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Applying Resilience Theory to the Prevention of Adolescent Substance Abuse

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In recent years there has been tremendous interest in understanding why some children grow up to be healthy and well-functioning adults despite having to overcome various forms of adversity in their lives. The phenomenon of successful development under high-risk conditions is known as "resilience," and a great deal of research has been devoted to identifying the protective factors and processes that might account for children's successful outcomes (Garmezy, 1985; Glantz & Johnson, 1999; Masten, 2001).

There is considerable overlap between the research on resilience and most current research on substance abuse prevention, as both are grounded in developmental models that stress the complex and reciprocal relationship between the individual and the environment (e.g., Conger, 1997; Lerner, 1991). For example, using the concepts of *risk* and *protection* that are the cornerstones of resilience theory, many comprehensive reviews have identified the risk and protective factors for substance use (e.g., Hawkins, Catalano, & Miller, 1992; Oetting, Edwards, Kelly, & Beauvais, 1997; Steinberg, 1991). However, one critical difference between the literatures is that the study of resilience tends to take a broader view, focusing on larger issues of adjustment and adaptation rather than on substance use in isolation from other aspects of adolescent development.

The study of resilience has entered a new generation of theory, research and practice, in which attempts have been made to clarify some previous limitations and ambiguities in the model. After some brief definitions of critical terms, this article will review some of those current issues, and describe how the literature on resilience can be applied to research and practice in the prevention of adolescents' use of alcohol, tobacco, and other drugs (ATOD). The article does not comprehensively review the pioneering studies in resilience or the well-established risk and protective factors pertaining to adolescent development; that information has been well-covered in a previous CYD Focus (Carlos & Enfield, 1998), which provides an excellent introduction to the topic.

Core concepts within the resilience literature

Risk factors are environmental stressors or conditions that increase the likelihood that a child will experience poor overall adjustment or negative outcomes in particular areas such as physical health, mental health, academic achievement, or social adjustment. Commonly identified risk factors include traumatic life events (such as the death of a parent), socio-economic disadvantages, family conflict, chronic exposure to violence, and serious parental problems such as substance abuse,

criminality, or mental illness (Kaplan, 1999). Growing up in poverty is a particular concern because it encompasses a host of specific risks to the child such as limited access to health care, economic stresses on the family, increased exposure to environmental hazards, and limited opportunities for employment.

Competence refers to a variety of adaptive behaviors of children, enabling them to achieve resilient outcomes (Masten & Coatsworth, 1998). Competence can be characterized in broad terms such as overall psychological health and adaptation, or it could be restricted to specific areas such as social functioning, academic success, or emotional health.

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Resilience is a concept that incorporates two components: (a) exposure to significant stressors or risks, and (b) demonstration of competence and successful adaptation. By this definition, resilience is a set of processes rather than a fixed characteristic of the child. Children who appear resilient at one age may or may not remain so through later years as their life circumstances change.

Vulnerability factors are characteristics of the child that tend to intensify the effects of risk factors. Vulnerability factors tend to predispose or sensitize children to the effects of a risk process, but do not lead to the negative outcome unless the risk variable is also present (Rutter, 1990). For example, poor problem-solving skills can increase children's vulnerability to stressful events because they have relatively low capabilities for dealing with those events successfully.

Protective factors are characteristics of the child or the environment that ameliorate or reduce the potentially negative effects of the risk factor. There are several ways in which protective factors might operate. Some inconsistency exists regarding the relationship between risk and protective factors. Rutter (1990) has argued that risk factors and protective factors should be viewed as two fundamentally different kinds of variables. However, some researchers and program practitioners treat these two terms as opposite points on a single continuum. For example, family conflict is seen as a risk factor while family harmony is seen as a protective factor. In that case, "conflict" and "harmony" do not refer to two separate phenomena, but to the varying status of individual families on one underlying dimension. Masten (2001) refers to this type of variable as a *bipolar* predictor, while other variables might be seen more purely as risks (e.g., exposure to violence) or assets (e.g., a particular talent).

