State Legislators' Beliefs About Legislation That Restricts Youth Access to Tobacco Products

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Better understanding of the cognitive framework for decision making among legislators is important for advocacy of health-promoting legislation. In 1994, the authors surveyed state legislators from North Carolina, Texas, and Vermont concerning their beliefs and intentions related to voting for a hypothetical measure to enforce legislation preventing the sale of tobacco to minors, using scales based on the theory of planned behavior. Attitude (importance), subjective norm (whether most people important to you would say you should or should not vote for the law), perceived behavioral control (ability to cast one's vote for the law), and home state were independently and significantly related to intention to vote for the law's enforcement. The results, including descriptive data concerning individual beliefs, suggest specific public health strategies to increase legislative support for passing legislation to restrict youth tobacco sales and, more generally, a framework for studying policy making and advocacy.

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Health educators have a long history of involvement in health policy interventions.[1-3] Environmental changes can support individual health-related behaviors or directly

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influence health through protection from harmful agents. Public policy changes have contributed to health promotion in areas such as injury control, reduced drinking and driving, occupational health and safety, water fluoridation, and tobacco prevention and control.[4] Brownson and colleagues have described elements of a comprehensive tobacco control policy; noted the importance of building capacity to influence policy at the national, state, and local levels; and called for increased use of data to drive and evaluate policy decisions.[5]

Recent applications of a social ecology framework to health promotion have refocused attention on the policy arena.[4] Within this framework, factors that influence health and health behavior are interrelated and occur at multiple levels (e.g., individual, group, organization, and government).[6-8] Bartholomew and colleagues for intervention mapping[9] and Simons-Morton and colleagues for MATCH[7,10] have described systems in which intervention objectives are set for each appropriate ecological level. Targets of intervention, defined as persons who control or have influence over intervention objectives at the societal level, are identified. Legislators are key targets for intervention because of their prominent role in the establishment of public policy affecting health. The health promotion advocate's task is to identify determinants of legislators' voting behavior that are amenable to intervention.

Adolescent smoking has been addressed by federal and state policy as part of an overall tobacco control strategy. The 1992 Synar Amendment required states to enact laws barring tobacco sales to minors and to establish ways to monitor compliance with these laws.[5] By the end of 1995, all states had passed minors' access laws, but enforcement was inconsistent and poor. According to 1996 U.S. Department of Health and Human Services (USDHHS) rules, states were required to submit annual reports on compliance with their minors' access laws and, in 1997, negotiate performance targets with the USDHHS.[11-13] Available research suggests that active enforcement of these laws has the potential to reduce smoking among teenagers.[14,15] Noncompliance with the Synar Amendment resulted in potential monetary penalties through loss of federal block grant money for substance abuse programs.[16] Consequently, many state legislatures were interested in strengthening and enforcing their legislation preventing youth access to tobacco. On March 21, 2000, however, the U.S. Supreme Court struck down the regulations that allowed the Food and Drug Administration to control tobacco products and to impose rules that reduced minors' access to tobacco.[16] Although this ruling dealt a blow to federal programs targeting tobacco education and enforcement, minors' access laws in individual states remained standing.

We undertook a study that examined state legislators' attitudes and voting intentions about tobacco-related legislation in 1994. This report focuses on the structure of state legislators' cognitions regarding the enforcement of laws to restrict tobacco sales to minors, using the theory of planned behavior as a framework.

As seen in a recent review by Godin and Kok, the theory of planned behavior and the closely related theory of reasoned action[17-19] have been used to study a variety of individual behaviors, including tobacco use,[20] physical activity,[21] condom use,[22] and citizens' voting.[23-25] A person's behavior, in this model, is most proximally related to his or her intention to perform the behavior. Intention is a function of attitude toward the behavior, subjective norm, and perceived behavioral control.[17]

The theory of planned behavior offers a means of explaining and predicting voting intention and behavior by citizens.[23-25] However, we argue that the model can also be applied fruitfully to the voting intentions of legislators, although the context of this

behavior is very different. Because policy decisions on smoking control legislation are generally made by statute rather than referendum, voting by legislators is policy relevant and is of theoretical interest in its own right as a behavior to be explained.

