Adolescent mental health: a review of preventive interventions

Craig Bushong, MD
John Coverdale, MD
John Battaglia, MD

Over the past 30 years, adolescents represent the only age group in the United States whose health status has not improved significantly. In this population, major health problems that are becoming increasingly important in regard to preventive intervention include substance abuse, depression, teenage pregnancy, and AIDS. Research in adolescent mental health during the past decade has focused on both the etiology and the prevention of problem behaviors. We review the development and application of various preventive intervention approaches in the field of adolescent mental health and discuss implications for future directions.

Drs Bushong and Coverdale, Department of Psychiatry, Baylor College of Medicine, Houston. Dr Battaglia, Department of Psychiatry, The University of Texas Southwestern Medical Center, Dallas. Send reprint requests to Dr Bushong, 4550 Post Oak Place #320, Houston, TX 77027.

Over the past 30 years, adolescents constitute the only population in the United States whose health status has not improved (1). Increasingly, adolescent life-style and risk-taking behaviors are influencing the major morbidities of youth, which include substance abuse, depression, teenage pregnancy, and other major health problems. Causes of mortality have also changed dramatically in the past 3 decades. Violent death has replaced communicable disease as the primary cause of juvenile mortality, with more than 75% of adolescent deaths now caused by accidents, suicide, and homicide (1,2).

The emphasis in adolescent mental health research over the past decade has focused on two general areas of study (3). The first, etiological research, includes a substantial literature and attempts to identify factors that may be important determinants of future "problem behaviors" such as substance use, teenage pregnancy, delinquency, and psychiatric disturbance. In addition to epidemiological data, theories on stages of adolescent development, behavioral and environmental change, and social learning have gained importance in creating a multidimensional developmental context in which to study adolescent behavior (4).

The second area of research, preventive intervention, focuses on the development and testing of intervention strategies to prevent the onset of problem behaviors. We review here the development and application of various approaches to preventive intervention in the field of adolescent mental health and discuss implications for future directions.

Adolescent mental health problems and concerns

The literature on adolescent development emphasizes intrapsychic and interpersonal developmental tasks, including the consolidation of identity formation, emancipation from parents and families, and developing a sense of competence and a capacity for intimacy (5). In 1958, Anna Freud wrote that the turmoil of adolescence was "no more than the external indication that . . . internal adjustments are in progress" (6). The new adolescent culture, however, has superimposed external tasks of development that were not present 30 years ago. In an era of increasing social and economic opportunity, many concerns about adolescent mental health are becoming the focus of increasing investigation. It seems paradoxical that during an era that heralds unprecedented prosperity, millions of adolescents continue to use psychoactive drugs to alter their feelings and escape their environment (5). Recent findings regarding substance use include the following:

- More than 30% of sixth graders report getting drunk in the past year (7).
- Two thirds of American youth experiment with an illicit drug before finishing high school (8).
- Among high school seniors, 5% drink daily and almost 40% have had five or more drinks in a row at least once in the past 2 weeks (9).
- Among seniors, 5% smoke marijuana daily and 40% have tried some illicit drug other than marijuana; about 7% have used cocaine at least once in the past month (10).
- The incidence of physical abuse and neglect is increased in the offspring of teenage parents who abuse alcohol and drugs (11).

Other adolescent health and mental health problems are receiving greater attention and study. A recent report estimates that as many as 15% of high school students suffer from clinical depression syndromes (12). This percentage does not include those adolescents with depressive disorders that might be associated with delinquency, substance abuse, sexual acting out, or other problem behaviors (13). Regarding teenage pregnancy, approximately 700,000 unmarried females aged 19 years or younger in the United States become pregnant each year; 85% of these pregnancies are unintended (14). In addition, the frequency of suicide attempts and completions has increased significantly; in the past 25 years, suicides by 15- to 24-year-old women and men has increased twofold and threefold, respectively (15). There were about 5,000 completed suicides in 1989, and the number of deaths by suicide is second only to accidental deaths among older adolescents (16).