Developmental assets are individual and environmental factors that increase the likelihood of achieving positive outcomes (Scales, Benson, Leffert, & Blyth, 2000). Assets are conceptually similar to protective factors but there is a critical definitional difference: Protective factors are defined with reference to a risk factor and they function by counteracting, buffering or ameliorating that risk. Assets, on the other hand, are defined not in terms of risk variables but directly through their positive statistical association with desirable outcomes. In other words, when the asset is present there is greater probability of a successful developmental outcome (school achievement, absence of problem behaviors, etc.), regardless of the young person's risk status.

Recent directions in resilience research

Over the past decade, researchers have made significant advances in the conceptualization of resilience and the research approaches for studying it. As a result, the theory has become progressively more sophisticated. Following are some of the important areas in which the research and practice pertaining to resilience is changing.

Types of resilience studies. There are at least two distinct approaches to studying resilience, which have been categorized (with occasionally varying terminology) as *person-focused* studies and *variable-focused* studies (Luthar and Cushing, 1999; Masten, 2001). The first approach seeks to identify children or adults who have adapted well under high-stress conditions, as well as those who have experienced problems in adaptation. The groups are compared to determine the causes of success and the underlying protective and vulnerability processes that contribute to these outcomes. These research projects include longitudinal studies that track a cohort of participants over several years or even decades (e.g., Hetherington et al, 1992; Jessor, Donovan, & Costa, 1991; Werner & Smith, 1992; Wyman et al, 1999). The studies accumulate comprehensive accounts of significant events in the

participants' lives, and administer psychological batteries, scales, and interviews at intervals of several years. Multiple areas of risk, coping, and competence are typically studied. Substance use is usually one set of behaviors that is examined as part of the participants' patterns of adjustment.

By contrast, *variable-focused* studies tend to use cross-sectional designs to examine a sample of participants. Different degrees of risk exposure are identified, and these are combined with a variety of other variables to determine what combinations of factors predict particular levels of competence. Frequently, the data are collected at a single point in time. Risks may be assessed through self-report measures of stressful life events, socioeconomic status, or everyday levels of stress. Similarly, measures of competence are identified in the specific area of interest, such as social, behavioral, or academic functioning. The overall strength of relationship between the risk factor and the competence outcome is identified, and the specific protective factors and vulnerability factors that influence this relationship are identified as well.

Is resilience a stable trait of the individual? One of the most important theoretical and practical issues concerning resilience is the degree to which it should be viewed as an enduring trait, centered primarily within the child, or a dynamic and changing interaction between the child and his/her environment. A decade ago, authors tended to treat resilience as a trait that makes children relatively impervious to high-risk environments. However, in recent years most researchers have recommended that resilience is better viewed as a process defined by the presence of the two elements noted previously: demonstrated competence within the context of a high-risk environment (Luthar & Cicchetti, 2000; Masten & Coatsworth, 1998). In this conception, it is *competence* or *adaptation*, rather than *resilience*, that is the characteristic which can be identified in the child. The soundness of this "process" perspective is underscored by the fact that the research literature places high importance on the presence of protective factors in the environment—such as effective parenting, community supports, etc.—in producing resilient outcomes. Thus, it is by no means the characteristics of the child alone that account for successful developmental outcomes.

Another shortcoming of the trait perspective is the finding from longitudinal studies, following people over many years, that individuals can move from unsuccessful to successful adaptation—as well as vice-versa—at different stages in their lives. For example, Emmy Werner's study of high-risk children born in Kauai found that some participants who were experiencing difficulties as adolescents showed successful adjustment later on in their adult years (Werner, 2000; Werner & Smith, 1992); thus, their demonstration of resilience was relatively delayed. In sum, human development is a dynamic and complex process, and we cannot expect adjustment—especially in high-risk environments—to be stable and consistent across the lifespan.

Nevertheless, there is not full agreement on this issue and many researchers, as well as program practitioners, view the construct in terms of a stable internal trait. Accordingly, Luthar, Cicchetti, & Becker (2000) have made a recommendation about terminology: they note that "*resilience*" should be used in reference to the phenomenon of competence under conditions of adversity, while "*resiliency*" should be reserved for instances in which one is referring specifically to a trait of the individual. The construct of *resiliency*—e.g., "ego resiliency" as discussed by Block and Block (1980), which refers to a psychological characteristic of resourcefulness—does not imply any assumption about whether the individual has been exposed to conditions of high risk.

