not represent fundamental changes in assumptions about adolescents and their behavior during this period of their lives.

In the field of community mental health, by an adherence to the medical model, programs shifted from too narrow to too broad of a focus with little apparent merit for either approach. In our social-historical review of the field of AOD prevention, the transfer of the target population deviance assumption was revealed. This occurred in the transfer of the deviance assumption from mental health to adolescent behavior and in the development of the risk factor mythology.

We submit that, due to a lack of demonstrated program effectiveness, for research and programming to continue significant shifts were necessary to sustain the field. That is, simply examining use patterns did not provide a causative focus for prevention efforts, so a risk factor approach was developed. When risk factors merely correlated with and did not predict AOD use, comprehensive community programs incorporating risk factors became the prevention method of choice. This pattern, taken in sum, represents the limiting aspects of prevention research. Protective factor research and the harm reduction model, in the context of normal adolescent development, represent rational alternative approaches in the field of adolescent AOD prevention research and programming.

Beyond these patterns, there exists a deeper issue: the conduct of social science relative to the funding source. When the implicit goal of research is to prove previously held assumptions, it is clear that difficulties arise. Researchers and programmers do not make shifts when shifts are merited, and apparent shifts occur when they are not merited. It is beyond the scope of this article to make social and/or psychological ascription for the motivations behind individuals participating in this relationship. Suffice it to say that we do believe there exists a contaminated relationship between re-

searcher and funder that needs to be further examined. From this article it is clear that merely restructuring research efforts while maintaining fundamental assumptions limits our progress. If we are to move beyond arguments over methodology and the significance of minimal research differences, we must be willing to go beyond the maintenance of the status quo. Research and programming efforts need to be examined not only in light of evaluative evidence, but within a historical context.

REFERENCES

Adler, R., and B. Raphael. 1983. Children of alcoholics. *Australian and New Zealand Journal of Psychiatry* 17:3-8

Anthony, E. J. 1987. Children at high risk for psychosis growing up successfully. In *The invulnerable child*, edited by E. J. Anthony and B. J. Cohler, 147-84. New York: Guilford.

Austin, G. 1988. *Prevention research update number one: Prevention goals, methods, and outcomes*. Portland, OR: Western Regional Center for Drug Free Schools and Communities.

Baizerman, M., and D. Compton. 1992. From respondent and informant to consultant and participant: The evolution of a state agency policy evaluation. In *Minority issues in program evaluation*, edited by A. M. Madison, 5-16. New Directions in Program Evaluation no. 53. San Francisco: Jossey-Bass.

Bangert-Drowns, R. L. 1988. The effects of school-based substance abuse education—A meta-analysis. *Journal of Drug Education* 18:243-65.

Battjes, R. J., and C. L. Jones. 1985. Implications of etiological research for preventive interventions and future research. In *Etiology of drug abuse: Implications for prevention*, edited by C. Jones and R. Battjes, 269-76. NIDA Research Monograph no. 56, DHHS Publication no. ADM90-1335. Washington, DC: U.S. Government Printing Office.

Bell, R. 1988. Using the concept of risk to plan drug use intervention programs. *Journal of Drug Education* 18:135-42.

Botvin, G. J., and T. Wills. 1985. Personal and social skills training: Cognitive-behavioral approaches to substance abuse prevention. In *Prevention research: Deterring drug abuse among children and adolescents*, edited by C. Bell and R. Battjes, 8-49. NIDA Research Monograph No. 63, DHHS Publication no. ADM 85-1. Washington, DC: U.S. Government Printing Office.

Bry, B. H., P. McKeon, and R. J. Pandina. 1982. Extent of drug use as a function of number of risk factors. *Journal of Abnormal Psychology* 91:273-79.

Bukoski, W. 1981. A review of drug abuse prevention research. Unpublished manuscript, Prevention Branch, National Institute on Drug Abuse, Rockville, MD.

———. 1985. School-based substance abuse prevention: A review of program research. *Journal of Children in Contemporary Society* 18:95-115.

California Department of Education. 1992. *Application for comprehensive drug, alcohol, and tobacco education program funding*. Sacramento: California Department of Education.

Crane, G. E. 1973. Risks of long-term therapy with neuroleptic drugs. Paper presented at the Wenner Gren Symposium on Antipsychotic Drugs, September, Stockholm.

