Positive Youth Development Requires Comprehensive Health Promotion Programs

Brian R. Flay, DPhil, FSBM, FSCRA, FAAHB

***Objective*: To explore relationships among problem and positive youth behaviors, commonalities among their predictors, and implications for prevention. *Methods*: Review etiology and prevention literatures. *Results*: Risky/unhealthy/antisocial behaviors, poor mental health, and poor academic achievement are highly prevalent and pose critical dilemmas for parents and educators. All behaviors are highly correlated with, and predict, each other; have many of the same risk and protective factors; and strongly influence success and happiness in life. Some examples of comprehensive programs with positive results in multiple domains are provided. *Conclusion*: We need to prevent problem behaviors and promote positive behaviors with comprehensive, coherent, and integrated approaches.**

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We need to link prevention and health promotion with success in school and life. To date, most prevention, health promotion, character education, and social-emotional learning programs (and research) neglect the obvious link with academic achievement. Researchers who state that improved behavior might lead to improved school performance are rare; exceptions include 2 groups of prevention researchers,[1,2] a character education researcher,[3] and social-emotional learning researchers.[4] Health behavior and prevention researchers more often remind us that poor performance in elementary school predicts poor behavior in adolescence. We need to go far beyond these few statements and recognize that all good education needs to include content and programs to develop positive and successful youth. This need is urgent in our society today, as the public and politicians demand more accountability.

Most education dollars today are targeted to improving basic reading, writing, and math skills, and conducting testing to determine if learning is actually occurring, eg, $900 million to Reading First in 2002. However, education is in crisis. There are few reading or other academic programs of proven effectiveness. Yet, the demand for science-based programs is strong at all levels, federal, state, and local. As scientists, we must ask if the sciences of prevention/promotion program development and efficacy/effectiveness testing are evolved enough. Is science fully prepared to answer all the questions being asked?

Although the demands on schools are

Brian R. Flay, DPhil, FSBM, FSCRA, FAAHB, UIC Distinguished Professor, Public Health (Community Health Sciences) and Psychology, Health Research and Policy Centers, University of Illinois at Chicago, Chicago IL.

Address correspondence to Dr. Flay, Health Research and Policy Centers, University of Illinois at Chicago, 850 W. Jackson Blvd., Suite 400, M/C 275, Chicago, IL 60607. Email: bflay@uic.edu

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ever increasing, there are also increasing demands for family, community, and after-school programs. Communities are also in crisis. Adolescent behavior appears to be getting worse, and the opportunities for positive youth development decreasing. However, even those programs focused on community involvement must not leave out schools. Education is, and always will be, the key to youth development.

Positive and healthy behaviors, prosocial behavior, mental health, and academic achievement are positive outcomes of youth development that are highly prevalent. Unfortunately, their reverse – problem/risky behaviors, unhealthy behaviors, antisocial behavior, poor mental health, and poor academic achievement — also remain highly prevalent and continue to pose critical dilemmas for parents and educators. In this paper, I develop the thesis that these problems should be addressed by a comprehensive, coherent, and integrated approach, rather than the disjointed approach to prevention and promotion taken by education today. I argue and present evidence that these problems are highly correlated, predict and are predicted by each other, have many of the same risk and protective factors, and severely limit success and happiness in life. The logical conclusion of all this is that we need to prevent problem behaviors by promoting positive behaviors in a comprehensive, coherent, and integrated approach. I present preliminary evidence that such an approach can effectively prevent multiple problem behaviors and increase multiple positive behaviors and outcomes.

Relationships Among Behaviors

Thesis. My thesis in this section is that all behaviors, not just problem behaviors, are related to each other. They are correlated, and they also cause each other. That is, whatever one occurs first will be predictive of others.