Political scientists have identified three key explanations for legislators' voting decisions: satisfying constituents, gaining political influence, and making good policy.[26,27] Personal values and "ideology" measures (including partisan affiliation) have also been found to be influential.[28,29] The relative importance of these factors depends on the legislative context (especially the type of legislation and the controversy surrounding it), the legislator's personal electoral security, and state political and economic characteristics.[28-33]

The theory of planned behavior proposes variables shown to be useful in predicting individual behavior but can also be construed to subsume, in a parsimonious and internally consistent model, the "grab bag" of variables that have been used previously by political scientists. Attitudes, measured as indirectly perceived outcomes and their values, encompass legislators' dispositions toward good public policy and ideology. Subjective norms, measured as perceived wishes of others and motivation to comply with them, include social pressure from personal network, legislative network, constituency, mass media, and lobbyists. Perceived behavioral control captures the perception of the ease of voting, including the higher system influences of blocking bills in committee so that they never come to the full legislature for a vote and the expectation of a bill's passage.

The primary purpose of this article is to describe the variables predicting state legislators' intentions to vote for or against a hypothetical measure to enforce legislation restricting tobacco sales to minors. An understanding of specific beliefs and normative influences held by legislators may allow health educators and other public health advocates working at the policy level to improve the effectiveness of their messages and approaches with legislators. A secondary aim is to examine the applicability of the theory of planned behavior to voting by legislators, a little-studied behavior that differs from the more frequently studied individual lifestyle behaviors.

METHOD

The *State Legislator Study* has been described previously.[34] Briefly, interviews were conducted with 444 of 529 (84%) eligible legislators from North Carolina, Texas, and Vermont between May and October 1994. Response rates by state were 86% ($n = 145$) for North Carolina, 71% ($n = 129$) for Texas, and 95% ($n = 170$) for Vermont. A greater proportion of respondents were Democrats (61%), male (76%), and Caucasian (86%), reflecting the composition of the three legislatures. Their mean age was 52.8 years and mean length of service was 7.4 years. Nonrespondents tended to be younger male professionals with slightly higher than average levels of legislative experience and status.

Measures

The measures used here were embedded in a larger interview survey that took approximately 35 minutes to complete. The interview was developed using feedback from advisory committees in the three states, preliminary focus groups and interviews, and a pilot test with 12 Georgia legislators. The larger study focused on intention to vote for legislation related to minors' access to tobacco, tobacco excise taxes, and clean indoor air by legislators in three states selected for variation in strength of existing tobacco control laws

and economic dependence on tobacco. Details of questionnaire development and administration have been reported elsewhere.[34]

Intentions to vote for legislation related to the prevention of tobacco use by youth was measured by assessing the legislators' perceived likelihood of voting for "a measure to enforce our state's law preventing youth under the age of 18 from buying cigarettes" on a 5-point Likert-type scale from *very unlikely* (1) to *very likely* (5). Prior to responding to this item, interviewees were read a list of enforcement mechanisms, as follows: "unannounced annual inspections of all merchants by an appropriate state agency, merchant education programs about the law, and a fine of $100 for failure to comply with the law." Because of the skewed responses, a two-category measure, in which *very unlikely*, *unlikely*, and *neutral* were collapsed for 18.3% of the cases and *likely* and *very likely* collapsed for 81.7% of the cases, was used as the dependent variable for the bivariate analyses and multiple logistic regressions.

Outcome beliefs were operationalized with five items related to the economic, public health, and personal career impacts of voting for a measure to enforce the state's law preventing youth younger than the age of 18 from buying cigarettes. The outcome belief items were measured on a 5-point Likert-type scale from *very unlikely* (1) to *very likely* (5). The outcome evaluation placed on each of these outcomes was measured on a 5-point Likert-type scale from *not important at all* (1) to *very important* (5).

