

Coverage of Adolescent Substance Use Prevention in State Frameworks for Health Education

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Wyrick, D.L., Wyrick, C.H., Bibeau, D.L., Fearnow-Kenney, M.D. (2001). Coverage of adolescent substance use prevention in state frameworks for health education. *Journal of School Health*, 71, 437-442.

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Abstract:

Ten secondary health education state curriculum frameworks were reviewed for their inclusion of 12 mediators commonly used to prevent adolescent substance use. Specific aims of the investigation were: a) to identify the extent to which the 12 mediators were found in each framework; and b) to identify those frameworks that included Alcohol, Tobacco, and Other Drugs (ATOD) sections and determine to what extent the 12 mediators were found in those sections. A panel of three researchers independently reviewed each framework. Beliefs about consequences, decision-making skills, and stress management skills were identified most often while commitment, lifestyle incongruence, and normative beliefs were identified least often. Among states that included ATOD sections, beliefs about consequences and resistance skills were the most commonly identified mediators. Commitment, goal setting, and normative beliefs were not identified in any ATOD sections. Research in prevention and implications for health education are discussed.

Article:

During the past two decades disturbing health trends among the nation's adolescents have emerged that pose serious threats to their future health and welfare. The Centers for Disease Control and Prevention identified six major risk factors that contribute to the decline in adolescents' health: a) behaviors that result in unintentional and intentional injuries; b) tobacco use; c) alcohol and other drug use; d) dietary patterns that contribute to disease; e) insufficient physical activity; and f) sexual behaviors that result in HIV infection, other STDs, and unintended pregnancy.¹ Research has shown that these risk factors not only result in poor adolescent health, but also inhibit education and negatively impact several other social outcomes.^{2,3} Promisingly, though, these same risk factors have been shown to be preventable. Therefore, the need for effective health education efforts capable of preventing these risk factors has become increasingly important.

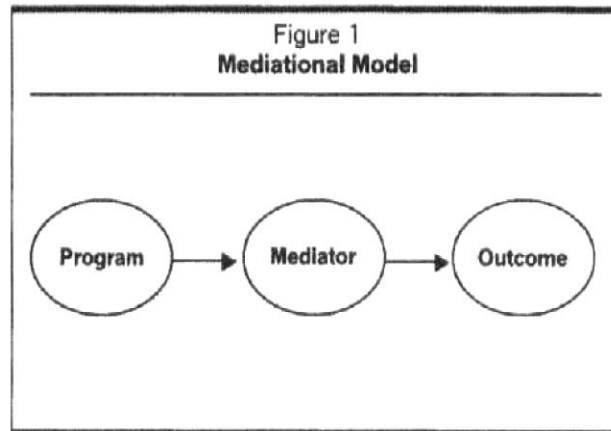
Schools provide an ideal platform for educating adolescents about factors that pose immediate and long-term health risks, because schools provide access to the majority of the nation's youth. Publication of the 1964 *School Health Education Study* demonstrated the need for a comprehensive approach to health education.⁴ Over the past few decades, organizations such as the Education Commission of the States, National Professional Health Education Organizations, Joint Committee on Health Education Terminology, and Centers for Disease Control and Prevention worked to define and create comprehensive school health education. Comprehensive school health education includes a K-12 curriculum that provides students with the knowledge, attitudes, and skills to maintain and improve their health, prevent disease, and reduce health-related risk behaviors. The commitment of both private and public dollars to this cause, as well as the promotion of federal initiatives such as Healthy People 2000 and Healthy People 2010, National Health Promotion and Disease Prevention Objectives, the National Education Goals for the Year 2000, and the Safe Schools Act demonstrate the degree to which national support for comprehensive school health education has increased. Ten content areas constitute comprehensive school health education: community health, consumer health, environmental health, family life, mental and emotional health, nutrition, personal health, chronic and infectious disease prevention and control, safety and accident prevention, and substance use and abuse.⁵

Adolescent Substance Use

Identification of substance use as both a major risk factor to adolescent health and a required content area for a comprehensive school health education program reflects an awareness of the health risk that substance use poses for youth. Health-related consequences specific to substance use include, but are not limited to, increases in health care costs, crime, social welfare, motor vehicle crashes, and premature death.⁶

In the 1980s Congress began providing approximately \$500 million per year for the US Department of Education to fund school-based drug education efforts.⁷ Availability of funding prompted a flood of research targeting the prevention of adolescent substance use. The resulting body of research led to promising theories that offer explanations as to why people make changes in health-related behaviors, adopt certain health-enhancing behaviors, or avoid behaviors detrimental to health. Such theories have guided research efforts in identifying substance use prevention strategies that are most effective with adolescents.

