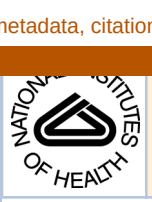

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The prevalence of evidence-based substance use prevention curricula in the nation's elementary schools[1]

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Abstract

Current guidelines for school-based substance use prevention suggest that prevention efforts should begin in elementary grades, before students begin using substances. Previous research suggests, however, that the use of evidence-based curricula in these grades may be low. Using a 2005 survey of public school districts in the U.S. that include elementary grades (n=1563), we assessed the prevalence of elementary curricula use, particularly those designated as evidence-based. We found that although 72% of districts administer a substance use prevention curriculum to their elementary students, only about 35% are using one that is evidence-based and only about 14% are using an evidence-based curriculum more so than any other prevention curriculum. We present prevalence estimates for specific evidence-based curricula and conclude by discussing possible reasons for and implications of our findings.

Introduction

By the time they reach middle school, a surprisingly high proportion of our nation's children have tried any of a variety of substances. Data collected in 2007 from the National Survey on Drug Use and Health reveal that between 10% and 15% of children age 12 or 13 have

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tried either alcohol, tobacco, or other drugs (Substance Abuse and Mental Health Services Administration, 2007a, 2007b) while findings from the Youth Risk Behavior Surveillance System suggest that these figures may constitute an underestimate (Eaton et al., 2008). Prevention efforts in our schools, therefore, should begin in elementary grades before students begin using substances (Donovan, 2007; Nation et al., 2003; Pasch, Perry, Stigler, & Komro, 2008; Centers for Disease Control and Prevention, 1994). Prevention curricula that are evidence-based represent one means by which to effectively address student substance use. Although it has been estimated that between 10% and 20% of the nation's school districts are using at least one evidence-based substance use prevention curriculum (Hallfors & Godette, 2002; Hantman & Crosse, 2000; Ringwalt et al., 2008a), the proportion of districts administering such curricula to their elementary school students is unknown. In this paper, we report prevalence estimates of evidence-based substance use prevention curricula in elementary grades in U.S. public school districts.

Previous reports indicate that many of the nation's elementary schools are not addressing substance use prevention. Based on their survey of school principals conducted in 1998, Gottfredson and Gottfredson (2001) reported that elementary schools were less likely to provide information on substance use than middle and high schools. Although two-thirds of the elementary schools used at least one packaged curriculum, none of them was recognized as effective for students at this level by any of the registries noted below.

At present, there are two actively maintained registries of evidence-based substance abuse prevention programs, namely the National Registry of Effective Programs and Practices (NREPP; (National Registry of Evidence-based Programs and Practices, 2008) and Blueprints for Violence Prevention (Center for the Study and Prevention of Violence, 2008). A third, sponsored by the Office of Safe and Drug-Free Schools (OSDFS) of the U.S. Department of Education (U.S. Department of Education, 2002), has not been updated since 2001. In 2005, at the time of data collection for the current study, a review of the school-based substance use prevention curricula that were identified as evidence-based on these three registries revealed nine universal curricula that targeted students of elementary school age.

The purpose of this study is to examine the extent to which U.S. school districts are administering substance use prevention curricula to their elementary students. Specifically, we aim to estimate (1) the proportion of districts administering any substance use prevention curriculum in their elementary grades, regardless of whether it is evidence-based, (2) the proportion administering any one of the nine universal curricula specified as evidence-based by the registries we consulted, and (3) the proportion that report using an evidence-based curriculum more frequently than any non-evidence-based curricula.