Attitude cross products were computed for each belief evaluation combination. Prior to the creation of these variables, the scales for the positive behavioral beliefs (reducing initiation by young people, gaining favor with political leaders) were coded from *very unlikely* (1) to *very likely* (5), and their paired evaluations coded from *not important at all* (1) to *very important* (5). Scales for the three negative impacts (hurting cigarette sales, causing a loss of votes, causing a loss of campaign contributions) were coded from *likely* (1) to *very unlikely* (5) and their evaluations coded from *very important* (1) to *not important at all* (5). Thus, a high score on the attitude cross-product variables indicated perceptions that negative impacts were unlikely and not important, whereas positive impacts were likely and important.

Normative beliefs were measured as the extent to which each of 13 different referent groups of people would say that "you (the legislator) should or should not vote" for enforcement of the law. The five response categories ranged from *definitely should not* (1) to *definitely should* (5). The 13 groups included personal, political, media, and lobbyist referents. Motivation to comply was operationalized as "how likely or unlikely it is that you would be persuaded by the opinions of" each of the referent groups on a scale of *very unlikely* (1) to *very likely* (5).

Normative cross-product variables were created by multiplying scores for normative beliefs by their corresponding scores for motivation to comply. A higher score on these variables indicated perceptions that specific categories of persons whose opinions were important to the legislator thought they should vote for the measure.

A direct measure of attitude toward the act of voting was assessed using one item indicating how important it was "to enforce our state's law preventing youth under the age of 18 from buying cigarettes," using a 5-point Likert-type scale from *not important at all* (1) to *very important* (5). A direct measure of subjective norm was assessed using one item: whether "most people who are important and meaningful to you" would say you should or should not vote for the law, with response categories ranging from *definitely should not* (1) to *definitely should* (5).

Perceived behavioral control was operationalized using three 5-point Likert-scaled items that measured perceptions related to the ability to cast one's vote for a bill. The first

item, the likelihood "that the measure would not leave its assigned committee for a vote," is based on the legislative strategy of special interest groups blocking a bill at the committee level. It was coded from *very likely* (1) to *very unlikely* (5). The likelihood "that the measure would be passed" was scored from *very unlikely* (1) to *very likely* (5). Agreement that "it would be easy to vote the way you would want" about the measure was scored from *strongly disagree* (1) to *strongly agree* (5). Thus, each item was scored in the direction from low to high control. The three items were then summed to form a scale with a coefficient alpha of .55. This variable was dichotomized as low to moderate (range 3-11, 43.4%) and high (range 12-15, 56.6%) for the logistic regression analysis.

Political characteristics were operationalized with two variables, state (North Carolina, Texas, Vermont) and party (Democrat, Republican), that would be distal to the theory of planned behavior variables in predicting behavior. Dummy variables were created for the logistic regression analysis with North Carolina as reference state and Republican as reference party. Six legislators from Vermont classified themselves as "Independent" or "Other" and are not included in the analysis.

Data Analysis

Data analysis proceeded in four steps. First, we reported frequencies for intentions to vote, behavioral outcome beliefs and their associated outcome evaluations, normative beliefs and their associated motivation-to-comply variables, and perceived behavioral control items. Second, we examined the relationship between intention and each of the behavioral outcome beliefs, outcome evaluations, normative beliefs, and motivation-to-comply variables. For this analysis, multivariate analysis of variance was performed for each variable category for protection from an inflated alpha level due to multiple univariate tests.[35] Following a significant multivariate association, one-way analyses of variance were then carried out to test the bivariate associations. For the third analysis, to examine how completely we had measured attitude and subjective norms with the behavioral outcome beliefs and outcome evaluations and the normative beliefs and motivation-to-comply variables, we regressed the direct measure of attitude on the attitudinal cross products and the direct measure of subjective norm on the normative variable cross products. These regressions also indicated what specific variables were independently associated with the direct measures.