Resilience is not an extraordinary phenomenon. Children who have thrived under conditions of harsh adversity command a great deal of admiration. But the perspective that resilience is an extraordinary quality that distinguishes a relatively few extraordinary children is challenged by Masten (2001), who notes that it is generally found to be based on ordinary, normal human adaptive processes. Specifically, numerous research studies have found resilient outcomes to be present when a small number of systems are operating well: relationships with caring adults, effective self-regulation skills, competent intellectual abilities, positive self-regard, and intrinsic motivation to succeed. The most serious threats to positive development may well consist of the hazards to these basic protective

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systems rather than other forms of risks. The fact that some circumstances exist in which a majority of children do not successfully adapt is evidence that these processes can be easily disrupted. Demystifying the concept of resilience in this way reminds us that resilience is not a rare psychological quality to be isolated and measured, and it leads us to examine how we can enhance these protective processes for children who live in difficult environments. Program interventions can focus on building and preserving these sources of protection within the child, the family, and the community.

Types of protective relationships. How does a protective factor exert its influence on the risk-outcome relationship? This has become a critical question for resilience researchers because it forms the basis for understanding how we can apply this research to improve people's lives. Some identified protective factors—particularly those that may have some genetic basis such as temperament or intellectual functioning—are probably difficult to change; however, other protective factors, such as parenting skills, are suitable targets for improvement through intervention programs. Yet before we can design intervention programs to foster these protective factors we must understand how, why, and in what situations they work. A great deal remains to be learned in this area, since researchers have thus far been more successful in identifying protective factors than in explaining how they operate.

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There are several ways in which protective mechanisms can function (Kaplan, 1999; Rutter, 1990). To illustrate, consider a particular risk-protection-outcome relationship: the consistent finding that exposure of an adolescent to drug-using peers is a strong risk factor for the adolescent's own drug use, while a strong adolescent-parent relationship is protective against drug use (Hawkins et al., 1992; Steinberg, 1991). How might these factors interact?

First, a protective factor might serve to buffer or reduce the effects of a risk variable by strengthening internal psychological characteristics, such as the child's self-esteem or his/her interpretations of the risk exposure. In this case, the individual is exposed to the risk variable but its potential negative impact is weakened as a result of the protective process. For example, strong relationships with parents may be protective by increasing the likelihood that the adolescent will internalize the parents' values against drug use. Those values, in turn, may serve to reduce subjective feelings of social pressure that can lead to behavioral conformity in the immediate presence of drug-using peers.

Second, a protective factor might have its effect by providing the child with the ability to cope with the risk directly. In this case, successful parents may have helped the adolescent to develop social and interpersonal skills that enable him or her to successfully navigate difficult social situations, so that he or she can decline to use alcohol or drugs in a way that is not socially awkward, thereby avoiding social isolation.

Finally, a third possibility is that certain factors might reduce the child's actual exposure to the risk, as opposed to neutralizing its negative effects. For example, skillful parents might be able to minimize the opportunities that their adolescents have for engaging in drug use. This would be the case in instances in which parents carefully monitor their teens' parties and ensure that adult supervision is present at any parties that their teens attend.

Let us consider further the case in which skillful and attentive parents are successful in eliminating the situations in which their child is exposed to substance-using peers. Some writers have noted that it is not really accurate to describe this type of situation as a protective process, because there is actually no exposure to the risk variable at all (Luthar, Cicchetti, & Becker, 2000). A true protective process, by contrast, occurs when the child is exposed to the risk but is able to adapt successfully despite the exposure, due to factors such as the child's own personal strengths, compensatory resources, or external buffering processes.

The distinction between protective processes and risk avoidance is important because our understanding of risk and protection is not really adequate if we cannot be certain about which children have or have not been exposed to the suspected risk variable. This point becomes particularly apparent when risk factors are characterized as demographic categories. A low income level might be identified as a risk factor for drug use when, in fact, income level is correlated with neighborhood of residence and the more direct risks

might include increased availability of illicit drugs in the neighborhood or contact with drug users. It is quite likely that not all low-income children have been equally exposed to these risks, but we might never know this if we are satisfied to view income as the critical risk variable. It follows that errors can be made when we design interventions to counteract what we believe are the essential risk processes. These errors can include who is identified for recruitment into the program, as well as how the program content is focused.

