The Association Between Severity of Sanction Imposed for Violation of Tobacco Policy and High School Dropout Rates
Maurice W. Martin, Sarah Levin, Ruth Saunders

ABSTRACT This investigation explored the association between severity of sanctions imposed on students resulting from tobacco policy violation and the event dropout rate in South Carolina public high schools. The study employed a cross-sectional design (n=132). Surveys were mailed to school principals to assess tobacco policy and sanctions for violation. Severe sanctions were categorized as those resulting in the student being denied onsite instruction, such as out-of-school suspension or expulsion. General linear regression models adjusting for SES, ethnicity, and rural/urban status, tested for an association between event dropout rate and severity of sanction imposed. The mean dropout rate in 1998 for high schools in South Carolina was 2.58% (+1.74). Suspension of first violation and expulsion were associated with lower dropout rates. Suspension of second violation was not associated with dropout behavior while suspension at third violation was associated with higher dropout rates. Results from the study provide preliminary evidence that severe sanctions imposed for violation of tobacco policy may help reduce high school dropout rates. (J Sch Health 2000;70(8):327-330)

Tobacco use among teens has risen steadily over the past decade. More than 80% of tobacco use initiation occurs among individuals less than 18 years of age. The short and long-term health risks associated with tobacco use have been established in scientific literature. Tobacco use is often the first drug used by people who use alcohol, marijuana, and other drugs. Tobacco use among teens is currently one of the most compelling public health issues. Consequently, federal, state, and local policymakers have focused their effort toward making public facilities where teens spend time tobacco-free. Healthy People 2010 national objectives include a section aimed at reducing tobacco use among youth. Health Objective 27-11 supports the establishment of tobacco-free school environments through rigorous policy enactment and enforcement. Schools are currently under more pressure than ever to institutionalize strict no-tobacco policies and enforce strong sanctions for violation of those policies. Political pressure placed on the school communities addressing tobacco issues may conflict with other educational missions such as dropout prevention.

Keeping students from dropping out of school is a compelling issue in American education. High school dropout is as serious an issue as ever before with the personal and social consequences of dropping out growing worse. Changes in the national economy have increased the overall personal costs of dropping out of school. Advanced skills and technical knowledge have become common requirements for high-paying jobs and dropping out prevents one from obtaining needed skills. Many factors have been associated with dropout including poor academic achievement, ethnicity (especially among Hispanic), social/family problems, truancy, and substance abuse. Truancy has been shown to be associated with poor academic achievement, and is known to be a major factor contributing to premature educational termination or dropout. Low socioeconomic status (SES) is associated with diminished health status, making dropout and any behaviors associated with it a public health issue.

Students suspended or expelled from school miss a disproportionate number of educational hours compared to their peers who are not suspended. Rigorous policy concerning tobacco use in schools often employ the suspension or expulsion of students as disciplinary sanction of choice when dealing with tobacco policy violations; nationally, the use of suspension and expulsion is increasing. This approach adds to educational hours missed by at-risk students. For this reason, out-of-school suspension and expulsion may contribute to dropout behavior. Little evidence supports suspension and expulsion as effective in changing student behavior. This investigation explored the possible association between high school dropout rate in public high schools and the severity of sanctions imposed on students violating tobacco policy.

METHODS
Design and Sample
The study employed a cross-sectional design. Surveys were mailed by bulk mail with postage-paid return envelopes to all public high schools in South Carolina (N=184). The list of schools was obtained from the 1997-1998 Directory of South Carolina Schools provided by the South Carolina Department of Education. Where possible, the names of the school principal were used to address the envelopes. Nonrespondents received a follow-up letter a month after the initial mailing. Up to six attempts were made to contact the nonrespondent school personnel within three weeks after the second mailing. One hundred thirty two high schools returned a completed survey (72%
response rate). Excluded from the sample were private schools, alternative schools, and juvenile justice facilities.