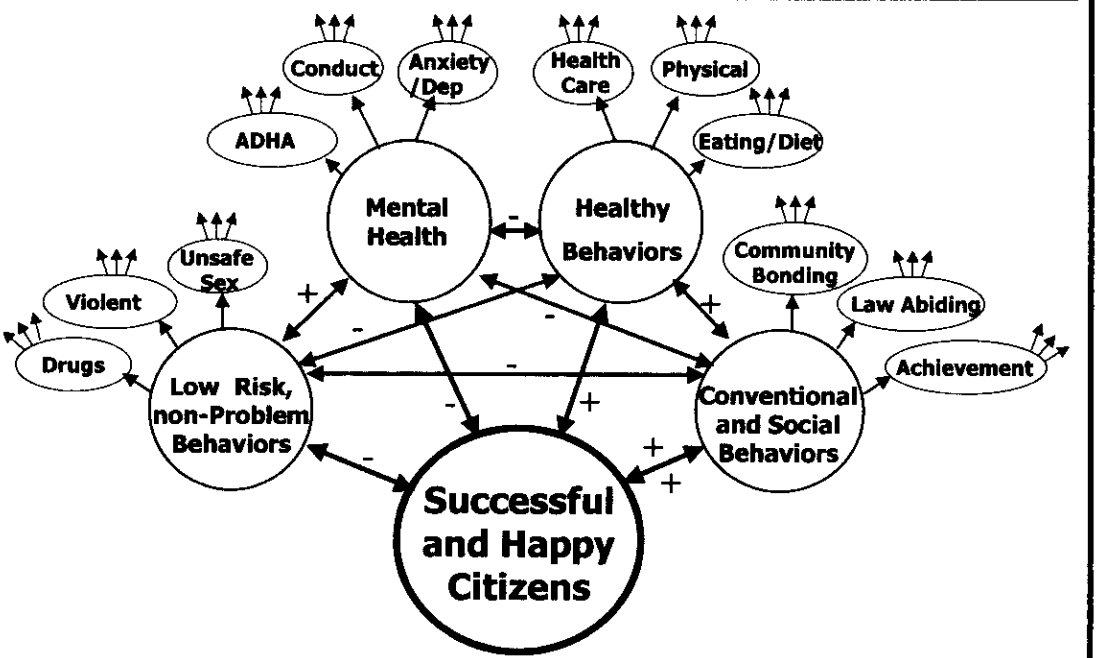
Evidence. The idea that different adolescent problem behaviors cluster and have the same underlying causes has been evident for many years and is evident in several theories.[5-9] The linkages between alcohol or drug use and both violence and sexual behavior among adolescents are clear.[10-17] About a third of youths committing serious crimes consume alcohol just before the offense. More than 70% of teen suicides involve frequent use of alcohol or drugs. Nearly 40% of drownings involve use of alcohol. Alcohol and drug use are the best predictors of early sexual activity and are associated with more unplanned pregnancies, more sexually transmitted diseases, more HIV infection, and greater school dropout than any other causal factor.

There is less clear evidence supporting the idea of a health-enhancing lifestyle.[18-20] It is clear, however, that all health-enhancing behaviors tend to correlate negatively with health-compromising behaviors among adults and younger adolescents.[21]

Increasingly, studies are documenting the relationships between problem behaviors of many kinds and academic achievement.[22-28] Studies also show that self-concept/esteem is correlated with both problem behaviors and academic performance.[25,29-32] Data also suggest a relationship between problem behaviors and poor mental health (eg, affective disorders, anxiety disorders), especially in clinical samples,[33,34] but also in population samples.[26,27,35-44] On the positive side, psychological well-being has been reported as a mediator between learning of personal competence skills and reduced substance use.[45]

Though evidence for relationships among behaviors is strong, the direction of the relationships is often unclear. Does poor academic achievement lead to increased disruptive behavior, violence, and/or substance use, or vice versa? In one recent study using Monitoring the Future data,[23] it was found that, between grades 8 and 10, school misbehavior and poor performance predicted cigarette smoking, rather than the reverse. Another debate within the literature concerns self-esteem and its correlation to substance use. Some recent studies have found that low self-esteem is significantly correlated with tobacco use[46,47] and alcohol use,[48] whereas others have found no

Figure 1
A Structural Model Diagram Illustrating How All Kinds of Youth Behaviors Are Correlated, Cause Each Other in a Reciprocal Fashion, and Contribute to General Development of Eventual Success and Happiness



correlation with substance use.[49] Early studies of self-concept and academic success suggested that self-concept directly affected academic success,[50,51] whereas later studies suggested a bidirectional relationship between the two.[29,52-55] Other studies have found that academic achievement affects self-concept.[56] Low self-concept's association with behavioral problems is also inconclusive.[57,58]

Modern theories of behavioral development would suggest that these relationships are, in fact, bidirectional, with one causal direction being dominant at some developmental stages and the other direction at other developmental stages. For example, it is quite reasonable to expect initiation of any of the problem behaviors to be predicted by prior mental health or school performance, but for continued problem behavior to, in turn, influence future mental health or school performance. Thus, we consider all of the relationships among problem behaviors, mental health, healthy behaviors, and conventional social behaviors to be bidirectional. Furthermore, we consider positive development in all areas to be the primary determinants of a successful and happy life (Figure 1).

Conclusion and implications. Because all adolescent behaviors are interrelated, future prevention and health promotion programs should address all youth behavioral development in a comprehensive and coherent way.

Common Etiology

Thesis. All behaviors have common causes.

Empirical evidence. The empirical literature on predictors and causes of adolescent behaviors is vast.[28] In contrast to many other empirical literatures, there is an emerging agreement about the major predictors of youth behavior. In

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order to understand the mass of findings, reviewers have proposed various groupings; however, even among these there is an emerging commonality. Generally agreed-upon categories consist of individual (biological, personality, character traits, prior behaviors), social (including family, school, peers, and neighborhood) and broader social environmental influences (economic, political, religious, etc). Thus, reviews of the predictors of tobacco use,[59-61] substance use more generally,[62,63] violence,[17,64-66] sexual behavior,[67,68] and mental health[69] all propose similar categories of causes of these behaviors.