Resilience as a fad and policy phenomenon. The concept of resilience has a widespread intuitive appeal and has been enthusiastically adopted by many policymakers and funding agencies concerned with the development of children. The policy community and the public have tended to adopt the trait view of resilience, and it is common to see youth programs and interventions adopt the goal of making children *resilient* against a variety of life stresses. Thus, some people interpret resilience to be a commodity that can be imparted to children to make them immune to problems in their environment. As a result, some writers have criticized the current focus on resilience on the grounds that it may detract from efforts to reduce and control social and environmental risk factors (Bartelt, 1994; Luthar & Cicchetti, 2000). That is, they fear it may promote the perspective that children—rather than society's support systems for children—are the units that need to be changed.

This is a valid concern, and all researchers in this field would undoubtedly agree that a focus on "fixing the child" is a serious misinterpretation of the research literature. Thus, Ann Masten concluded a 1996 presentation to Congressional and federal agency staff by noting:

> "The key to intervention could lie in triggering or facilitating natural protective systems. A crucial question for the future is whether such efforts are best modeled on naturally occurring resilience or not. The great danger I see in the idea of resilience is in expecting children to overcome deprivation and danger on their own. Therefore, I want to close with the same message I opened with. There is no magic here; resilient children have been protected by the actions of adults, by good nurturing, by their assets and by opportunities to succeed. We cannot stand by as the infrastructure for child development collapses in this nation, expecting miracles" (Consortium of Social Science Associations, 1996, p. 24).

The prospect of unrealistic expectations from policy makers poses an additional problem because it could lead to a funding roller coaster in which inflated expectations lead to temporarily high levels of financial support, only to have the trend reversed after several years when these false expectations from the public and from legislators are not fulfilled. Unfortunately this phenomenon is already well known in prevention research due to continuing fluctuations in support for drug prevention programs (Braverman & Campbell, 1989).

The asset approach to resilience. The resilience literature has contributed to a focus on positive child and adolescent development, and one way in which that focus has been adapted for policy and program interventions for youth has been the *developmental assets framework* designed by the Search Institute (Scales & Leffert, 1999; Benson, Leffert, Scales, & Blyth, 1998). This framework identifies 40 factors (or assets) that are demonstrated to be associated with positive youth development. Twenty of these assets are internal psychological attributes, grouped into four categories (commitment to learning, positive values, social competencies, and positive identity) while the remaining 20 are external features of the environment, also in four categories (support, empowerment, boundaries and expectations, and constructive use of time). More detail on the developmental assets framework and its applications to 4-H in California have been provided in the previously cited CYD Focus by Carlos and Enfield (1998).

Although the asset framework was derived in part from resilience theory (as noted by Leffert et al., 1998), the primary analytical approach taken by the Search Institute researchers does not involve the identification and measurement of risk factor variables. Instead, they have examined the direct cumulative impact of the 40 assets on a variety of positive developmental outcomes. These outcomes include not only the avoidance of problem behaviors but also the presence of indicators of what they term "developmental thriving": school success, leadership, helping others, maintenance of physical health, delay of gratification, valuing diversity, and overcoming adversity (Scales et al., 2000).

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How can resilience research contribute to what we know about substance abuse prevention?

As noted, there is a good deal of overlap between the literature on resilience and the literature on preventing use or abuse of alcohol, tobacco and other drugs (ATOD). However, one critical difference is that the study of resilience, from a longitudinal perspective as described above, takes a fundamentally broader view, often across the lifespan, and focuses on the individual's overall adjustment and adaptation (Braverman, 1999). A central concept in this view is that normal development throughout the life cycle is built around the successful achievement of specific developmental tasks. In adolescence, for example, the individual needs to achieve a stable and enduring identity, individuate from parents, establish patterns of sexual intimacy, and prepare for entry into the workforce, among other challenges. This long-range view can help us to interpret more specific behaviors such as tobacco or alcohol use, within the context of adolescents' overall development (Conger, 1997). Following are some recommendations for how our growing understanding of resilience can be used to benefit theory and practice in prevention.