Methods

Sample

Data for the current study come from the second wave of the School-based Substance Use Prevention Programs Study, a national survey of US public middle schools and their associated districts. We originally selected a random sample of 2273 eligible middle schools from a 1997–1998 sampling frame provided by Quality Education Data, Inc. (1998). We excluded schools that enrolled fewer than 20 students in middle school grades or were non-regular, such as alternative, charter, vocational/technical, or special education schools, or those administered by the US Department of Defense or Bureau of Indian Affairs. For the second wave of the study, we selected a refreshment sample of 210 middle schools from a 2002–2003 sampling from the Common Core of Data (CCD; National Center for Education Statistics, 2004) using the same exclusion criteria. The purpose of the refreshment sample

was to account for schools that were newly-opened or reorganized between the first and second waves of data collection. We stratified both sampling frames by population density, school size, and school district poverty level, with equal probability within each stratum. Prior to the second wave of data collection, we contacted sampled schools between October 2004 and January 2005 to confirm their eligibility status, a process that yielded 2,204 verified eligible schools nested within 1,922 school districts. Data for the current analyses come from the 1612 districts associated with the schools from the study's second wave.

Because we were interested in curricula used in elementary grades, we restricted our sample to districts that served students in any of grades 1 through 5, as specified by the CCD. We excluded districts that served only 5th and 6th grades, which we have defined as middle schools in other studies (Ringwalt et al., 2002). This strategy yielded an analysis sample of 1596 cases, which constituted 99% of the 1612 responding districts. We deleted 33 cases for inconsistent responses to our questions of interest, which gave us a final analysis sample of 1563 cases. This figure constitutes 98% of 1596 responding districts serving elementary grades, or 97% of all 1612 responding districts.

Using the CCD, we characterized the school districts in our sample by race/ethnicity, percent receiving a free or reduced-price lunch (as a proxy for poverty), and urbanicity (i.e., population density). About 85% (85.6%, 95% CI = 83.5–87.6%) of districts had a majority white student population and almost half (46.0, 95% CI = 42.6–49.4%) were categorized as high poverty (i.e., > 39% of students eligible for free or reduced-price lunch). More than half (56.4%, 95% CI = 53.1–59.7%) of districts were located in rural areas and about one-fifth were located in urban (21.4%, 95% CI = 18.8–24.0%) and suburban (22.2%, 95% CI = 19.5–24.9%) areas.

Data collection

We collected data from January to July 2005 from each district's Safe and Drug-free Schools Coordinator, or the person identified by the district as responsible for coordinating the district's substance use prevention activities. All respondents were initially invited by letter to complete a 40–45 minute questionnaire via a secure website and were provided a prepaid $10 cash incentive. Respondents who did not complete the web-based survey after repeated contacts were mailed a paper copy and a postage-paid return envelope, along with a letter of support from OSDFS. Those who did not complete the mailed questionnaire were contacted for a brief telephone interview. These data collection strategies yielded a response rate of 83.9%. Of those, 66.8% responded by web, 16.3% responded by paper, and 16.9% responded by phone.

Measures

Our survey instrument included a number of questions concerning whether the elementary schools in the district taught substance use prevention curricula. We began the pertinent section by asking respondents whether any schools in their district used a substance use prevention curriculum with students in elementary grades. Those reporting that they did were then asked to indicate which substance use prevention curricula were being used with students in elementary grades during the current school year. We then followed up with a question asking them which curriculum they were using the most. If the district was using at least two curricula equally, respondents were instructed to select the one that their schools used the most with students in these grades.

For the latter two questions, we provided respondents with a list of curricula that included the evidence-based curricula identified by at least one of the three national registries described previously. We included those curricula that were specified as school-based,

targeted a universal population of students in elementary grades, were commercially available, and, as of 2005, were designated as “model” or “effective” by NREPP, “model” or “promising” by Blueprints for Violence Prevention, or “exemplary” by the U.S. Department of Education. These criteria yielded the following nine curricula: Caring School Community Program (formerly Child Development Project); keepin’ it REAL; Life Skills Training; Positive Action; Project Toward No Tobacco Use (TNT); Protecting You/ Protecting Me; Skills, Opportunities, and Recognition (SOAR; also called the Seattle Social Development Project); Social Competence Promotion Program for Young Adolescents (SCPP-YA); and Too Good For Drugs. Note that some of these curricula are also recommended for grades beyond elementary school. We also provided response options for respondents to indicate if they were using a locally-developed curriculum or any other curricula not on our list. A copy of our instrument is available from the first author.