The more proximal the cause to the behavior, the more likely it is to be specific to a behavior. For example, attitudes toward substance use will be predictive of substance use, but less predictive of violence or mental health. More distal influences, on the other hand, are likely to have more generalizable effects. Thus, school/home environment and parental involvement are associated with various factors affecting children's mental and physical well-being. A positive school environment both reduces the risk of substance use and delinquency[28,70] and improves academic achievement.[28,71] Parental involvement is also very important to a child's overall behavior in school, motivation to learn, grades and test scores, and long term success.[72-75]

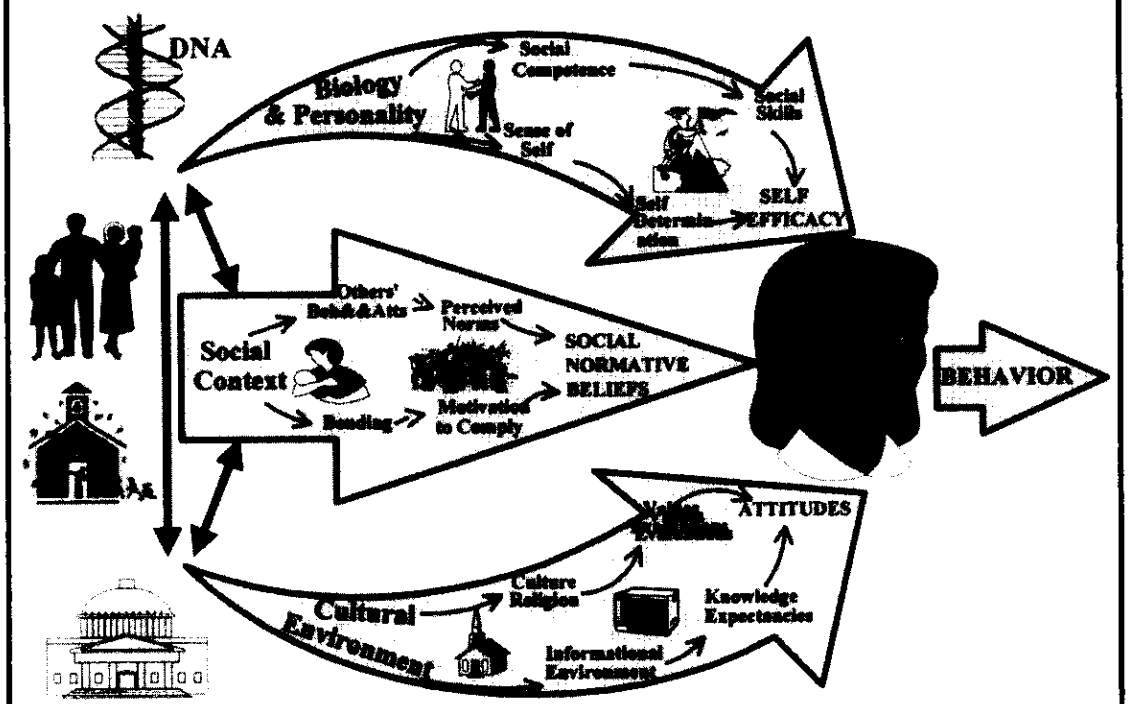
Some researchers have found that lower income, less educated parents are less involved in their child's school,[76,77] whereas others have found that SES does not impact parent involvement.[78] However, family structure does predict parent involvement; single parents are less likely to actively participate in their child's school. Parental school involvement is also affected by parenting style and enthusiasm.[79] The institutions of school and family should not be viewed separately; when teachers and parents interact more, students perform better in school,[79] but to increase parental involvement, a school's organizational structure and staff attitudes must be positive.[80,81]

Health-compromising behaviors seem to be a "patterned response" to disadvantaged social contexts.[19] Those in disadvantaged situations are less likely to "mature out" of problem behaviors as they approach adulthood than are those from more advantaged social contexts.[7,19] To the degree that poverty serves to impair general skills, poor children may grow up with compromised social and economic skills.[82] The lack of educational opportunities in earlier years may place children of poverty at additional disadvantage.[83] Effects of poverty on academic achievement and children's risk for school dropout are well documented.[84] African Americans drop out of high school at disproportionately high rates (47%),[85] finding higher education increasingly inaccessible.[86] Although African-Americans and Latinos currently compose the bottom of the educational and economic ladder, by the year 2000, they are expected to represent one third of all work-age youth.[85,87] Dropouts can expect a life of chronic unemployment or low-status, low-paying employment and disenfranchisement from society and its institutions.[88-90] The resulting depressed self-esteem, dissatisfaction, and alienation experienced by many dropouts can escalate to disordered, aggressive behaviors and a greater probability of crime.[91]

It is commonly accepted that levels of involvement in risk behaviors vary by age.[92-95] For example, risk behaviors are rare among preadolescents, peak in mid- or late adolescence, and decline in young adulthood. However, there are clear variations across behaviors in the age of peak behavior and the age and extent of decline. Some studies have also reported variations in the relationships between risk behaviors and demographic factors such as race/ethnicity and age.[96,97]