Adolescents may experiment with ATOD use for reasons pertaining to peer bonding, autonomy, self-definition, adult role transitions, or a host of other potential issues.

Understanding differences in young people's motivations for substance use.

The broader view of adolescent development that is highlighted by the resilience framework should lead us to consider substance use in terms of young people's overall success in adapting to the challenges of adolescence. One implication of this broader view is the recognition that for any complex set of behaviors such as ATOD use, different individuals will have a variety of different motivations for engaging in those behaviors. These motivations stem in large part from the different meanings that the individuals associate with the behaviors, and as youth professionals we need to understand those various meanings. As Richard Jessor's work on problem behavior theory (Jessor et al., 1991) illustrates, adolescents may experiment with ATOD use for reasons pertaining to peer bonding, autonomy, self-definition, adult role transitions, or a host of other potential issues. In a parallel vein, problem behavior theory also asserts that different adolescents might engage in disparate risk behaviors for underlying reasons that are often highly similar.

An example of the differences in motivations that may underlie a particular behavior can be found with regard to cigarette smoking and peer influence. A good deal of research has concentrated on the processes of peer influence on cigarette smoking, and numerous studies have indeed shown that adolescents are much more likely to smoke if their friends smoke (Hawkins et al., 1992). Thus, several theories have addressed the important ways in which mutual peer influences affect smoking uptake (e.g., Oetting & Beauvais, 1986). Nevertheless, it would be a mistake to conclude that models of peer relationships can describe the tobacco experimentation process for all adolescents, as illustrated by the fact that some of the highest smoking rates occur among adolescents who are social isolates (Ennett & Bauman, 1994). This does not disprove that reciprocal peer influences are a primary motivator for *some* adolescents who experiment with tobacco, but it reminds us that we cannot seek a single universal explanation of substance use that holds true for all young people. We need theoretical perspectives that take individual differences into account.

The finding of heavy smoking among socially isolated youth can be addressed by an individual differences model presented years ago by Glynn, Leventhal, & Hirschman (1985), who described three fundamentally distinct categories of motives for adolescents' initial attraction to tobacco use: (a) *social compliance*, in which youths' tobacco experimentation is tied to issues of peer acceptance and the social dynamics of the peer group; (b) *affect regulation*, in which youth seek to control their bodily states and are attracted to tobacco's drug effects; and (c) *self-definition*, in which youth desire to project particular identities and turn to tobacco use as a symbol for toughness, independence, or adult status. Thus, this third category addresses why youth may be drawn to tobacco use for reasons that are independent (at least in a direct sense) of peer relationships. Glynn et al. hypothesized that each of their three categories of motivation should be associated with different prevention strategies, and also that they probably carry different prospects for success. For example, youth in the third category, who may use smoking in part to express their rejection of school

authority, may be the most difficult group to influence through prevention programs.

Selman and Adalbjarnardottir (2000) provide another example of multiple meanings, this time with regard to adolescent alcohol use. The authors present a detailed analysis of in-depth interviews with two 15-year-old Icelandic boys who were frequent alcohol drinkers. One boy described his motivations for drinking in terms of social conformity and escape from boredom. The second boy revealed that drinking facilitated his ability to connect emotionally with friends; he was further drawn to drinking because he felt that the ability to "drink well" was an important characteristic of mature adult life. Differences in motivation and personal meaning, such as these, can create important differences in the ways that youth use alcohol as they get older.

In terms of research methods, these differences in individual meanings can generally be addressed most successfully through the use of in-depth interviews, rather than the surveys and questionnaires that are most typically used in prevention research. Fortunately the use of open-ended interviews with adolescents has been growing in studies of recent years. As Selman and Adalbjarnardottir (2000, p. 49) note:

> "Although surveys contribute needed information by documenting trends in adolescent attitudes and behaviors, they alone cannot detect the deeper developmental and cultural foundations in meanings that underlie attitudes and actions….Surveys do not tell us what adolescents themselves can tell us, if only we ask them to take seriously questions that probe the deeply embedded psychological, social, and cultural meanings that lie just under the surface of their attitudes and actions."