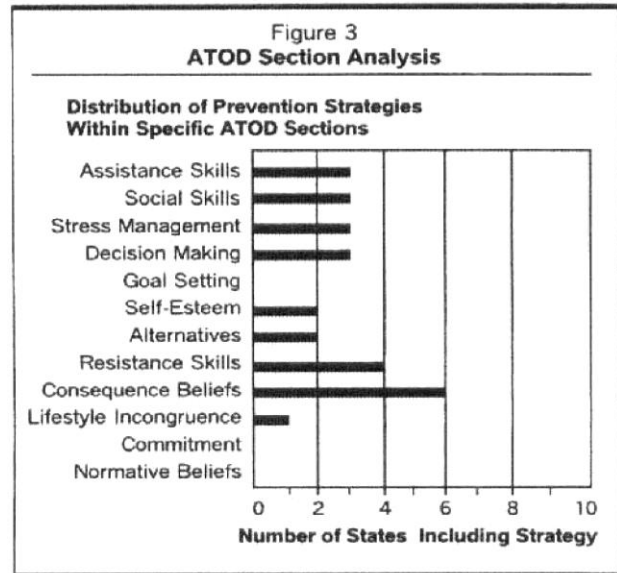
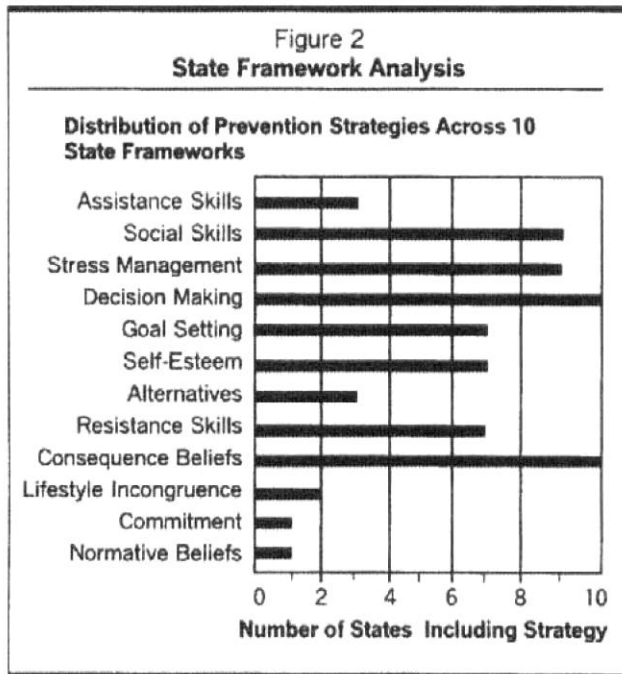
Classroom observations revealed that the central strategy used by classroom teachers for preventing substance use among adolescents involves simply providing them with facts about drugs and the consequences of use.⁸ Improvement in student knowledge about drugs and consequences of use, however, has not been shown to significantly change student attitudes and related behavior.⁹ Improving adolescents' health attitudes, skills, and behaviors has been a more difficult task and has been accomplished inconsistently at best.¹⁰ Current prevention strategies have yet to consistently curb adolescent substance use. Annual findings of the Monitoring the Future survey reveal that the early to mid 1990s were characterized by increasing trends in overall substance use. This increase was followed by one to two years of mild decreases. Recent reports have indicated that adolescent substance use is remaining steady.¹¹



Effective Prevention Strategies

When prevention researchers examine the effectiveness of prevention strategies, they often use the mediational approach.¹² According to this model of drug use behavior (Figure I), prevention efforts are intended to indirectly change the outcome of interest (ie, drug use) by changing one or more precursors of the behavior. These precursors often are referred to as risk or protective factors, or as mediators. According to the model, adolescent substance use prevention efforts will only be successful when they target mediators empirically shown to be predictive of substance use. For example, norm setting programs.¹³ are designed to change social normative beliefs, a concept defined in the Theory of Reasoned Action.¹⁴ Thus, proponents hypothesize that substance use and abuse will be prevented by correcting students' overestimates of substance use among peers.

