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Original article

## State-Level Education Standards for Substance Use Prevention Programs in Schools: A Systematic Content Analysis

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### A B S T R A C T

**Purpose:** Three fourths of public schools in the United States maintain instructional programs to discourage alcohol, tobacco, and other drug (ATOD) use. State-sanctioned instructional standards attempt to direct this ATOD preventive education. No existing research, however, systematically codes these standards across all grades and states. We performed such an analysis.

**Methods:** We retrieved ATOD standards information from all 50 states and the District of Columbia from multiple sources, including the National Association of State Boards of Education's State School Health Policy Web site. Three independent researchers classified and cross-validated ATOD standards (inter-rater agreement = 98%) based on recommended content domains and pedagogic delivery methods.

**Results:** We find substantial grade-level variation in standards. Elementary schools emphasize generic social skills and affective skills, whereas middle and high school standards focus on knowledge about biological and behavioral consequences of ATOD use. States also vary widely in their content and coverage of standards. Two thirds of states do not include standards in all content areas considered "evidence-based."

**Conclusions:** The ATOD curricular agenda for the majority of states falls well below recommended content and delivery benchmarks. We intend for our harmonized data set—the first of its kind—to promote research that examines the relation among state ATOD standards, actual classroom instruction, and adolescent ATOD use.

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### IMPLICATIONS AND CONTRIBUTION

Our systematic coding of the alcohol, tobacco, and other drug (ATOD) curricular agenda by state and grade reveals that two thirds of states fall well below the content level recommended by the literature. This harmonized data set—the first of its kind—will allow researchers to assess whether state standards influence instruction and, ultimately, adolescent ATOD use.

Despite a general secular decline since the 1990s, adolescent illicit drug use remains more prevalent in the United States than in other high-income countries [1]. The most recent national survey of high school youth (2011), moreover, reports that by grade twelve 19% of students currently smoke, 39% currently

drink alcohol, and 25% currently use illicit drugs [2]. A substantial portion of these youth also experiment with alcohol, tobacco, and other drugs (ATOD) by eighth grade. Adolescent ATOD use, moreover, varies substantially by state of residence. Prevalence estimates of "ever smoked" by high school, for example, range from 23.1% in Utah to 59.5% in Louisiana [2]. The relatively high prevalence of adolescent ATOD use in the United States, in conjunction with extensive research that finds increased risk of lifetime addiction and other attendant adverse physical and

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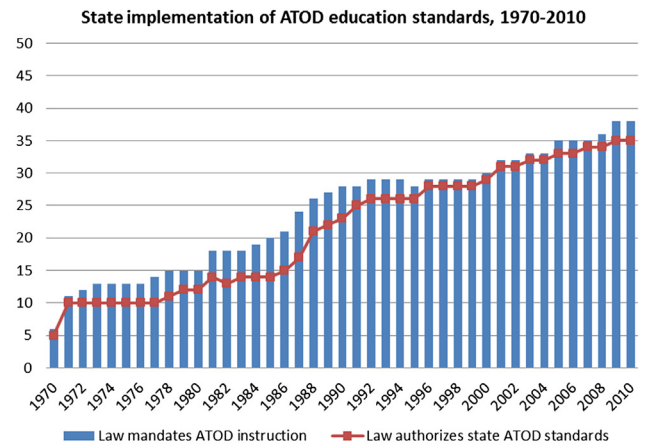
mental health outcomes, underscores the importance of implementing evidence-based efforts to delay, prevent, or reduce adolescent ATOD use [3].

Some researchers contend that school-based ATOD prevention efforts may effectively complement broad social, economic, and policy initiatives [4]. Federal and state governmental agencies, moreover, routinely direct funds to schools to augment ATOD prevention efforts. For instance, the federal government recently allocated an estimated \$600 million per year toward the Safe and Drug Free Schools and Communities Act, the largest source of school-based ATOD education funds [3]. This funding, however, remains controversial in that it often results in the enactment of programs deemed by education and public health scholars as ineffective and/or lacking a research base [5,6]. A recent U.S. Department of Education analysis further reports that less than 10% of youth substance use programs in middle and high schools show evidence of research-proven effectiveness [7]. Systematic reviews, moreover, suggest that the lack of a long-term benefit of most school-based ATOD prevention programs may warrant their termination [8,9]. These reviews and other analyses call into question the cost-effectiveness of current ATOD prevention efforts in schools [10].