While many professionals may be surprised to learn that psychiatric and behavioral problems have replaced infectious disease as the major cause of morbidity and mortality of adolescents in the United States, adolescents are apparently less surprised. When teenagers are asked about their own health needs and concerns, what emerges is their primary concern in the areas of psychological and social adjustment (17). Several studies find that psychological and social problems account for most adolescent health concerns (18–20). Depression, nervousness, and stress are recurrent themes that accompany other typical adolescent health concerns such as weight and dental problems, acne, and sexually transmitted disease (20).

Although adolescents are willing to acknowledge their health and personal concerns, they are less likely to seek help for these concerns. Instead, they tend to avoid health-care providers for help with psychological issues (21). Fear that confidentiality might not be maintained, or the perception that health-care professionals are unable to help with mental health problems, may partially explain adolescents' reluctance to seek help for emotional issues (21). Evidence shows that professionals underestimate the level of responsibility that most students feel for their health. Levenson et al found that adolescents attributed more importance to their health than physicians, school nurses, or teachers predicted (22). While risk-taking behaviors may be a normal part of adolescent development, so too is the sense of responsibility for personal health that most teenagers assume.

PREVENTION INTERVENTION RESEARCH

While numerous preventive programs are being developed and implemented around the nation to educate the public on important mental health concerns, until recently research on the impact of many educational programs and preventive efforts has been relatively sparse.

Until the past decade, traditional preventive programs often relied on intuitive notions regarding causation and prevention of problem behaviors. Standard preventive programs in the past used primarily approaches based on knowledge or on interpersonal education. Knowledge-based programs are developed on the implicit assumption that the way to change adolescents' attitudes and behavior is by increasing their factual knowledge (23). Interpersonal education or "affective" approaches focus on strategies to "enhance self-esteem and responsible decision-making as well as to enrich the personal and social development of students" (24). A review of the literature, however, presents interesting findings: no clear-cut relationship exists between attitudes and knowledge and subsequent behavior (25). Indeed, several studies have clearly shown these approaches are ineffective in changing behavior (26–28).

ALCOHOL AND DRUG PREVENTION

Alcohol and drug abuse is the area of preventive education that receives the most funding. The National Institute on Alcohol Abuse and Alcoholism reviewed traditional approaches to alcohol and drug prevention in 1986 and concluded the following:

> ". . . Results . . . have been mixed and there is considerable continuing debate about their effectiveness. Each has been shown to change knowledge and attitudes to some degree, (but) none has been shown to change behavior positively and consistently and in fact, some of the educational approaches seem to have stimulated use of alcohol and other drugs" (7).

One popular preventive program that has spent millions of dollars over the past several years without systematic investigation of effectiveness is the well-publicized "Just Say No" campaign for drug prevention. Data suggest that programs that use a variety of "scare tactics" are often unsuccessful in influencing behavior (29). This type of approach by social

influence may not be highly effective because, as research shows, while most students have sufficient skills to "say no," they lack sufficient motivation to do so (30). However, exaggerated claims about harmful drug effects are being replaced increasingly by more balanced reports describing more readily observable consequences such as poor school performance, decreased interest in extracurricular activities, and impaired interpersonal relationships (31).

SUICIDE PREVENTION

A 1988 national survey of school-based programs to prevent adolescent suicide indicated that these programs "adopt a 'universal' strategy, ie, they are directed to all teenagers regardless of individual susceptibilities, experience, or vulnerability status" (32). The impact of these programs appears limited by their focus on the general adolescent population (their combined outreach is less than 1% of the population aged 15 to 19 years) and there is no systematic research to show "that the programs are either effective, safe or necessary" (32). A recent study suggests in fact, that programs for suicide prevention may produce some unwanted effects. Previous suicide attempters, for example, were significantly more likely than nonattempters to indicate that talking about suicide in the classroom "makes some kids more likely to try to kill themselves" (33).

SEX EDUCATION

An extensive review of school-based programs for sex education found that they had little or no effects on sexual activity, contraception, or teenage pregnancy (34). Although the studies reviewed had significant limitations, the risk of "widespread implementation of a health education concept based on preconceived expectations, prior to adequate evaluation" was emphasized as an important consideration in preventive strategies (34).