In 1992 Hansen reviewed school-based intervention programs published between 1980 and 1990 and identified 12 basic mediating variables used to prevent adolescent substance use:¹⁵ a) normative beliefs about substance use prevalence and acceptability; b) lifestyle incongruence; c) beliefs about consequences; d) commitment to not using substances; e) social pressure resistance skills; f) stress management skills; g) self-esteem h) alternatives to substance use; i) decision making skills; j) goal setting skills; k) social skills of assertiveness, communication, and interpersonal problem solving; and l) assistance skills (for helping peers resolve conflict and problems).



Hansen and colleagues^{16,17} used the mediational approach to conduct several longitudinal analyses of these strategies. Data for these studies were collected from a sample of more than 4,000 students in 6th through 12th grade classes. Students were surveyed once a year for five years to compare the relative influence of the 12 mediators as predictors of adolescent substance use. The four strongest longitudinal predictors of alcohol, tobacco, and other drug use were differences in normative beliefs, manifest commitment to avoid drug use, beliefs about consequences. And lifestyle incongruence, such as holding values and a desired lifestyle inconsistent with drug use.

Further strength was given to these findings when McNeal and Hansen¹⁶ found a clear developmental trend in the relationships between these four key mediators and onset of drug use during adolescence. Between eighth and ninth grade, nonusing students did not exhibit deterioration in the mediators and thus were still abstaining from use. However, those who initiated drug use between those grades had normative beliefs, ideals, commitment levels, and beliefs about consequences consistent with substance use and abuse. These results suggest substance use prevention efforts may be optimized by correcting erroneous normative beliefs, creating a perception that substance use will interfere with a young person's desired lifestyle, building a personal commitment to avoid substance use, and identifying both long-term and short-term physical and social consequences of substance use.

Although these four mediating variables were the strongest predictors of adolescent substance use,^{16,17} further research provided varying levels of support for the other eight mediators. For example, Botvin and colleagues¹⁸⁻²⁰ found that training in resistance skills, stress management skills, self-esteem, decision-making skills, goal-setting skills, and social skills can prevent smoking and other problem behaviors among adolescents from diverse ethnic populations. Additional evidence indicates that alternatives^{21,22} to drug use as well as peer assistance skills^{23,24} can be important mediators of substance use.

State Curriculum Frameworks

National education standards provide that states and local school districts use as guides in developing their own curricula. Development of curricula relies heavily on the presence and quality of state curriculum frameworks. State curriculum frameworks are intended to serve as both blueprints for specialists responsible for creating, local curricula as well as outlines on how subject matter is to be articulated across grades. Frameworks should represent the state of the art in education and should be a means of disseminating "best practice." However, a blueprint does not necessarily provide specific instructions concerning every detail necessary to

complete a project. In the case of curriculum development, a state framework should provide the flexibility necessary for curriculum specialists to effectively align the framework's contents with their local priorities.

Research documents the ability of high-quality curriculum frameworks to directly influence the content and quality of education.²⁵⁻²⁸ State departments of education typically base curriculum frameworks on selected content and performance standards intended to clearly define what students should know and be able to do. Appropriate teaching strategies, learning activities, and assessment guidelines often are suggested within the framework to help ensure that students meet specified standards.