Eisenberg, L. 1973. Psychiatric intervention. *Scientific American* 229:116-27.

Flay, B. R. 1985. What we know about the social influences approach to smoking prevention: review and recommendations. In *Prevention research: Deterring drug abuse among children and adolescents*, edited by C. S. Bell and R. J. Battjes, 67-112. Washington, DC: National Institute on Drug Abuse.

Friedson, E. 1970. *Professional dominance*. New York: Atherton.

Garmezy, N. 1974. Children at risk: The search for the antecedents of schizophrenia, part II: Ongoing research programs, issues, and intervention. *Schizophrenia Bulletin* 9:55-125.

Goldman, H. H., and J. P. Morrissey. 1985. The alchemy of mental health policy: Homelessness and the fourth cycle of reform. *American Journal of Public Health* 75:727-31.

Goodstadt, M. S. 1986. School based drug education in North America: What is wrong? What can be done? *Journal of School Health* 56:278-81.

Greenblatt, D. J., and Shader, R. L. 1971. Methoprobamate: A study of irritational drug use. *American Journal of Psychiatry* 127:33-39.

Hartlage, L. C. 1965. Effects of chlorpromazine on learning. *Psychology Bulletin* 64:235-45.

Hawkins, J. D., D. M. Lishner, J. M. Jenson, and R. F. Catalano. 1987. Delinquents and drugs: What the evidence suggests about prevention and treatment programming. In *Youth at high risk for substance abuse*, edited by B. S. Brown and A. R. Mills, 81-131. (DHHS Publication no. ADM 87-1537; reprinted 1990 as ADM 90-1537). Washington, DC: U.S. Government Printing Office.

Howard, J. 1988. Prevention research at NIAAA: Confronting the challenge of uncertainty. In *Prevention research findings: 1988*, edited by K. H. Rey and C. L. Faegre, 243-52. Rockville, MD: Office for Substance Abuse Prevention.

Jessor, R., and S. L. Jessor. 1977. *Problem behavior and psychosocial development: A longitudinal study of youth*. New York: Academic Press.

Johnson, C. A., W. B. Hansen, and M. A. Pentz. 1985. Comprehensive community programs for drug abuse prevention. *Journal of Children in Contemporary Society* 18:181-99.

Johnson, C. A., M. A. Pentz, M. D. Weber, J. H. Dwyer, N. Baer, D. P. MacKinnon, W. Hansen, and B. R. Flay. 1990. Relative effectiveness of comprehensive community programming for drug abuse prevention with high-risk and low-risk adolescents. *Journal of Consulting and Clinical Psychology* 58:447-56.

Johnston, L. D., P. M. O'Malley, and J. G. Bachman. 1991. *Drug use among American high school seniors, college students, and young adults, 1975-1990: High school seniors*. DHHS Publication no. ADM 91-1813. Washington, DC: U.S. Government Printing Office.

Kahn, A. J. 1969. *Studies in social policy and planning*. New York: Russell Sage Foundation.

Kandel, D. B. 1974. Interpersonal influences on adolescent illegal drug use. In *Drug use: Epidemiological and sociological approaches*, edited by E. Josephson and E. E. Carroll, 207-39. Washington, DC: Hemisphere.

———. 1989. Issues of sequencing of adolescent drug use and other problem behaviors. *Drugs & Society* 3(1/2): 55-77.

———. 1990a. Parenting styles, drug use, and children's adjustment in families of young adults. *Journal of Marriage and the Family* 52:183-96.

———. 1990b. Early onset of adolescent sexual behavior and drug involvement. *Journal of Marriage and the Family* 52:783-98.

Kandel, D. B., and K. Andrews. 1987. Processes of adolescent socialization by parents and peers. *International Journal of the Addictions* 22:319-42.

Kandel, D. B., and M. Davies. 1991. Decline in the use of illicit drugs by high school students in New York State: A comparison with national data. *American Journal of Public Health* 81:1064-67.

Kandel, D. B., M. Davies, M. S. Karus, and K. Yamaguchi. 1986. The consequences in young adulthood of adolescent drug involvement. *Archives of General Psychiatry* 43:746-55.

Kandel, D. B., and R. Faust. 1975. Sequence and stages in patterns of adolescent drug use. *Archives of General Psychiatry* 32:923-32.