The final analyses employ multiple logistic regression to test the fit of our theoretical framework. The two-category intention to vote to enforce the minors' access legislation was the dependent variable. The direct measures of attitude and subjective norm, perceived behavioral control, party, and state were the main effects examined. We tested whether the first-order interactions of the theory of planned behavior variables with the dummy variables for state were significant to see whether separate models for each state needed to be specified. Interactions of attitude and subjective norm with perceived behavioral control were included to examine whether perceived behavioral control moderated the influence of these variables. The final model is reported in the results. Variance inflations factors (VIFs) were computed using linear regression for the main effect variables to assess whether multicollinearity influenced the results. A VIF larger than 10 is an indication of multicollinearity.[36] The VIFs ranged from 1.03 for party to 1.48 for the dummy variable for Texas.

Table 1. Behavioral Outcome Beliefs and Outcome Evaluations of Legislators for a Measure to Enforce Their State's Law Preventing Youth From Buying Cigarettes (in percentages; *n*s = 438-443)

	Behavioral Outcome Beliefs	Outcome Evaluations
	Likely/ Very Likely	*Important/ Very Important*
Public health impact		
Reduce the number of young people who start using cigarettes	38.6	90.1
Economic impact		
Hurt cigarette sales in stores that sell cigarettes	28.9	12.5
Political impact		
Cause you to lose votes in the next election	12.2	43.5
Cause you to lose campaign contributions for the next election	8.3	16.9
Cause you to gain favor with current political leaders, for instance the governor and party leaders	16.9	44.9

RESULTS

Frequency Distribution for Beliefs

As seen in Table 1, the great majority of legislators stated that reducing the number of young people who smoke cigarettes was a very important or an important outcome. More than one-third of legislators indicated that enforcing the youth access law would very likely or likely reduce the number of young people who smoke. A negative economic impact was felt to be very likely or likely to happen by slightly more than one-fourth of the respondents, and fewer saw any political impact of voting to enforce the legislation.

Half or more of the respondents reported that others would say they should or definitely should vote for the enforcement measure for 8 of the 13 referents addressed, including members of their personal network, the mass media, health/medical lobbyists, the governor, and district voters (see Table 2). Most persuasive of the groups were district voters, family members, and lobbyists for the medical society. The media and tobacco lobbyists were judged the least persuasive of all referent groups.

For the direct measure of attitude, 55.2% of respondents indicated that enforcing the state's law to prevent youth younger than 18 from buying cigarettes was very important, 26.5% that it was important, 12% neutral, 4.5% not important, and 1.8% not important at all. For the direct measure of subjective norm, 28.4% indicated that most people who were important and meaningful to them would say they definitely should vote for the law, 37.5% that they should, 26.8% neutral, 4.5% that they should not, and 2.7% that they definitely should not.

Three items were used to measure perceived behavioral control for voting on a measure to enforce the state's minors' access law. The majority of legislators (61.5%) indicated that it was unlikely that the bill would not leave its assigned committee. A similar proportion (59.4%) perceived that it would be passed. A considerably higher proportion (86.5%) agreed that it would be easy to vote the way they wanted to on the measure.

Table 2. Normative Beliefs of Legislators Concerning Referent's Expectations for How the Legislators Should Vote for a Measure to Enforce Their State's Law Preventing Youth From Buying Cigarettes and How Likely They Would be Persuaded by the Referent on the Measure (in percentages; *n*s = 435-444)

	Normative Beliefs	Motivation to Comply
	Should/ Definitely Should	*Likely/ Very Likely*
Personal network		
Members of your family	66.4	40.4
Personal friends	55.7	34.5
Legislative network		
Colleagues in the legislature	34.2	23.0
Leadership of the House/Senate	40.9	19.6
The governor	53.7	12.7
Staff members (North Carolina and Texas only; *n* = 258)	48.8	27.1
Constituency		
Voters from your district	49.7	49.2
General public in the state	47.1	27.0
Mass media		
Local mass media	55.6	6.5
National mass media	59.3	4.8
Lobbyists		
Lobbyists for nonprofit health organizations	89.4	32.1
Lobbyists for the medical society	89.5	40.2
Lobbyists for the tobacco industry	10.9	10.1

On our five-category measure of intention to vote for an enforcement measure, 58.9% responded very likely and 22.8% responded likely, whereas fewer than 10% responded unlikely or very unlikely.