Substance use as a strategy for coping with stress. The study of resilience is closely tied to research on stress and coping in adolescents (Ayers, Sandler, & Twohey, 1998; Wills & Filer, 1996). As Wills and Filer note, many of the individual-level characteristics that have been identified as protective factors can be considered either dimensions of coping (such as skills in problem-solving and self-regulation) or contributors to coping competence (such as autonomy, intelligence, and social competence). It follows, then, that the literature on resilience has relevance for understanding ATOD use as a coping strategy to deal with family disruptions and other significant stressors in young people's lives. The resilience perspective encourages us to examine what the behavior's specific adaptive value might be for a given adolescent in the midst of heightened stress. For example, many adolescents report that smoking serves powerful mood regulation functions, including calming them down, releasing stress, and inducing feelings of self-control (Lloyd, Lucas, Holland, McGrellis, & Arnold, 1998).

Wills and Filer (1996) classify substance use as a form of *avoidant coping*, a set of responses to stress that also includes distraction, social withdrawal, denial, and emotional venting. In contrast, *active coping* includes behavioral attempts to address the source of stress, as well as some cognitive attempts to redefine or reinterpret it. They report that alcohol and tobacco use are associated with both high levels of stress and low levels of active coping. On the other hand, academic achievement and other forms of competence have been found to reduce the usually strong relationship between stress and substance use.

Health-conscious educators and other adults will be appalled at an adolescent's substance use to cope with emotional distress, but the adolescent may well have a different set of immediate priorities. From an educational and developmental point of view, we must aim to help the young person develop sets of competencies that could lead to more productive and more health-protective responses to stress. Thus this view supports the aims of program interventions that seek to strengthen adolescents' life skills. In addition, studies on resilience provide a developmental perspective on social skills and self-regulation, so that we might be able to understand the growth of these competencies from early childhood through adolescence. This understanding will help us to design programs and strategies that are effective for particular ages.

Young people need competencies that lead to productive and health-protective responses to stress.

Program strategies for prevention of substance abuse

The broad focus of resilience theory on an individual's overall adaptation suggests a similarly broad focus for interventions that aim to prevent substance abuse or other problem behaviors. Short-term educational strategies have not generally been found to have strong or lasting effects. For example, the most

widely disseminated school-based program, Drug Abuse Resistance Education (D.A.R.E.), has consistently met with very limited success (e.g, Dukes, Stein, & Ullman, 1997), even though it is estimated to be taught in roughly 75% of all U.S. schools (Smith, 2001). As a result of this and similar experiences, in recent years there has been a lowering of expectations for straightforward school-based strategies for preventing ATOD use. As Masten (1999) notes, it is a mistake to presume that an educational approach can be designed that will serve as a "magic bullet" to inoculate youth against ATOD use.

A good deal of discussion has been generated in the prevention community by the recent field trial of a school-based tobacco program in Washington state, conducted by the Fred Hutchinson Cancer Research Center (Peterson, Kealey, Mann, Marek, & Sarason, 2000). This intervention, based on the social influences approach, was developed to include all of the recommended components for school-based programs. The evaluation was rigorously conducted and indicated that the program was delivered with high fidelity, the measures were well-chosen, and participant attrition from the study was very low. Yet the evaluation showed that the program did not produce any statistically significant differences between the intervention and control groups in daily smoking, extent of current smoking, or cumulative amount smoked. The study has been widely considered to be a setback for the social influences approach to prevention. For example, Clayton, Scutchfield, and Wyatt (2000, p. 1964-1965) commented:

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> "…[this project] is destined to become the gold standard in prevention science, the definitive study on the social influences approach to prevention. Whenever such an impressive intervention study finds no effect on the outcomes, there is a search for what could possibly have gone wrong…. First, the theory that has dominated thinking about prevention interventions over the past 25 or so years may be seriously flawed….Second, the social influences approach, which typically locates the causes of smoking almost exclusively within the individual, may be far too narrow….It is clear that we must move beyond simple models of main effects (i.e., increase knowledge of influences from media and peers to smoke and skills to resist these influences to prevent smoking) to more complex, robust causal models."