Instrument
The survey instrument for the study was the School Principal Questionnaire (SPQ), an insert to the 1998 School Health Programming Survey (SHEP). The psychometric properties of the instrument have not been assessed. The SPQ was developed by the Office of School Health Education (OSHE) at the University of South Carolina with support from the American Stop Smoking Intervention Study (ASSIST) project to assess policies and sanctions pertaining to tobacco. Several questions were modeled after the School Health Policies and Programs Study. The SPQ included four sections: two regarding policy, two regarding sanctions.

Section one was designed to determine if policies were presently in place addressing possession and use of tobacco products. Section two assessed whether the policies were enforced. Section three of the SPQ solicited information about the severity of sanctions imposed on student violators of established policies for first, second, and third violations. Section four assessed the sanctions imposed on faculty and staff violators. This study is based on the data from section three. Results from sections one, two, and four are reported elsewhere.

Variables
The dependent variable, dropout event rate, was defined as the percent of students enrolled in grades 9-12 who leave school for any reason other than death prior to graduation or completion of a course of studies without transferring to another school or institution. Data characterizing the dropout event rate was obtained from the South Carolina State Department of Education, Research and Statistics Division for corresponding schools during the same year as the SPQ survey (1998-1999).

Sanctions severity ranged from: a) no action taken, b) parent notification, c) in-school suspension, d) in-school suspension with tobacco cessation programming, e) out-of-school suspension, and f) expulsion. For this investigation, variables of interest were those that cost students educational hours: out-of-school suspension and expulsion. 'Severe' sanction was defined as enforcing out-of-school suspension on the first smoking violation or ever expelling the student for tobacco violation.

Covariates included sociodemographic variables defined at the county level using US Census data. Ethnic composition was dichotomized at the state median for percent minority population (39.2%); that is, schools were located in counties above or below the median. Socioeconomic status (SES) was dichotomized above or below the state median for family income ($28,501). Rural status was assigned to schools located in counties where less than 50% of the population lived in cities or towns with at least 25,000 inhabitants; others were defined as urban as classified by the U.S. Census Bureau.

Data Analyses
Data were analyzed using SAS software. Descriptive

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<th>Table 1</th>
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<td>Suspension and Expulsion Rate for Violations of Tobacco Policies</td>
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<td>1st Violation</td>
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<td>N (%)</td>
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Note: By combining suspension at first violation and expulsion (ever) we defined "severe sanction." Sixty-two schools (47.0%) were classified as severe.

**Figure 1**
Association Between Severity of Sanction Imposed for Violation of Tobacco Policy and Dropout Rate

* P < 0.05
statistics were used to describe the dropout rates and the frequency with which suspension and expulsion were used as sanctions for violation of tobacco policies. General linear models were used to detect the unadjusted and adjusted association between 1) suspension and dropout rate, 2) expulsion and dropout rate, and 3) 'severe' sanction and dropout rate. The adjusted analyses controlled for known correlates of dropout rates (ethnicity, SES, urban/rural).

RESULTS
The mean dropout rate for high school students was 2.58% (s.d. = 1.74) with a range from 0 to 7.8%. Severity of sanctions imposed are summarized in Table 1. One-third of schools employed out-of-school suspension as the sanction for a first violation, and two-thirds of schools employed out-of-school suspension as the sanction for a second or third violation. Expulsion was rarely used at first or second violation, but 28% of schools employed expulsion for third violation of tobacco policy.

Figure 1 summarizes results from the regression analyses. In the unadjusted models, employing expulsion and/or 'severe' sanction were associated with lower dropout rates (p<0.05). Suspension at third violation was associated with a higher dropout rate (p<0.05). In the adjusted models, employing suspension at first violation and/or 'severe' sanction were associated with lower dropout rates (p<0.05). Expulsion also was associated with a lower dropout rate, yet the strength of this association did not reach statistical significance (p=0.06). Suspension at third violation remained associated with a higher dropout rate even after controlling for the covariates (p<0.05). Of the covariates, only ethnicity was significant. Schools in counties where the percent of minority population was higher than the state median had almost a 1% higher dropout rate than schools with lower percent minority population (p<0.05).