Relationship Between Beliefs and Voting Intentions

To examine what belief structure differentiated legislators who did or did not intend to vote to enforce the state's law preventing youth from buying cigarettes, further analyses were performed on both outcome and normative beliefs. The sample was divided into intenders (who scored very likely or likely) and nonintenders (neutral, unlikely, and very unlikely). As seen in Table 3, the exact *F* statistics were significant for the multivariate analyses relating intent with behavioral outcome beliefs and outcome evaluations, indicating that the two intender groups differed in their underlying beliefs and evaluations. Follow-up bivariate analysis indicated that intenders were more likely than nonintenders to believe that enforcement of the measure would reduce the number of young people who started to use cigarettes and more likely to think that this outcome was important. Intenders were less likely than nonintenders to think that hurting cigarette sales was important and less likely to believe that voting for the measure would result in lost votes in the next election.

Table 3. Mean Outcome Beliefs and Outcome Evaluations of Legislators Who Do (I) Versus Those Who Do Not Intend (NI) to Vote for a Measure to Enforce Their State Law Preventing Youth Younger Than the Age of 18 From Buying Cigarettes

	Behavioral Outcome Belief[a]		Outcome Evaluation[b]	
	NI (n = 78)	I (n = 354)	NI (n = 75)	I (n = 355)
Public health impact				
Reduce the number of young people who start using cigarettes	2.2	3.1***	4.2	4.7***
Economic impact				
Hurt cigarette sales in stores that sell cigarettes	2.6	2.8	2.5	2.1**
Political impact				
Cause you to lose votes in the next election	2.5	2.0***	3.3	3.4
Cause you to lose campaign contributions for the next election	1.8	1.8	2.4	2.4
Cause you to gain favor with current political leaders, for instance, the governor and party leaders	2.3	2.4	3.0	3.3

a. Exact $F = 10.591$ (5,426 *df*), $p < .001$ for overall MANOVA; outcome beliefs are scored from 1 = *very unlikely* to 5 = *very likely.*
b. Exact $F = 7.111$ (5,424 *df*), $p < .001$ for overall MANOVA; outcome evaluations are scored from 1 = *not important at all* to 5 = *very important*.
**$p < .01$. ***$p < .001$.

A similar analysis for normative beliefs showed significant multivariate differences in underlying belief structure for nonintenders and intenders on the normative beliefs and motivation-to-comply items (see Table 4). Significant bivariate differences were found for eight of the normative belief items: the proximal social influences of family, friends, legislative colleagues, and House/Senate leadership; voters and the general public; the local mass media; and lobbyists for the medical society. In all cases, intenders were more likely than nonintenders to believe that these referents thought they should vote for the measure. Intenders were more likely than nonintenders to indicate they were likely to be persuaded by the general public and lobbyists for the nonprofit health organizations and for the medical society.

Multiple regression analyses indicated that the cross-product scale for attitude explained only 18.3% of the variance in the direct measure of attitude and that subjective norm explained 48.6% of the variance in its direct measure. Also, the correlations of the direct measures of attitude (.52) and subjective norm (.50) with intention were stronger than those of the cross-product scales for attitude (.30) and subjective norm (.40).

Multivariate Prediction of Voting Intentions

A series of multiple logistic regressions were performed with voting intention as the dependent variable and the direct measures of attitude and subjective norm, perceived behavioral control, party, and state as predictor variables. The most complex model predicted voting intention as a function of all predictors and their first-order interactions with state. This model was compared to models with each of the interaction terms removed in turn, then with all interaction terms removed. None of the chi-square tests comparing

Table 4. Mean Normative Beliefs and Motivation to Comply of Legislators Who Do (I) Versus Those Who Do Not Intend (NI) to Vote for a Measure to Enforce Their State Law Preventing Youth Younger Than the Age of 18 From Buying Cigarettes