Theoretical support. Many theories of youth risky behaviors have been proposed over the years (Petriatis, Flay, and Miller[63] for an extensive review). Some of these theories are very focused on proximal cognitive-affective factors such as the Theory of Reasoned Action[98] and the Theory Planned Behavior.[99] Many theories focus on social factors such as the social learning theories of Akers[100] and Bandura[101] and broader versions of them

Figure 2
Pictorial Representation of the Theory of Triadic Influence
(Adapted from Flay and Petraitis, 1994)

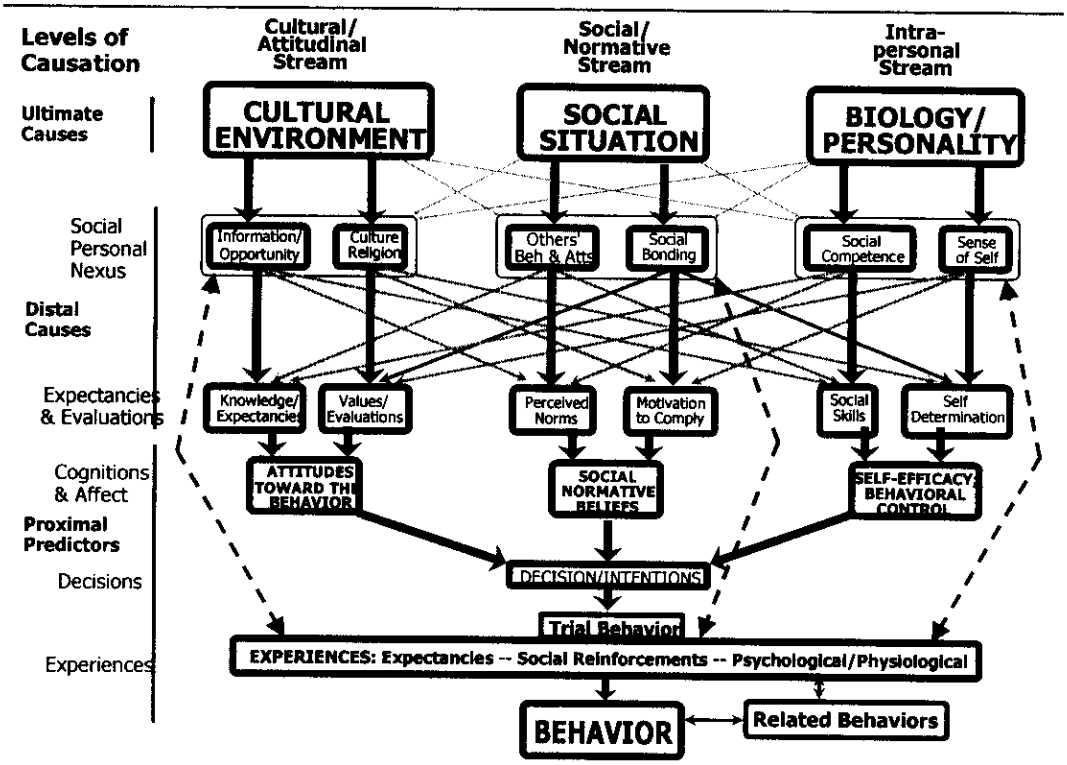


such as social cognitive theory,[102] the multistage social learning model,[103] social control theory,[6] the social development model,[104] and the social ecology model.[105] Other theories have attempted to be more comprehensive. Some of these such as the domain model of Huba and Bentler[106,107] are quite atheoretical, attempting just to accommodate the many predictors of behavior. Some are more theoretical, the most influential example being Jessor and Jessor's[8] problem behavior theory.

If research on youth problem and positive behavior is to advance, our theories need to be integrated with each other. Fortunately, a rapprochement among multivariate theories is possible because they are largely complementary, and where one theory is weak, another is usually strong. For instance, bonding theories can describe why adolescents become involved with deviant peers, social learning theories can describe how involvement with deviant peers affects an adolescent's beliefs about a particular behavior, and the cognitive theories describe how attitudes toward the specific behavior can affect the likelihood of the behavior. The one theory that comes closest to integrating all of the above theories, and that comprehensively accounts for the multiple empirical findings reviewed above, is the theory of triadic influence.[108-111]

We reviewed existing theories and showed how these theories could be arranged into a 2-dimensional matrix.[63] The first dimension represents 3 types of influence: (a) cultural/attitudinal factors (eg, media depictions of behavior), (b) interpersonal factors (eg parental warmth), and (c) intrapersonal factors (eg, low self-concept). The second dimension represents different levels of influence: (a) ultimate factors that, although beyond

Figure 3
Formal Representation of the Theory of Triadic Influence (Adapted from Flay, 1999)