We categorized districts as using a substance use prevention curriculum if the respondent selected any of those specified on our list, indicated that they were using a locally-developed curriculum, or provided the name of another curriculum in the field that solicited open-ended responses. We included districts that indicated they were using another curriculum but did not name it in the open-ended field, but we excluded those that were exclusively using curricula that did not specifically target substance use prevention (e.g., violence prevention or character education).

Analysis strategy

All analyses were conducted in SAS 9.1 using PROC SURVEYFREQ and weighted data to account for the sampling design. We began by estimating the proportion and 95% confidence intervals (CI) of districts with at least one school with elementary grades that implemented a substance use prevention curriculum, regardless of whether it was specified as effective by the registries we consulted. We then derived point estimates for each of the nine curricula identified as evidence-based by these registries. We then estimated the proportion of districts that administered any evidence-based curricula, as well those that used an evidence-based curriculum most frequently.

Results

Altogether, 72.5% (CI = 69.3–75.7%) of school districts reported that they used at least one substance use prevention curriculum with students in elementary school grades. Table 1 displays the proportion of districts that used each evidence-based curriculum we identified, as well as the proportion that used the particular curriculum most frequently. As this table reveals 35.3% (CI = 32.0–38.6%) of the nation’s school districts reported using any evidence-based substance use prevention curriculum with students in at least one elementary school, and 14.1% (CI = 11.8–16.3%) used one more frequently than all other substance use prevention curricula they implemented. Among evidence-based curricula, Life Skills Training was used by the most districts (24.2%, CI = 21.2–27.2%) and was also used most frequently (6.5%, CI = 4.9–8.1%).

Discussion

In this study, we found that about three-quarters of the nation’s public school districts administered a substance use prevention curriculum to their elementary school students, which is roughly commensurate with the figures reported by Gottfredson and Gottfredson (2001). Although it is encouraging that such a high proportion of districts are providing substance use prevention programming to their elementary school students, the low usage of evidence-based curricula is concerning. Only slightly more than one-third of districts

administered an evidence-based curriculum at all, and only 14% used one more frequently than any other prevention curriculum.

To what, then, should we attribute this low rate of evidence-based curricula use? The reason may simply be that two important messages have yet to be fully disseminated to school districts nationwide. The first of these is that substance use prevention should begin in elementary schools, even though for many youth, middle school represents the time of greatest risk for initiation. Second, the use of locally-developed and untested curricula use may fail to inoculate children against substance use. The U.S. Department of Education has attempted to address this issue by requiring recipients of Safe and Drug-Free Schools funds to implement curricula that have shown to be effective, and there is evidence to suggest that the message is beginning to take hold at the middle school level. Ringwalt and colleagues (2008b) reported a significant increase in evidence-based curricula use in middle school grades, rising from 34% of schools in 1999 to 43% of schools in 2005.

The low rate of evidence-based curricula use in elementary grades may also be due to any of a variety of factors that inhibit the implementation of evidence-based curricula. Schools and districts may find themselves without sufficient funding for the purchase of evidence-based program materials and training for all of the grade levels they serve. Prevention “best practice” guidelines have suggested that drug use prevention be implemented with students in kindergarten through 12th grade, with more intensive instruction provided to students in middle or junior high school (e.g., Centers for Disease Control and Prevention, 1994). Given the limited availability of funding for substance use prevention, school districts may choose to focus their efforts on these grades.

In the elementary grades, where health-related topics often are infused throughout the curriculum rather than being a distinct subject area or class (Kann, Telljohann, & Wooley, 2007), teachers may not have enough time to address substance use prevention in the face of required end-of-year testing. Additionally, schools that receive little input from district-level coordinators may not receive the guidance they need to select effective curricula (Ringwalt, Ennett, Vincus, Rohrbach, & Simons-Rudolph, 2004). There is also evidence to suggest a lack of coordination in selecting curricula. Schools may look to districts to provide input, whereas districts may rely on a site-based management approach or advisory committees to provide guidance (Ringwalt et al., 2004; Rohrbach, Ringwalt, Ennett, & Vincus 2005). The present study did not address the potential influence of these contextual factors, but they do warrant further consideration in future examinations of curricula selection and use.