	Normative Belief[a]		Motivation to Comply[b]	
	NI (n = 76)	I (n = 340)	NI (n = 80)	I (n = 357)
Personal network				
Members of your family	3.0	4.1***	2.9	3.0
Personal friends	2.8	3.8***	2.7	2.9
Legislative network				
Colleagues in the legislature	3.0	3.3**	2.6	2.7
Leadership of the House/Senate	3.1	3.4*	2.2	2.4
The governor	3.0	3.7	2.0	2.2
Constituents				
Voters from your district	2.7	3.5***	3.2	3.4
General public in the state	2.8	3.5***	2.7	2.9*
Mass media				
Local mass media	3.4	3.7*	2.0	2.0
National mass media	3.6	3.7	1.6	1.7
Lobbyists				
Lobbyists for nonprofit health organizations	4.4	4.6	2.5	3.0***
Lobbyists for the medical society	4.3	4.6**	2.7	3.3***
Lobbyists for the tobacco industry	1.6	1.8	2.1	2.1

a. Exact $F = 8.245$ (12, 403 df), $p < .001$ for overall MANOVA; normative beliefs are scored from 1 = *definitely should not* to 5 = *definitely should*.
b. Exact $F = 2.268$ (12,424 df), $p < .01$ for overall MANOVA; motivation to comply is scored from 1 = *very unlikely* to 5 = *very likely.*
*$p < .05$. **$p < .01$. ***$p < .001$.

these models was significant, indicating that the relationships between the predictors and voting intention were not moderated by state. We also tested the moderator relationship between perceived behavioral control and attitude and social norm, and neither interaction was statistically significant.

The main effects model indicated that perceived behavioral control was positively associated with voting intention (odds ratio [OR] = 3.11; 95% confidence interval [CI] = 1.57-6.18), as were subjective norm (OR = 2.56; 95% CI = 1.78-3.69) and attitude (OR = 2.28; 95% CI = 1.67-3.11). Of the political indicator variables, being from Texas was positively associated (OR = 2.78; 95% CI = 1.06-7.27) with legislators' intention to vote to enforce their state's minors' access law; being from Vermont (OR = 0.81; 95% CI = 0.40-1.66) and party (OR = 1.47; 95% CI = 0.77-2.80) were not significantly associated with intention.

For comparison, we examined the relationships when the indirect (cross-product) measures of attitude and subjective norms were substituted for the direct measures of attitude and subjective norm in the logistic regression equation. The odd ratios were smaller (OR = 1.04; 95% CI = 1.02-1.08 and OR = 1.02; 95% CI = 1.01-1.03, respectively), perceived behavioral control was strongest at 4.70 (95% CI = 2.40-9.20), and, of the distal variables representing state and party, only party was significant at 2.03 (95% CI = 1.10-3.78).

DISCUSSION

The theory of planned behavior framework yielded a parsimonious explanation of legislators' decision making and provided a useful test of which attitudinal and normative beliefs were related to legislators' voting intentions. In the multivariate test of the model, the three theory-based variables were each independently associated with intention. The odds of intending to vote for enforcement of the policy were more than three times higher among legislators with high perceived behavioral control compared to their colleagues with low to moderate perceived behavioral control. Both their beliefs about the outcome of voting for a measure and the support of their voting by significant others were important influences of intention for legislators, with a similar strength of association.

Our bivariate analyses showed that the outcome of preventing young people from starting to smoke was related to intention to vote, as were the normative influences of family, friends, legislative colleagues, district voters, the general public, and nonprofit health and medical society lobbyists. We did not find gaining political influence to be relevant; the opinions of legislative leadership and the governor, the impacts of losing votes or campaign contributions, and gaining favor with current political leaders were also not associated with intention. Our findings confirm the importance to voting decision making of good public policy, satisfying constituents, and opinions of other colleagues, identified previously by political scientists.[26,28,30]

Although the theory of planned behavior variables were significantly associated with legislators' intentions to vote for an enforcement measure to prevent youth access to cigarettes, it should be noted that much of the variance remains unexplained. Perhaps there are other legislator cognitive beliefs or legislative-level variables not measured that are important determinants of this voting intention. Kingdon[26] considered seven categories of idiosyncratic cues, or information sources: constituency, fellow legislators, party leadership, interest groups, administration committee or personal staff, and reading done by the legislator himself or herself. Our variables represented most of these categories but were by no means inclusive.