Kandel, D. B., R. C. Kessler, R. Z. Margulies. 1978. Antecedents of adolescent initiation into stages of drug use: A developmental analysis. *Journal of Youth and Adolescence* 7:13-40.

Kandel, D. B., and V. H. Raveis. 1989. Cessation of illicit drug use in young adulthood. *Archives of General Psychiatry* 46:109-16.

Kandel, D. B., V. H. Raveis, and P. I. Kandel. 1984. Continuity in discontinuities adjustment in young adulthood of former school absentees. *Youth & Society* 15:325-52.

Kandel, D. B., O. Simcha-Fagan, and M. Davies. 1986. Risk factors for delinquency and illicit drug use from adolescence to young adulthood. *Journal of Drug Issues* 16:67-90.

Kiesler, C. A. 1981. Barriers to effective knowledge use in national mental health policy. *Health Policy Quarterly* 1:201-15.

———. 1982. Mental hospitals and alternative care. *American Psychologist* 27:349-60.

Kiesler, C. A., and A. E. Sibulkin. 1982. People, clinical episodes, and mental hospitalization: A multiple-source method of estimation. In *Advances in applied social psychology*, edited by R. F. Kidd and M. J. Saks, 131-61. Hillsdale, NJ: Lawrence Erlbaum.

Kinder, B., N. Pape, and S. Walfish. 1980. Drug and alcohol education programs: A review of outcome studies. *International Journal of the Addictions* 15:1035-54.

Klitzner, M. D. 1987. *Part 2: An assessment of the research on school-based prevention programs*. Report to Congress and the White House on the nature and effectiveness of federal, state, and local drug prevention/education programs. Washington, DC: U.S. Department of Education.

Korchin, S. J. 1977. *Modern clinical psychology: Principles of intervention in the clinic and community*. New York: Basic Books.

Lennard, H., L. J. Epstein, and B. G. Katzung. 1967. Psychoactive drug action and group interaction process. *Journal of Nervous and Mental Disease* 145:69-77.

MacKinnon, D. P., M. D. Weber, and M. A. Pentz. 1989. How do school-based drug prevention programs work and for whom? *Perspectives on Adolescent Drug Use* 125-43.

Macmahon, B., T. F. Pugh, and J. Ipsen. 1960. *Epidemiology*. Boston: Little, Brown.

Masten, A. S., N. Garmezy, A. Tellegen, D. S. Pellegrini, K. Larkin, and A. Larsen. 1988. Competence and stress in school children: The moderating effects of individual and family qualities. *Journal of Child Psychiatry and Psychology* 29:745-764.

McIntyre, K., D. White, and R. Yoast. 1989. *Resilience among high-risk youth*. Madison: Clearinghouse, Dean of Students Office Board of Regents, University of Wisconsin System.

Moore, D., and B. Saunders. 1991. Youth drug use and the prevention of problems: Why we've got it all wrong. *International Journal on Drug Policy* 2:29-33.

Moskowitz, J. M. 1989. The primary prevention of alcohol problems. A critical review of the research literature. *Journal of Studies on Alcohol* 50:54-88.

Newcomb, M., and P. Bentler. 1988. *Consequences of adolescent drug use: ..mpact on the lives of young adults*. Newbury Park, CA: Sage.

Pentz, M. A. 1983. Prevention of adolescent substance abuse through social skill development. In *Preventing adolescent drug abuse: Intervention strategies*, edited by T. J. Glynn, C. G. Leukefeld, and L. P. Ludford, 195-232. NIDA Research Monograph no. 47. Washington, DC: U.S. Government Printing Office.

———. 1985. Social competence and self-efficacy as determinants of substance use in adolescence. In *Coping and substance use*, edited by S. Shiffman and T. A. Wills. Orlando, FL: Academic Press.

———. 1986. Community organization and school liaisons: How to get programs started. *Journal of School Health* 56:382-88.

Pentz, M. A., P. S. Alexander, C. C. Cormack, and J. Light. 1989. Issues in the development and process of community-based alcohol and drug prevention: The Midwestern Prevention Project (MPP). In *Research, action, and community: Experiences in the prevention of alcohol and other drug problems*, edited by N. Giesbrecht, P. Conley, R. W. Denniston, L. Gliksman, H. Holder, A. Pederson, R. Room, and M. Shain, 265-85. OSAP Prevention Monograph no. 4. Rockville, MD: Office for Substance Abuse Prevention.