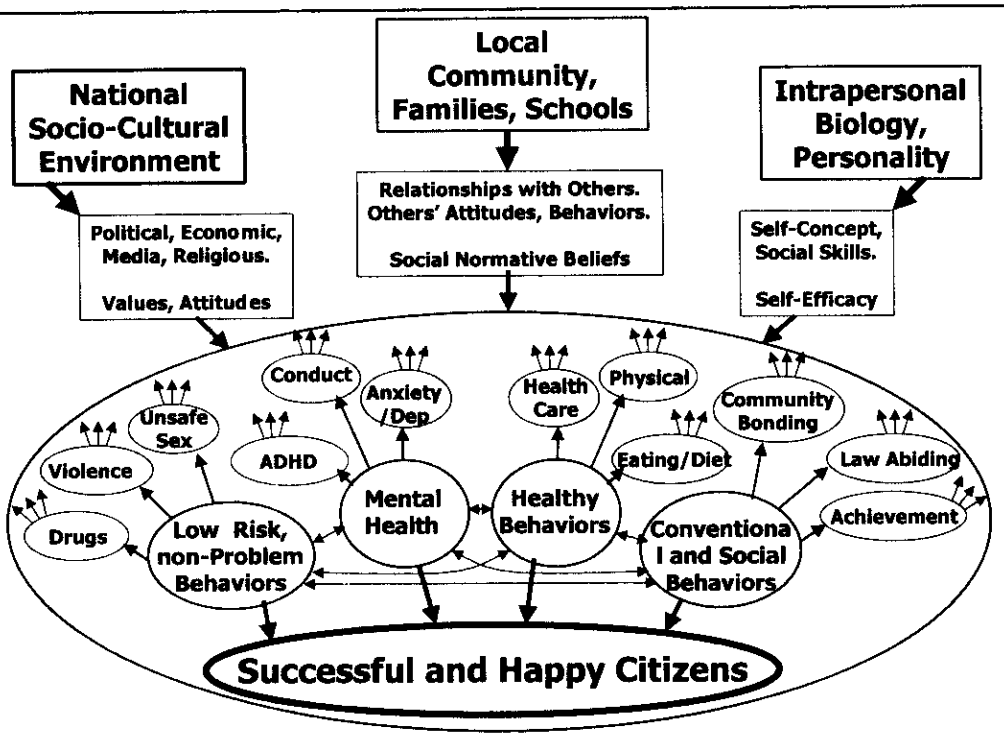


the easy control of adolescents, indirectly put adolescents at risk for problem behavior; (b) distal factors that are one or more steps from causing problem behavior; and (c) proximal factors that affect problem behavior fairly directly. We then used this matrix to develop the theory of triadic influence (TTI). TTI is depicted in Figures 2 and 3 and described in detail elsewhere.[108]

In its simplest form, TTI asserts that the various causes of problem behavior fall into 3 distinct "streams" of influence: sociocultural factors that affect attitudes toward problem behavior, interpersonal factors that affect the social pressure adolescents feel to engage in problem behavior, and intrapersonal factors that affect problem behavior-related self-efficacy or related avoidance skills (Figure 2). Within each stream of influence, there are 2 substreams, representing control/affective (eg, values/evaluations, bonding/-motivation to comply) and identity/cognitive (eg, expectancies, normative beliefs, social skills) elements. TTI then asserts that each stream flows through 7 tiers of influence, ranging from a few proximal variables that affect problem behavior fairly directly (eg, smoking-related intentions) to a variety of more distal variables that might affect problem behavior only indirectly (eg parental divorce). Consistent with cognitive social psychologists, we propose that all influences are mediated by the cognitive construct of intentions.

We further posit that each instance of a behavior has a feedback influence on its predictors. Thus, an adolescent's experimentation with smoking might change her relationships with peers and family, her own perceptions of the physiological effects of smoking, and her "knowledge" about the personal and social effects of use. These changes might occur

Figure 4
Linking the Theory of Triadic Influence and the Structural Equation Model Representation of Correlated Behaviors Demonstrates How All Behaviors Have Many of the Same Causes



toward the top of streams of influence and then filter down just as original causes did. However, they might also occur at the proximal level — that is, smoking alters one's expectancies about and attitudes toward smoking, one's expectations of reinforcement from others, and one's self-efficacy for refusing offers to smoke.

In its more complete form (Figure 3), TTI is the most comprehensive model of behavior to date, in that it provides a single, unifying framework that organizes the constructs from many other theories, including theories of social control and social bonding,[6] social development,[104] peer clustering,[112] personality,[113] cognitive-affective predictors,[98,99] social/cognitive learning,[100-102] biological vulnerability,[114] and other integrative theories.[8,106,107,115,116] Further, TTI also provides dozens of testable hypotheses about causal processes, including mediation, moderation, and reciprocal effects. Thus, TTI provides the framework for generating hypotheses and integrating results concerning direct and indirect effects, interactions among predictors, and feedback effects that represent the immediate and long-term consequences of prior behavior, including ongoing changes in problem behavior and its predictors. Indeed, the theory can be applied to all of the behaviors under consideration in this paper (Figure 4). Note, however, that the more distal/ultimate the predictors, the more commonality they have with the multiple behaviors, and the more proximal the predictors, the more specific to the behavior they must be.[108]