Curriculum frameworks written in a more literary, narrative style convey information in a more compelling and understandable way both to curriculum specialists and teachers. This approach in turn makes the framework more user-friendly and increases the likelihood that curriculum specialists will actually integrate the information into their local curricula. Unfortunately, many curriculum frameworks shortchange curriculum specialists and teachers because they consist simply of lengthy lists of standards and objectives not linked strongly to challenging content and effective pedagogy.²⁶

Lee²⁷ provided an excellent example of how quality curriculum frameworks can positively influence classroom practice. Lee found that eighth-grade students in California were provided significantly more opportunities to learn higher-order skills in math than eighth graders in Minnesota. He partly explained the differences in pedagogical practices by presenting differences in the state curriculum frameworks, California used a narrative style to contextualize examples. For instance, they included vignettes that illustrated teaching practices in relation to specific content and classroom situations. Conversely, Minnesota provided frameworks consisting of lists and outlines promoting teaching practices with little or no detail about how each practice was to be used by classroom teachers.

The 1995 School Health Policies and Programs Study reported that 92% of states provide a written curriculum, guidelines, or framework for health education.²⁹ Therefore, most states provide materials that define and direct school-based health education efforts at the local level. Essentially, the state is responsible for providing current information capable of resulting in effective health education curricula. Though progress has been made in identifying strategies most capable of preventing adolescent substance use, it is currently unknown whether these are the strategies suggested or supported by state curriculum frameworks for secondary health education.

REVIEW OF STATE CURRICULUM FRAMEWORKS

During this investigation, the research staff reviewed 10 ninth-grade health education state curriculum frameworks to accomplish three goals; 1) to identify the extent to which the 12 mediators were found in each state curriculum framework; 2) to identify state curriculum frameworks that included specific alcohol, tobacco, and other drug (ATOM) sections, and to determine to what extent the 12 common mediating variables were found in those sections; and 3) to identify the extent to which the four strongest prevention mediators identified by Hansen and colleagues.^{16,17} (normative beliefs, manifest commitment to avoid drug use, beliefs about consequences, and lifestyle incongruence) were found in the state curriculum frameworks and in the specific ATOD sections.

Framework Selection

Ten states were selected randomly selected for the review: Arizona, California, Florida, Idaho, Missouri, Mississippi, North Carolina, New York, Texas, and Utah. Each state was contacted to request a copy of their secondary-level health education curriculum framework, Four state frameworks were acquired directly from the World Wide Web and the remaining six were received by mail.

Analysis Process

To determine the extent to which the 12 prevention mediators (Table 1) were included, the state curriculum frameworks were reviewed for the presence or absence of each mediator, A two-level categorization scheme of

inclusion for each mediator was used. The two categories characterized the presence or absence of each mediator by assigning one of the following labels: Clearly Identified or Not Identified.

To ensure reliable results, a panel of three project members independently reviewed each state curriculum framework. Reviewers were instructed on the definition and use of prevention mediators as used in school curricula. Inter-rater agreement was greater than 95%. Content discrepancies among the three reviewers were examined by the project director who made final decisions regarding the presence or absence of a mediator.