In a 1988 study involving seventh-grade and tenth-grade students in Providence, RI, correlations between knowledge about AIDS and behavioral attitudes were minimal (35). For example, although 91% of students knew they could not get AIDS by touching someone, 55% indicated they would not "take a chance by touching someone with AIDS" (35). Another example of this inconsistency in sex education concerns contraception. An increase in contraceptive knowledge, coupled with a positive change in attitude toward contraceptive use, does not necessarily yield significant changes in contraceptive behavior (36,37). Sexuality courses have been found to increase students' tolerance toward the sexual practices of others, but these courses have no consistent effect on students' own sexual and personal value systems (38).

In summary, most preventive research suggests that approaches through knowledge dissemination and interpersonal education do not consistently and significantly correlate with subsequent attitudes and behavior. Therefore, we are not surprised that those programs oriented toward increasing knowledge or interpersonal education have been, at best, minimally successful in reducing problematic behavior.

EFFECTIVE PREVENTION-CENTERED APPROACHES

In recent years, research on prevention has emphasized the development of training in behavioral skills that focuses on psychosocial factors contributing to problem behaviors. Jessor originally introduced a model that conceptualizes problem behavior such as substance abuse as a socially learned, functional, and purposive behavior resulting from the interaction of social and personal factors (39). A developmental progression of substance use (from tobacco to alcohol to marijuana and other substances) has been described that, based on common underlying determinants, links substance abuse to other problem behaviors such as premature sexual activity and delinquency (40–42). Programs for behavioral skills using approaches either through social influence or through training in personal and social skills have received the most recent attention in targeting the many factors underlying various forms of problem behaviors.

Approaches through social influence, developed primarily from the work of Evans and colleagues (43), are based on the assumption that students can be "inoculated" against social influences to engage in problem behavior. This approach involves not only making students aware of premorbid social influences but teaching them specific strategies (such as refusal skills) to resist those influences (24,44). While most current funding for research in prevention is given for this approach, and while the original model has been expanded to include the use of peer leaders together with role playing and social reinforcement techniques (24), this approach has proven effective primarily in delaying the onset of cigarette smoking in junior high school students (the primary target of these approaches). Thus far, the approach through social influence seems to have limited efficacy in significantly reducing substance abuse (30), and we have little data on the

impact of this approach on other areas of problem behavior.

Approaches through training in personal and social skills combine social competence and cognitive skills development and teach adolescents skills both for specific problems and for general life. One model curriculum for prevention, developed by Botvin et al and entitled "Life Skills Training," includes components that teach short- and long-term consequences of drug use, assertiveness and peer resistance techniques, decision-making strategies that promote independent thinking, anxiety management, and skills for increasing self-esteem and self-control (43). A modification of this curriculum developed by Forman and Linney includes a manual for parents and a checklist for identifying high-risk behavior (45).

Research indicates that these approaches through training in behavioral skills can reduce substance abuse (29,43) and reduce the occurrence of unintended pregnancies among unmarried adolescents (14). Recent approaches to prevention minimize reliance on disseminating knowledge and place more emphasis on developing decision-making skills, training in assertiveness, and heightening self-esteem (46). Instead of arousing fear by using intimidating and frightening facts regarding long-term health outcomes, these programs tend to highlight immediate social and physiological consequences of problem behavior while seeking to improve short-term social skills.

Many of these programs employ peer leaders who are trained to teach and model social and behavioral skills that enable students to, for example, identify and resist the various pressures to use tobacco presented by peers, parents, and the advertising media (46). Peer group approaches may also be effective, particularly by addressing adolescent grandiose egocentrism; ie, the belief in immunity from negative consequences resulting from one's own behavior (47). Preventive intervention programs are also being designed to help adolescents understand the functional meanings of problem behaviors — eg, seeing drug use as a coping mechanism for dealing with boredom, or as a strategy to reduce stress, or as a way of gaining admission to a peer group by signalling acceptance of a common unconventional behavior (46).