Our study has a few limitations that should be considered when interpreting its results. First, it is possible that some of the district coordinators who responded to our questionnaire might not have been completely aware of the curricula being used in their districts’ elementary schools. Second, because we did not include elementary school teachers in our study, we do not know whether the curricula adopted by the district are actually being implemented within the district’s schools (Rohrbach et al., 2005).

Third, we excluded middle schools from our sample if they indicated they did not teach substance use prevention and, therefore, removed any district whose only sampled school fell into this category. Any district teaching substance use prevention at the elementary level but not at the middle school level, therefore, would have been excluded, possibly leading to an underestimate of prevalence. However, we excluded only about 2% of middle schools for this reason and, therefore, fewer districts. In addition, data cited earlier from Gottfredson and Gottfredson (2001) indicate that most programming occurs at the middle school level, suggesting that this limitation may not be of great concern.

Finally, our sequential method of data collection, in which respondents were first offered a web questionnaire followed by a paper questionnaire and a phone interview, may have introduced a mode effect. Post hoc analyses revealed that web respondents were more likely to report using an evidence-based curriculum, whereas phone respondents were less likely to report using one. We can not, however, definitively say that mode effects were present. It is possible that the late-responding districts are also late adopters of innovations. Such districts may not prioritize substance use prevention and, likewise, may not have been inclined to respond to our questionnaire until after repeated solicitations.

Our results clearly point to the need for increased use of evidence-based substance use prevention curricula for students in elementary grades. A considerable proportion of students have begun using substances by the time they reach middle school, the grade level at which most prevention curricula are implemented. As the review of elementary curricula conducted by Hopfer and colleagues in the current issue indicates, implementing curricula prior to middle school grades may hold promise in reducing or delaying the onset of substance use among preadolescents. As they point out, intervening at this developmental stage may be particularly effective because the risk factors associated with substance use may be more malleable as compared to those of older students. Given the well-documented adverse effects of early substance use, it is critical that school districts implement prevention curricula during elementary school that are evidence-based. Relying on curricula not shown to be effective threatens the ability of our elementary schools to assist in reducing the onset of substance use among our nation's children.

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Table 1

Proportion of school districts using evidence-based substance use prevention curricula targeting elementary school students

Curriculum	Used with students in elementary school grades (n=1472) % (95% CI)	Used most frequently with students in elementary school grades (n=1463) % (95% CI)
Caring School Community Program (formerly Child Development Project)[a]	2.2 (1.3, 3.1)	0.5 (0.1, 0.8)
keepin' it REAL[a]	1.8 (0.9, 2.7)	0.1 (0.0, 0.2)
Life Skills Training[a,b,c]	24.2 (21.2, 27.2)	6.5 (4.9, 8.1)
Positive Action[a]	4.8 (3.4, 6.2)	1.1 (0.4, 1.7)
Project TNT[a,c]	7.2 (5.6, 8.9)	1.4 (0.6, 2.3)
Protecting You/Protecting Me[a]	3.2 (1.7, 4.6)	0.3 (0.1, 0.6)
Seattle Social Development Project (SOAR)[a,b]	1.9 (1.1, 2.6)	0.1 (0.0, 0.2)
Social Competence Promotion Program for Young Adolescents (SCPP-YA)[a]	0.2 (0.0, 0.4)	*[d]
Too Good for Drugs[a]	7.9 (6.3, 9.6)	4.0 (2.9, 5.1)
Any evidence-based curriculum	35.3 (32.0, 38.6)	14.1 (11.8, 16.3)

[a] Identified as "model" or "effective" program by NREPP

[b] Identified as "model" or "promising"on Blueprints for Violence Prevention

[c] Identified as "exemplary" by the U.S. Department of Education's Office of Safe and Drug-Free Schools

[d] No districts reported using this curriculum most frequently