DISCUSSION
These analyses revealed that severe sanctions imposed for tobacco policy violations had an inverse relationship with high school student dropout rate. Even after adjusting for ethnicity, SES, and urban/rural status of the county, schools that imposed out-of-school suspension as a sanction for first time tobacco policy offenders, and schools that expelled students by a third offense, had approximately a 0.66% lower dropout rate than schools with less severe sanctions (p<0.05). The association between out-of-school suspension and dropout rate varied depending on how soon the sanction was employed. The adjusted analyses revealed a 0.67% lower dropout rate for schools that suspended for a first violation (p<0.05), and 0.10% lower dropout rate for schools that suspended for a second violations (n.s.), and a significantly higher dropout rate (0.66%) for schools that employed suspension as a sanction for a third violation (p<0.05). Swift and serious sanctions were associated with a protective effect on high school dropout, while delayed action such as suspension at third violation was associated with increased high school dropout.

Tobacco-free policies appear to play a crucial role in school-based intervention to reduce smoking. The Centers for Disease Control and Prevention (CDC) recommended enforcement of policy to prevent tobacco use in schools in its “Guidelines for School Health Programs to Prevent Tobacco Use.” Previous work has shown that nearly 97% of secondary schools in South Carolina have policies in place prohibiting use of cigarettes by students. The concern that prompted this investigation was the possibility that the tightening tobacco policy and the use of severe sanctions as enforcement to promote a healthier school environment while combating teen smoking might contribute to a higher dropout rate, thereby feeding the cycle of poor health and poverty through denied education. Results from this investigation imply that the contrary may be so.

Education literature suggests that schools that provide clear policy and strict enforcement for their students are the most effective schools with higher achievement scores and lower dropout rates. With policy come sanctions, and school discipline has two main goals: (1) to ensure the safety and well-being of staff and students, and (2) to create an environment conducive to learning. As we enter the next millennium, we should consider public health policy for schools in terms of sanctions with a sense of critical consciousness, being careful not to impose sanctions that exacerbate greater issues.

The most comprehensive investigation of dropout behavior comes from the 1988 National Educational Longitudinal Study (NELS:88/94) which followed a nationally representative sample of eighth graders for five years. More than 14% of the former students cited suspension as a reason for dropping out and 11.0% cited expulsion. Of these dropouts, only 13.3% of suspended students and 10.2% of expelled students completed high school by the five-year follow-up. It can be extrapolated from the NELS that failure to attend classes contributes to poor academic performance attributing to approximately another 32% of dropouts. These national data seem to support the underlying concern regarding out-of-school suspension and expulsion due to tobacco policy violations and dropout.

Results from the current investigation suggest that another line of reasoning may be more appropriate. Although speculative, several explanations can be offered. Perhaps severe sanctions imposed for violation of tobacco policy prohibit the advancement to other illicit drugs in the school environment, since tobacco usage has been associated with other risky behaviors. Perhaps tough sanctions contribute to a sense of a safe and healthy environment that is associated with low dropout rates. If so, the relationship uncovered in these analyses may have implications for policy in areas other than tobacco control.

Strengths and limitations of the investigation should be recognized. A limitation is that the results are based on reported policies and sanctions, and actual practices may vary. Since the data are cross-sectional, causality cannot be inferred regarding dropout rate and severity of sanctions imposed for tobacco policy violations. Future work should consider high school dropout rates over time in conjunction with tobacco policy placement and enforcement.

Since both tobacco use and dropout behavior are clearly important public health issues, this work adds to a body of literature that is limited at present. Known covariates of dropout behavior were controlled for in the analyses. Most notably, schools in counties where the percent of minority population was higher than the state median had almost a 1% higher dropout rate than schools with lower percent
minority population (p<0.05). The associations uncovered in these analyses are interesting and consistent with the literature promoting strict school policies.

Severe sanctions appear to be warranted for tobacco policy violators in terms of dropout behavior; however, future work should explore other methods of severe sanctions that would create the same effect and cost fewer educational hours. For example, "behavior change" type sanctions championed by public health professionals based in sound theoretical underpinning and involving educational or rehabilitational hours should be considered.

References

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