Conclusion and implications. All behaviors have the same causes, especially at the distal/ultimate levels. Social influences — the social ecology[117] — are particularly important during adolescence. These include the influences of families, schools, peers, and neighborhoods/com-

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munities. All are amenable to prevention and health promotion efforts. Thus, future prevention and health promotion programs need to involve whole schools, families, and communities in an integrated and coherent way. Classroom curriculum can teach content and social skills. To be most effective, curricula must be schoolwide, encompassing every grade level in a carefully scoped and sequenced (developmentally appropriate) way. Cultural appropriateness may also be important.[118,119] Schoolwide climate change can provide a safe learning environment and provide a common language and consistent reinforcement of positive behaviors, as can integrated family and community programs. Family programs can also teach improved parenting skills in a way consistent with a coherent program, and community components can strengthen school and community links and provide opportunities for students to observe and engage in community service.

Approaches To Prevention

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Evidence of effectiveness for multiple behaviors. Over the years, schools have adopted and implemented too many prevention programs without solid evidence of their effectiveness.[2,120] Of the minority that have been evaluated, many did not measure or failed to demonstrate behavioral change, either immediately or over the longer term. Further, very few of the evaluations were conducted with experimental designs or appropriate statistical analysis strategies.[121]

However, multiple reviews and commentaries during recent years indicate that prevention science is advancing our knowledge of what is efficacious for the prevention of problem behaviors. As early as 1985, I found that social influences programs had promise for the prevention of smoking.[122,123] Subsequent research and reviews have further established this.[124-127] For example, Tobler and Stratton[126] found in their meta-analysis of drug-prevention programs that interactive programs with 18+ program hours that included skills development and changing of normative beliefs are effective in decreasing student's substance use. Reviewers of the violence prevention literature[128-130] have come to similar conclusions. Unfortunately, some programs having positive effects on violence and other antisocial behavior have reported negative effects on achievement.[128] Such a pattern of results suggests that we need to be very careful to establish the effects of interventions on both behavior and achievement. Kirby and others have repeatedly come to similar conclusions in careful reviews of programs designed to prevent unsafe sexual behaviors.[49,67,68,120,131-134] The list of conditions for effective sex education programs provided by Kirby in this issue[68] are applicable to all kinds of prevention and promotion programs,[28] including character education,[3,135,136] violence prevention,[128-130] and mental health promotion[69,137] programs.

However, emerging programs, even those meeting all of the above conditions, still appear to be only somewhat effective, and not consistently so. In addition, the effects decay rather quickly. I believe that this is because of 5 major limitations that remain. First, most programs are too brief, too scattered, and too infrequent. Most programs are specific to one particular behavior and do not integrate related behaviors and risks, thus reducing the potential for meaningful behavior change. Most programs still consist of a few sessions in only one grade without subsequent follow-up. All learning requires review, reinforcement, and extension (generalization) to persist. Second, many programs target just the individual students. They do not address the cultural environment or social context (family and school) in which the students live. Failure to alter key environments that contribute to individual behavior weakens, or may even negate, classroom program effects. Effective programs, even those that are

classroom focused, must include ways of involving families and communities. Third, many programs have not been developmentally appropriate. Programs need to start in elementary school, because the onset of problem behaviors starts before the end of elementary school. Programs need to be designed to specifically target the biological, cognitive, and social relational issues of this developmental period.[138] Fourth, most programs do not recognize the impact that trauma and traumatic stress have on youth risk-taking behavior or how such experiences are associated with violence,[139] drug use,[140] and inappropriate sexual behavior. Teachers are in a good position to identify traumatized youth, as the symptoms may manifest themselves in learning difficulties or behavioral problems. Therefore, it is important for teachers, through inservices, to have a basic understanding of the symptoms of the traumatic stress that can result from witnessing and victimization and for schools to have procedures and coordinated social services for internal and/or external referrals. Finally, although witnessing violence and being victimized can have serious negative consequences, not all children are equally affected by their experiences with violence. Just as there are risk factors that lead to increased negative outcomes, there are also protective factors such as individual, familial, and social or external factors that lessen the chances of maladaptive outcomes in the presence of the risk.[141-142] Effective programs must increase student involvement with communal institutions of family, school and peers.

Programs need to meet all of the above conditions plus some others.[10,87,145] They must be (a) comprehensive — covering multiple health-compromising and health-enhancing (positive) behaviors; (b) developmentally appropriate; (c) longitudinal — spanning several grades, with carefully designed review, reinforcement, and extension; (d) culturally sensitive;[118,119] and (e) school and classroom focused, though not limited to the school. They should also (f) use peers, where appropriate, to demonstrate skills and alter norms; (g) include proper training of teachers and other school personnel involved in delivery; (h) involve parents actively in homework exercises and other activities; (i) be designed with input from students, parents, school leaders, and community leaders; (j) include school improvement and reorganization components; and (k) include ongoing evaluation at all stages of development, implementation, and institutionalization.