On the other hand, programs that take a more contextual approach and focus on building adolescents' overall social competence have met with more success. Several of these are listed by Smith (2001), including the Life Skills Training program developed at Cornell University, which aims to prevent adolescents' use of a broad range of licit and illicit drugs, and Project Northland in Minnesota, which addresses teen drinking by focusing on a wide variety of individual and community factors. As another example, Hawkins, Catalano, Kosterman, Abbott, and Hill (1999) reported on the evaluation of a life skills program for children in grades 1-6. The intervention included social competence training for the children, in-service training for their teachers, and developmentally appropriate parenting classes for their parents. When the children were followed up at age 18, the intervention group reported reduced levels of heavy drinking as well as other problem behaviors including violent delinquent acts, sexual intercourse, and pregnancy rates.

What specific factors should be targeted by intervention programs? With regard to personal competencies, program foci should be broad and should address issues pertaining to overall adolescent development. For example, the Life Skills Training program focuses on personal coping skills such as decision-making and dealing with anxiety, as well as social interaction skills such as initiating social contacts, engaging in conversation, and behaving assertively (Dusenbury & Botvin, 1990). Numerous programs also build on developmental asset theory by focusing on strengthening the assets identified in the Search Institute model (Benson et al., 1998); some of the person-level assets in this model, in addition to the competencies already mentioned, include achievement motivation, school engagement, integrity, responsibility, and cultural competence.

Resilience theory also suggests that whenever possible, programs should incorporate goals pertaining to interpersonal and community supports in addition to the competencies of the individual child. Braverman, Meyers, and Bloomberg (1994) recommended that youth programs should focus on fostering known protective factors such as youth-adult attachments and meaningful participation in community activities. Rolf and Johnson (1999) noted two further elements: broadening

"opportunity structures" (that is, the availability of diverse choices and experiences, particularly for older adolescents), and connecting youth with the world of adult work. Finally, Masten (1999) suggested that programs may also be able to work on reducing the exposure of youth to particular risks in their environments, in addition to strengthening community-based protective processes. One successful example of these approaches is Project Northland, implemented and evaluated in 22 Minnesota communities, which was able to achieve significant reductions in adolescents' initiation of drinking and overall drinking prevalence. The project utilized a combination of activities including educational activities, peer leadership, parental involvement, and community task force activities such as the promotion of local ordinances (Smith, 2001).

Another strong implication from the resilience research is that educational programs and other individual-level approaches need to be combined with policy changes. With regard to the legal drugs, tobacco and alcohol, relevant policy approaches should include strengthening of laws governing youth access to these products, restriction of advertising, and adjusting purchase prices through tax policies to make the products very expensive to obtain. All of these strategies have been found to be effective with regard to youth-targeted prevention. Furthermore, school-based educational activities should be combined with school policies regarding those substances, such as banning any use of tobacco on school grounds.

Conclusion

Resilience theory is based on a perspective that numerous factors, both within and outside of the child, combine to determine the general course of development as well as specific behavioral patterns. From this viewpoint it is easy to appreciate that short-term programs, such as those often found in schools or nonformal program settings, face formidable challenges in meeting their goals of preventing ATOD use and abuse. As noted by Masten (1999), these programs can themselves be viewed as protective factors that exist within the community to support adolescent development, and thus it would be unreasonable to expect them to be the strongest or sole determinants of adolescents' substance use behaviors.

Prevention programs will have their greatest chance for success if they can connect with teenagers on subjects of high priority to them, including social relationships and individual competencies. By contrast, if they concentrate only on discouraging substance use, they risk being irrelevant to most young people's primary concerns, becoming an activity that the youth view as important only to adults. Fortunately, many youth programs have been moving in this new direction, and they are focusing on building assets, strengthening environmental supports, and involving other sectors in the community. This tends to make programs more complex, but it also makes the potential benefits for youth more valuable. One of the lessons of resilience research is that we do not get very far by trying to examine individual aspects of young people's lives in isolation from their lives as a whole.

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