A useful theoretical model of health education, the PRECEDE planning model, includes three categories of factors that can influence whether individuals adopt and practice useful health behaviors (48). The first category, *predisposing factors*, includes knowledge, beliefs, attitudes, and some demographic variables. The second category, *enabling factors*, includes the accessibility of health resources and the community's commitment to health. The third category, *reinforcing factors*, includes effects of family, peers, teachers, and health providers. A program of intervention may have the best probability of influencing behavior if factors in all three categories are considered and addressed.

IMPLICATIONS FOR FUTURE INTERVENTIONS AND RESEARCH

As research improves in identifying the important components of programs considered to be effective, future interventions may benefit from the following recommendations:

First, schools can play an important role in promoting positive attitudes toward mental health. Across the country, schools are becoming increasingly involved in issues and activities that were once handled by the family. The historical development of society's tendency to make school personnel assume family functions and solve social problems that nobody else has been able to solve has been well described (49, 50). To date, the most effective approaches to school-based prevention appear to be the previously described training in behavioral skills (14,44,45) and the more recent comprehensive change in the school climate (51). This latter approach involves coordinating various projects designed to improve school climate as a way of reducing problem behaviors, and results thus far are extremely encouraging. This unique approach comprises faculty retreats, courses in life skills, school pride days, teen talk lines, and after-school activities (29).

These school-based approaches appear to be most effective when initiated in early adolescent years, particularly the years marking transition to middle or junior high school (52). Programs may have the best chance of significant and sustained effects if they are intensive and extend beyond a traditional brief (ie, 1 to 8 weeks) interval. Also important to consider in designing programs for intervention are demographic variables such as age, gender, culture, and ethnic background. Furthermore, the effectiveness of school-based programs depends on consistent involvement and support of other social and government institutions. The future of these programs is promising only in the context of consistent government policy that includes funding for curriculum development, implementation, evaluation, and maintenance (50).

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Second, coordination of preventive efforts between school, community agencies and resources, and the media appears to be an effective model for intervention (24,52,53). The School/Community Program for Sexual Risk Reduction Among Teens (14) is one example of a comprehensive school/community intervention. This program targeted children enrolled in the public school system and included parents, teachers, community leaders, and church representatives. Evaluation of the program's results indicated a dramatic decrease in the rate of adolescent pregnancy. In addition, honest, objective, and credible presenters of the program are better received by adolescents than those who are distant, aloof, or appear rushed (54). We have also questioned whether the participation of young professionals who serve as role models may also facilitate successful outcomes (55).

Third, environmental influences outside of school that contribute to problem behaviors in adolescents need continued emphasis in prevention. Family-focused interventions (including parent training approaches that teach parents strategies to enhance compliant behavior, training in family skills, family therapy, and family self-help groups) are becoming increasingly important to consider for prevention of problem behaviors (30,56,57). The targeting of high-risk adolescents is also a promising approach to prevention that requires further investigation (53,58,59).

Finally, mental health professionals have a responsibility to provide research in the area of preventive mental health because only with such research can we learn what is helpful and effective in advancing the cause of prevention and treatment in mental health. Researchers from the Rand Corporation published a 1984 report that stated, "Our most optimistic conclusions are related to prevention — not because past . . . prevention programs have proven eminently successful, which they have not, but because we believe we know why past approaches have failed" (60). Program rationale, specification of observable and measurable program objectives, and detailed description of program evaluation, monitoring, and follow-up data should be a priority in documenting "the achievement of intended outcomes . . . [with a] defined, replicable set of procedures that [can] be adopted by practitioners" (59).

CONCLUSIONS

The field of prevention has become a burgeoning area of practice and research. Programs for prevention continue to need careful investigation into effective design and implementation. Future implementation of programs should be guided by an appreciation of those approaches to intervention that appear most effective in producing behavioral change, including intensive training in behavioral skills and comprehensive programs in school/community intervention. The effectiveness of these programs depends on consistent social and governmental support. The hope for the future is that concepts and efforts for prevention will continue to increase in sophistication and that replication of effective programs will become an essential ingredient in preventing problem behavior in adolescents.

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