There is already a trend toward more comprehensive and multimodal programs that address multiple behaviors and that involve families and community.

Evidence from selected programs with effects for multiple behaviors and academic achievement. There is already a trend toward more comprehensive and multimodal programs that address multiple behaviors and that involve families and community. These programs are generally more effective.[128] This appears to be contrary to early views of behavior change. Relying on theories of behavior that considered only the more proximal predictors, researchers often claimed that programs had to target individual behaviors to be effective. The assumption was that programs that targeted multiple behaviors would be less effective because teaching of skills had to be specific to the behaviors being prevented. However, with recognition that many of the social skills being taught were also relevant to multiple behaviors, researchers started to address multiple behaviors. I provide a selective review of such programs next.

Several research groups have reported comprehensive schoolwide programs that both reduce multiple problem behaviors and enhance achievement (I have reviewed some of these in more detail elsewhere.[146]) In the earliest of such reports,[147] a social-emotional learning program both reduced problem behaviors and enhanced achievement. An early childhood program prevented both later learning problems and serious antisocial behavior.[148] Durlak and Wells[137] found that some mental health programs that reduced subsequent maladaptation also improved school performance. Kellam and colleagues[149,150] found

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that 2 interventions designed to diminish aggressive and disruptive behavior and poor academic achievement among students in the first and second grades reduced the incidence of smoking initiation by boys through age 14. Results from the Aban Aya Youth Project reported by myself and my colleagues[151] confirm that a comprehensive program that is culturally specific (African American) and developmentally appropriate, long-lasting (approximately 20 scoped and sequenced sessions per grade for grades 5-8), and involves parents and community can reduce multiple problem behaviors — substance use (tobacco, alcohol, and marijuana), violence, and unsafe sexual behavior. However, these effects occurred only for males, and not for females. A version of the program that included higher parent and community involvement was more effective than a version that was classroom based only.

The Child Development Project was designed to change the learning environment of the school by modifying teacher/classroom practices, changing classroom and whole school policies, and fostering connections between the school and home. Tested in a quasi-experimental design (12 schools on both treatment and control conditions), intervention students in the 5 program schools where program implementation was high were less likely than students in matched comparison schools to use alcohol or marijuana, carry a weapon, steal a car, skip school, or threaten another with harm up to 2 years after.[152,153] Poor implementation and nonsignificant or negative effects in the other 7 program schools,[154] raises questions about the appropriateness of the analyses reported above, as well as the level of adoption of the program and, therefore, its replicability and long-term viability. These issues are of major concern given the reliance on the training-the-trainer model.

The Seattle Social Development Group has reported positive effects on both behavior and achievement as a result of their multifaceted intervention that included training of teachers in classroom management, parent training, and a classroom intervention in grades 1 through 6. The team has reported program effects on behavior, school bonding, and achievement for the complete sample,[155] for a high-risk subsample,[2] and for a middle-school subsample.[156] Six years after the end of the intervention, when the students were nearing the end of high school, there were strong positive effects on substance use and other behaviors, including academic achievement. Unfortunately, a complex, and ever-changing design makes it difficult to interpret the reported results with confidence.[146]

In 3 small studies with mixed results, Gottfredson and her colleagues evaluated 3 programs designed to improve teaching methods and to change the whole school experience for students. Project PATHE produced improvements in drug use but declines in achievement.[157] Project STATUS, used innovative teaching methods, encouraged active student participation, and included field experiences, guest speakers, role-play exercises and simulations, and independent and small-group research projects to produce positive changes in both behavior and achievement in both middle school and high school students in a small quasi-experimental study.[158] The 5-year Multimodal School-Based Prevention Demonstration was designed to change the learning environment of schools by initiating schoolwide changes in policies and practices and by delivering a social competency curriculum. The main finding was that the program was not implemented as well as anticipated[159] and therefore did not work.

The Positive Action Program,[160] first developed in 1977 by Allred, and revised since then as a result of process and monitoring evaluations, is grounded in a broad theory of self-concept.[31,50,161] This theory posits that people determine their self-concepts by what they do; that actions, more than thoughts or feelings, determine self-concept; and that making

positive and healthy behavioral choices results in feelings of self-worth. The program teaches children what actions are positive, that they feel good when they do positive actions, and that they then have more positive thoughts and future actions. The recent development of Positive Psychology,[162] particularly recent results and theoretical developments reported by Fredrickson,[163] fully support this notion. Fredrickson reports that when people feel positive, they subsequently have more positive thoughts and engage in more positive behavior. By explicitly linking thoughts, feelings, and actions, the program is also believed to enhance the development and integration of affective and cognitive brain functions.[164] PA is also consistent with educational theories of brain development,[165] higher-level thinking skills,[166] and multiple intelligences.[167,168] The program also trains teachers and parents to identify and reinforce positive feelings, thoughts, and actions by students, leading to continual reinforcement of positive actions and enhanced student bonding with parents and school, consistent with multiple social learning theories[101-103] and other current approaches to social development, health promotion, and prevention of unhealthy behaviors.[63,106,110,169] The Positive Action program consists of integrated classroom curriculum materials for K-12, school preparation and teacher training, schoolwide climate change, a family program with student-parent interaction, and community components. It is a systematic, comprehensive program that uses proven strategies and methods such as active learning, positive classroom management, a detailed curriculum with almost daily lessons, a schoolwide climate program, parent support and involvement, and community involvement.