In recognition of the potential importance of context, we included the political environment variables of state and party, which are outside the theory of planned behavior framework, in our multivariate analysis. We found that legislators in Texas were more likely to intend to vote to enforce prevention of minors' access legislation than were their colleagues in Vermont and North Carolina. This result contrasts with intentions to vote for other tobacco control measures, including the prohibition of sales through vending machines, clean indoor air, and increasing cigarette excise taxes for which the voting intentions of Texas legislators were intermediate between those from North Carolina and Vermont legislators.[34] It may be that Texas legislators were more ready to vote for enforcement of existing laws than they were to create additional taxes or restrictions on smoking.

Alternatively, we had the lowest response rate in Texas; perhaps those least favorable to this measure were least likely to respond to the survey. The prevention of minor's access to tobacco appears to be a "motherhood" issue, with the majority of legislators endorsing it. All three states had passed such laws, and some legislators pointed out that a measure to enforce a current law was not needed. However, research in North Carolina and Texas, two of the states in our study, suggests that enforcement of youth access is inconsistent and poor.[37,38]

Political party was not significantly associated with intention in the multivariate analysis, although the bivariate association was significant, with Democrats more likely to

support the proposed legislation. The relationship between party and intention was mediated by the variables within the theory of planned behavior, supporting the view of the theory's developers that the model mediates the effects of more distal variables.[25,39]

According to the consensus model,[26] when there is no controversy in the environment regarding a bill, legislators will vote with the environment. Other cues, including the importance of constituents, political influence, personal beliefs, and perceived outcomes of public policy, become important if there is not agreement among a legislator's key influences. Interestingly enough, our normative beliefs analysis indicated that most legislators thought their legislative colleagues and the leadership were neutral or opposed to their voting for policy enforcement when, in fact, 82% of the legislators surveyed reported positive intentions to vote for the legislation. Other variables, including the public health policy impact, constituent opinions, personal relationships, and lobbying, suggest that this legislation is not perceived as without controversy. Thus, our findings would seem generalizable to bills that are viewed as being at least somewhat controversial.

IMPLICATIONS FOR PRACTICE

From a health education policy perspective, there is strong support among the legislators across the three states for enforcing laws to prevent youth from buying cigarettes. Among the respondents to our survey, fewer intended to vote for two other types of measures shown to reduce the initiation of smoking by young people: prohibiting the sale of cigarettes in vending machines and raising the cigarette excise tax.[34] Most legislators think it is important to enforce the law, and few see any political consequences from supporting this legislation regarding youth access. Thus, tobacco control advocates should be able to push for strong enforcement and monitoring of minors' access laws by their state legislatures.

Our results suggest a number of strategies to increase legislative support for enforcement of tobacco policy related to youth. Because the most important variable predicting intention was the policy's public health impact—the prevention of smoking among young people—advocates should aim to increase legislators' perceptions of the effectiveness of enforcement in preventing smoking and increase the salience of this outcome to legislators. Health and medical lobbyists (with whom the legislators are motivated to comply) should present scientific data showing the effectiveness of enforcement strategies and urge legislators to make a difference in this vital matter.