Table 1
Prevention Strategies

Prevention Strategy	Definition	Postulated Effects on Drug Use
Normative Beliefs	Focuses on students' perceptions of acceptability and rates of drug and alcohol use. Adolescents tend to overestimate prevalence and acceptability of use and availability of drugs within their peer groups.	Expectations are lowered regarding prevalence and acceptability of use and availability of drugs in peer-oriented social settings.
Lifestyle Incongruence	Demonstrates to adolescents that their ideal future is incongruent with drug use.	Individuals make decisions based on their idealized future and see that drug use is incompatible with the goals they hope to achieve.
Commitment	Emphasizes moral reasons for living drug free. Adolescents are encouraged to make commitments to live drug free.	Development of strong personal commitments to live drug free discourages substance use.
Consequence Beliefs	Focuses on the consequences of using or abusing drugs and the likelihood of experiencing social and/or physical harm from drug use. Multiple consequences are emphasized such as long-term and short-term physical, psychological, and social results of drug use.	Adolescents' knowledge about the harmful consequences of drug use and their perceived susceptibility to those harmful consequences is increased.
Resistance Skills	Teaches skills to identify and assertively resist pressure to use drugs from peers, siblings, parents, adults, and the media.	Development of personal skills and an increased perceived self-efficacy allows adolescents to refuse offers to use drugs.
Goal-Setting	Promotes the development of skills necessary for setting and attaining goals.	Increased motivation to strive for achievement and the ability to set and achieve goals emphasizes the incongruence between drug use and attaining personal goals.
Decision Making	Teaches rational decision making for identifying problems, creating solutions and making choices among alternatives.	The development of decision-making skills assists adolescents in making rational decisions concerning substance use.
Activities/Alternatives	Emphasizes participation in programs and activities that offer alternatives to drug use.	Exposure to at-risk situations is reduced and involvement in activities that run counter to drug use is increased.
Self-Esteem	Focuses on developing individual feelings of value and self-worth. Appreciation of uniqueness and individual talents is emphasized with the aim to increase self-esteem.	Improved self-esteem will mediate the onset of drug use.
Stress Management	Teaches skills that help adolescents cope with and manage psychologically difficult situations. Alternatives for dealing with stressful situations are emphasized.	A reduction in perceived stress will mediate the development of drug use.
Social Skills	Provides social skills training including communication skills, human relations skills, and skills for solving interpersonal conflict.	Focusing on social skills will reduce substance use by helping adolescents improve their ability to communicate effectively, helping them to gain social acceptance, and resolve interpersonal conflict peacefully.
Assistance Skills	Teaches adolescents the skills necessary for getting help for themselves or others in the case of substance abuse and educates adolescents on what services are available for those who need help.	Provide social support to at-risk individuals and educates adolescents on where and how to seek help.

Each of the state curriculum frameworks for secondary health education was reviewed extensively. The review included all standards, objectives, and any additional or supplementary information provided to assist in curriculum development. Mediators did not have to be specifically listed to be classified as "clearly identified." For instance, frameworks that described objectives related to the definition of mediators were included. It was assumed that the mediators may be referred to differently by different groups but that the definitions of the mediators should closely resemble each other. For example, lifestyle incongruence is also referred to as values

incongruence and social skills is sometimes referred to as life skills. Although names of the mediators vary, definitions of those mediators and how they are thought to mediate adolescent substance use are the same. Essentially, reviewers determined if the state curriculum framework offered some indication that a mediator should be part of the health education/substance use prevention process.

State curriculum frameworks were examined in a four-step procedure. First, each of the 10 frameworks was examined in their entirety for the presence of the 12 prevention mediators. Second, the frameworks were reviewed to determine if a specific section for alcohol, tobacco, and other drugs (ATOD) was included. Third, each framework with an ATOD section was re-examined to determine the presence or absence of each of the 12 prevention mediators within the ATOD section. Finally, mediators were rank ordered according to those most commonly identified across all 10 state frameworks. These rankings were compared to the four mediators shown by Hansen and colleagues to be most highly predictive of adolescent substance use.^{16,17}

FINDINGS FROM THE ANALYSES

Inclusion of Prevention Strategies in State Frameworks

Mediators identified most often in the 10 state curriculum frameworks for secondary health education (Figure 2) were beliefs about consequences (10 state frameworks), decision making (10 frameworks), stress management (10 frameworks), and social skills (9 state frameworks). Of the four prevention strategies most predictive of adolescent substance use,^{16,17} only beliefs about consequences was well represented in the state frameworks, Commitment was identified in two frameworks, lifestyle incongruence in two% and normative beliefs in one.

Inclusion of Prevention Strategies in ATOD Sections

Six of 10 state curriculum frameworks for secondary health education had dedicated sections for alcohol, tobacco, and other drugs (ATOD). Mediators identified most often in the ATOD sections of the state frameworks (Figure 3) were beliefs about consequences (6 ATOD sections), resistance skills (4 ATOD sections), assistance skills (3 ATOD sections), decision making (3 ATOD sections), social skills (3 ATOD sections), and stress management (3 ATOD sections). Only two of the four strategies most predictive of adolescent substance use,^{16,17} — beliefs about consequences and lifestyle incongruence — were represented in the specific ATOD sections. Beliefs about consequences were identified in all six, but lifestyle incongruence was identified in only one. Normative beliefs and commitment were not identified in any of the specific ATOD sections of the state curriculum frameworks.