Whereas extensive literature in health policy finds that specific state legislation (e.g., cigarette taxes) precedes a reduction in adolescent ATOD use [11], we know of no work that examines whether state school-based health education requirements influence adolescent ATOD use. A key first step to analyzing this relation involves a comprehensive assessment of whether, and to what extent, state ATOD instructional standards reflect current evidence regarding ATOD prevention. This paper thus builds on previous work [12,13] to systematically evaluate the prevalence of content germane to ATOD prevention in state health education standards—the detailed documents that states produce and distribute to guide health instruction in public schools. The objective of this paper is to determine whether ATOD-related instructional standards vary by state and grade level.

Instructional standards attempt to establish a set of shared expectations in the highly decentralized context of American public education. In core academic areas such as mathematics and English, state and federal educational accountability policies enforce instructional standards by testing student mastery of standards and providing sanctions and rewards to schools based on student performance [14]. By contrast, instructional standards in health education are largely informational. Nevertheless, the standards carry the force of law in most states and may shape ATOD instruction by influencing the health curricula that schools adopt and by providing guidelines for instructors on appropriate topics for each grade level. States have increasingly adopted ATOD educational standards over time (Figure 1). Currently, 44 states outline some form of school-based ATOD education standard, as compared with only six states in 1970.

A recent U.S. Department of Education report on youth substance use endorses 22 school programs as evidence-based [7]. We used characteristics of these programs, as well as results from a meta-analysis of over 200 programs by Tobler and colleagues [15], to code state health education standards documents. Based on literature in child psychology highlighting the importance of age-specific and life-course patterns in cognitive development, decision-making, and the social environment, our systematic analysis takes a developmental perspective [16,17]. We analyze each state ATOD education standard by grade level (i.e., a proxy for developmental stage).



**Figure 1.** Cumulative frequency plot over time of the number of states that implemented school-based ATOD educational standards, 1970–2010.

Our systematic approach to categorizing ATOD educational standards may uncover substantial variation across states in agenda setting for school-based prevention efforts. We, moreover, make our data set publicly available (<http://inid.gse.uci.edu/public-use-data/>) to encourage further analyses.

## Methods

### Variables and data

We used the National Association of State Boards of Education's State School Health Policy Web site ([http://www.nasbe.org/healthy\\_schools/hs/](http://www.nasbe.org/healthy_schools/hs/)), as well as the Web sites of state boards of education, and direct communication with state educational and health and human services departments, to collect state standards related to health and behavioral education from all 50 states and the District of Columbia. We focused on only the current (i.e., 2010) standards from each of the states with the assumption that these standards influenced instruction in the fall of 2012. We did not analyze any standards issued before 2010. We did not study human subjects; therefore, no human subjects approval by the institutional review board was required.

In most cases, state departments of education distribute the standards documents to administrators and health instructors to influence the design and content of health instruction in K–12 schools. These standards carry the force of law in most states. Thirty-eight states legally mandate ATOD instruction in public schools, and legislation in 20 states explicitly requires schools to enact the instruction described in ATOD educational standards. Few states, however, have fiscal or other mechanisms in place to enforce these standards. Approximately half of the local school districts in the United States may circumvent state standards and design their own ATOD instruction. Nonetheless, research about the implementation of instructional standards in academic subjects such as mathematics or English Language arts indicates that even weakly enforced standards exert a modest influence on instruction [13]. Therefore, we suspect that ATOD educational standards shape health instructor training, inform the adoption of health education curricular materials and prevention programs at schools, and guide teachers as they plan their day-to-day instruction.

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