Pentz, M. A., B. R. Brannon, V. L. Charlin, E. J. Barrett, D. P. MacKinnon, and B. R. Flay. 1989. The power of policy: The relationship of smoking policy to adolescent smoking. *American Journal of Public Health* 79:857-62.

Pentz, M. A., C. Cormack, B. Flay, W. B. Hansen, and C. A. Johnson. 1986. Balancing program and research integrity in community drug abuse prevention: Project STAR approach. *Journal of School Health* 56:389-93.

Pentz, M. A., J. H. Dwyer, D. P. MacKinnon, B. R. Flay, W. B. Hansen, E.Y.I. Wang, and C. Anderson Johnson. 1989. A multicommunity trial for primary prevention of adolescent drug abuse: Effects on drug use prevalence. *Journal of the American Medical Association* 261:3259-66.

Pentz, M. A., E. A. Trebow, W. B. Hansen, D. P. MacKinnon, J. H. Dwyer, C. A. Johnson, B. R. Flay, S. Daniels, and C. Cormack. 1990. Effects of program implementation on adolescent drug use behavior: The Midwestern Prevention Project (MPP). *Evaluation Review* 14:264-89.

President's Commission on Mental Health. 1978. *Final report*. Washington, DC: President's Commission on Mental Health.

Rappaport, M. 1974. Schizophrenics for whom phenothiazines many be contradicted or unnecessary. *Psychology Today* 39:138.

Rolf, J. E., and N. Garmezy. 1987. The school performance of children vulnerable to behavior pathology. In *Life history research in psychopathology*, edited by D. F. Ricks, A. Thomas, and M. Roff, vol. 3, 87-107. Minneapolis, MN: University of Minneapolis Press.

Rutter, M. 1974. Epidemiological strategies and psychiatric concepts in research on the vulnerable child. In *The child in his family*, vol. 3, *Children at risk*, edited by E. J. Anthony and C. Koupernik, 167-179. New York: Wiley.

———. 1979. Protective factors in children's responses to stress and disadvantage. In *Primary prevention of psychopathology*, vol. 3, *Social competence in children*, edited by M. W. Kent and J. E. Rolf, 49-74. Hanover, NH: University Press of New England.

———. 1981. Stress, coping, and development: Some issues and some questions. *Journal of Child Psychology and Psychiatry* 22:324-56.

———. 1985. Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. *British Journal of Psychiatry*. 147:598-611.

Schaps, E., R. DiBartolo, J. Moskowitz, C. S. Palley, and S. Churgin. (1981). Primary prevention evaluation research: A review of 127 impact studies. *Journal of Drug Issues* 11:17-43.

Scheff, T. J. 1966. *Being mentally ill*. Hawthorn, NY: Aldine.

Shedler, J., and Block, J. 1990. Adolescent drug use and psychological health: A longitudinal inquiry. *American Psychologist* 45:612-30.

Shore, M. F. 1992. Community mental health: Corpse or phoenix? Personal reflections on an era. *Professional Psychology: Research and Practice* 23:257-62.

Snyder, S., S. P. Banerjee, H. I Yamamura, and D. Greenburg. 1974. Drugs, neurotansmitters, and schizophrenia. *Science* 184:1234-53.

Szasz, T. 1970. *Manufacture of madness*. New York: Harper & Row.

Tobler, N. S. 1986. Meta-analysis of 143 adolescent drug prevention programs: Quantitative outcome results of program participants compared to a control or comparison group. *Journal of Drug Issues* 16:537-67.

U.S. Department of Health and Human Services. 1990. Press release. June 1. Washington, DC.

U.S. General Accounting Office. 1991. *Promising community drug abuse prevention programs*. GAO/PEMD-91-7. Rockville, MD: U.S. General Accounting Office.

Werner, E., and R. S. Smith. 1982. *Vulnerable, but invincible: A longitudinal study of resilient children and youth*. New York: McGraw-Hill.

Werner, E. E. 1986. Resilient offspring of alcoholics: A longitudinal study from birth to age 18. *Journal of Studies on Alcohol* 47:34-40.

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