IMPLICATIONS FOR PROFESSIONAL PRACTICE

Substance use poses a serious threat to the health and welfare of youth. To combat the problem, substance use education/prevention has become a topic of emphasis in school-based health education. Current trends in adolescent substance use reinforce the need for more effective prevention strategies. Preventing adolescent substance use is difficult to accomplish. However, prevention research has identified Ninnies that show empirically the most promise for success. One major goal of the prevention science community is to bridge the gap between research and practice. Discovering a way to ensure inclusion of these empirically proven strategies in practical school health education efforts would be a major step toward accomplishing that goal. State curriculum frameworks for health education are a practical mechanism for disseminating research findings.

State curriculum frameworks set a philosophy and an over-arching structure for health education instruction that helps teachers understand what is important and ways to accomplish health promotion/disease prevention goals. The guidance that can be supplied in the static framework is especially important for health education, because health is a subject often taught by teachers with little or no formal training/education in the subject.²² Generally, a state framework consists of content and performance standards for students. These content and performance standards define what information is most important for students to acquire and how students should best demonstrate acquisition of that knowledge. Vital pedagogical suggestions intended to maximize the chances for achieving those standards are sometimes included within the frameworks. Without the inclusion of effective teaching strategies and thorough, practical explanations of their use within the classroom, states are putting

themselves in the position to fail in their pursuit of standard achievement. Therefore, properly developed and presented (ie. narrative style and user friendly) curriculum frameworks for health education become very important. When developed in this format they can serve as an efficient and effective means of getting research-based information into the health education classroom.

The state curriculum framework for health education provided by the state department of education in California can serve as a model for other states. This analysis revealed that their framework for health education clearly identified and defined all 12 of the identified mediators, and provided thorough discussion of suggested strategies for implementing and incorporating those mediators into classroom practice.²⁷ It also included knowledge as well as attitudinal and behavioral objectives and standards that were specific to ATOD. The framework is also distributed as a professional and durable textbook. California has produced and disseminated a state health education framework that provides anyone involved in curriculum development with a comprehensive resource for providing current health education curricula capable of promoting "best practice" for substance use prevention.

This analysis revealed, however, that state health education frameworks may be shortchanging health education curriculum specialists. Several states still have not included ATOD section in their state frameworks for health education. In addition, most pedagogical suggestions in the frameworks do not emphasize the mediators shown by Hansen and colleagues to have the most promise for preventing substance use,^{16,17} with the exception of beliefs about consequences. Normative beliefs, manifest commitment to avoid drug use, beliefs about consequences, and lifestyle incongruence were given a minimal amount of attention by the state frameworks in comparison to other mediators. Therefore, specialists using these frameworks as their guide for developing health education curricula would have to determine through self-discovery those strategies that research has shown to be most successful at preventing adolescent substance use.

It would be optimal for health education frameworks to offer specific, detailed suggestions for incorporating research-based prevention strategies into the classroom. Ideally, this would be done within a specified ATOD section of the state framework. This approach would help ensure that curriculum specialists are exposed to methods for preventing adolescent substance use that were empirically tested for effectiveness. Therefore, keeping in line with the mediational model, health education curricula may demonstrate more clearly how to target mediators that are key predictors of adolescent substance use and likely to be of value as targets of intervention. Hopefully, as this occurs, classroom health teachers will become more effective at stimulating improvements in key mediators or at the very least, keeping key mediators from deteriorating within their students. At a minimum, correcting erroneous normative beliefs concerning substance use, having students manifest commitment to avoid substance use, educating students about short-term and long-term physical and social consequences of substance use, and having students identify how their preferred or ideal lifestyle is incongruent with substance use, should represent prevention approaches identified in state frameworks for health education. Targeting these mediators should have a marked effect on reducing substance use among adolescents.^{16,17}

Finally, this approach to reviewing state curriculum frameworks can be expanded to other areas of health education such as family life, safety and accident prevention, and mental and emotional health. The challenge will be to identify whether promising research findings are being used in developing curriculum frameworks for school health education.

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