Data from various comparison group designs involving about 100 elementary schools delivering the Positive Action program demonstrate consistent positive effects of the program on student self-concept (using various measures), school performance (attendance, achievement), school behavior (discipline, suspensions), and other behavior (crime, violence, substance use).[1,170] These findings may be summarized as follows: In 4 small studies, self-concept was improved by about 30%. Across only the larger and better controlled studies achievement was improved by 12 to 52%, Mean Effect Size (MES)=.54; absenteeism was decreased by 6 to 8%, MES=.15; general discipline and suspension problems were decreased by 21 to 88%, MES=1.1; and violence and substance use were decreased by 26 to 56%, MES=1.26. For aggregated data (as opposed to individual level data), these may be considered as large or very large effect sizes.[171] It should also be noted that for universal interventions, effects traditionally thought to be small can actually have large public health benefits; changing a relatively small proportion of people or moving everyone a small amount can lead to large public health effects.[172,173] These results for the Positive Action program were obtained from all sorts of schools (high and low minority representation, high and low mobility rates, high and low poverty levels), in different states, at different times (late 1970s through 1999). Several thousand other schools have reported similar results of PA from individual case studies (simple pretest-posttest comparisons). All effects were equally positive or better in schools with high versus low minority representation and different levels of poverty. This pattern of results is very compelling, because most other evaluated programs do not work as well in schools with high proportions of minority students or students living in poverty. Behavioral effects were even better in schools with high rates of student turnover (mobility). This suggests that the program changes the behavior of such a high proportion of stable students and alters the school environment so much that incoming students conform to the acceptable positive behavioral patterns that are now the school norm. PA is one of very few programs to date to report strong effects on both achievement and multiple problem behaviors from many diverse types of schools, effects that are both statistically and practically significant. How can the

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Positive Action program be so effective? I believe that the developer's broad experiences, teaching in both high and elementary schools and in school administration, all before and during program development, and in completing a PhD while developing and evaluating the program all provided rich insights for the development of PA. Most developers, including researchers, do not have all of these experiences. PA seems to incorporate the best that is known from both practice and research.

Conclusion. Comprehensive, long-term, schoolwide interventions that involve families and communities, but are not too difficult to implement, can successfully reduce multiple problem/risky, unhealthy, and antisocial behaviors, and increase multiple positive, healthy, and prosocial behaviors, improve mental health and self-concept, and enhance academic performance.

SUMMARY

In this paper, I have provided evidence that multiple positive and negative behaviors are highly correlated and are predictive of each other. One conclusion from this is that youth behavioral development should be addressed by a comprehensive, coherent, and integrated approach, rather that the disjointed approaches to prevention and promotion taken by education today. We must link problem behavior prevention, health promotion, mental health development, and character development, not only with each other, but also with academic achievement.

I also argued that all forms of youth behavior have many of the same causes. This is especially true of causes at the distal and ultimate levels. A person's genetic predispositions, family social circumstances, and cultural background/learning environment all have profound influences on the development of his behavioral patterns, directly, in interaction with each other, and indirectly through other variables. Much empirical etiological data and many theories of behavioral development support this. The clear conclusion from this knowledge is that prevention/promotion programs that address those distal and ultimate influences that are amenable to change should affect multiple behaviors and outcomes.

I presented preliminary evidence from several examples that a comprehensive approach to prevention/promotion can effectively prevent multiple problem behaviors and increase multiple positive behaviors and outcomes at the same time. Curricula can address multiple behaviors effectively. Schools that actively respond to problem behaviors, and cultivate a positive, healthy environment can have lasting effects on students' long-term behaviors in adolescence and beyond.[174] Providing an environment that is prochild and that responds to a child's needs will increase a child's behavior and academic performance.[175]

My analysis also suggests that programs that also alter social contexts such as school climate, families, and communities can have larger and longer-lasting effects on a broader array of behaviors. Findings from the sets of studies reviewed previously in impressive meta-analystic reviews,[28,137] together with those additional studies reviewed here, suggest that comprehensive programs that involve curriculum, teacher training, schoolwide climate change, and involvement of parents and community (for example, the Positive Action program) can affect multiple outcomes, including academic achievement. Though such programs hold great promise for producing more young adults headed into a productive and happy life, the mixed results from the studies reviewed suggest that we have much more work to do before we can develop such programs with confidence of their effectiveness. The need for such programs is urgent in our schools, homes, and society today, as the public and politicians demand more accountability, not only for enhanced student learning, but also for improved student behavior. The ultimate success and happiness of future generations depends on our being able to develop comprehensive, coherent, and integrated prevention and promotion programs that

are effective across multiple domains.

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