Lobbyists for nonprofit health organizations and medical societies have a unique opportunity to influence the public health agenda for tobacco control.[40] Positive subjective norms for these referents were associated with voting intention in our study. They are viewed as an important source of information, with the potential to persuade legislators, and a substantial proportion of legislators would like additional contact with them.[41] These lobbyists should increase the frequency of their visits and form personal relationships with legislators.[42,43]

Legislators do not perceive a high level of support for enforcement from their legislative colleagues (even though a high proportion indicated they intended to vote for such a measure) or from their constituents and the general public. Their inaccurate perceptions of their colleagues' intentions may actually inhibit their own voting intentions, particularly because perceived behavioral control was significantly related to intention. Health education advocates can encourage legislators to speak both privately and publicly in favor of tobacco control so that others can hold a more correct perception of support for

tobacco control. Also important is showing the strong public approval for limiting the access of minors to tobacco products and having visible support from constituents for enforcement in their communities.

There is some evidence that our findings with regard to prevention of minors' access to tobacco legislation are generalizable to other tobacco control issues. Flynn and colleagues,[44] in a study of intention to vote for tobacco excise tax increases using the same sample of state legislators, found similar odds ratios for attitude and subjective norm and larger odds ratios for the state and party contrasts, whereas perceived behavioral control was not significant. The larger odds ratios for state and party suggest that state economic factors, political context, and party ideology are more salient for excise tax legislation than for the enforcement of the prevention of tobacco sales to minors.

LIMITATIONS

Our research is limited in several ways. The design was cross sectional and did not include a measure of behavior. However, in one state, Vermont, we were able to link actual voting data on a health care reform bill that raised the tobacco excise tax with intention to vote for such legislation measured 8 months earlier. Strong predictive validity was shown.[45] In 1997, the Texas legislature passed a comprehensive minors' access measure including an amendment that made it both illegal to sell tobacco products to minors and illegal for minors to buy, a restriction on vending machines, a retail permit fee to administer enforcement and awareness programs related to the bill, penalization of minors for purchase or possession of tobacco, and placement of responsibility for enforcement and compliance testing on the Texas Comptroller of Public Accounts in partnership with law enforcement and for awareness and epidemiological reporting on the Texas Department of Health.[46] Although we were not able to link Texas legislators' earlier intentions to vote for such a measure to their voting behavior, the passage of this legislation is consonant with the strong support among legislators for the prevention of sales of tobacco to minors found in our 1994 survey.

Our measure of perceived behavioral control did not have high internal consistency, indicating that different concepts may have been measured. Ease of voting was indicated by most legislators, even though far fewer expected that such a measure would emerge from committee for a vote or be passed. Perceived behavioral control had been suggested as an important variable in our formative research prior to instrument development, and the fact that it was strongly related to intention in the multivariate analyses, given its relatively poor reliability, suggests that it is an important influence. More research is needed on the operationalization of perceived behavioral control in the legislative context.

In the current study, the cross-product attitude and subjective norm variables were not as strongly related as single measures to voting intention in either the bivariate or multivariate analyses. This is attributable to the fact that the single measure is an overall attitude measure, whereas the cross-product scale includes only those beliefs that were measured. It could be that we did not measure all beliefs. Thus, further research could develop additional or better measurement scales or items that would capture more of the respondents' attitudes or beliefs.

Glantz and Begay have shown a relationship between legislators' receipt of campaign contributions from tobacco lobbyists and a pro-tobacco-voting record.[47] Unfortunately, we were unable to include data on contributions in our analysis, perhaps limiting the realism of our study. Lack of voting record data also limits our ability to determine whether

the perceived persuasiveness of tobacco lobbyists represents a valid indicator or if the responses are influenced by social desirability.

Our research was conducted with legislators from three states chosen for their diverse representation in tobacco-related interests and legislation on tobacco control and does not reflect a random sample of state legislatures. The high response rate enables us to generalize to these three state legislatures, and results were consistent with research on similar problems using different states, conceptual approaches, and research methods, thus increasing confidence in these results. However, there have also been changes in representation from elections that occurred after our survey so that some legislators serving in these states after 1995 are not represented in these responses.

We took a number of steps to obtain valid data from these public figures; these steps included ensuring the respondents that the data were being collected for research purposes only, were confidential, and had safeguards to protect anonymity, including destruction of questionnaires and identifier codes. The variability of responses among legislators, the relationship of intentions to behavior found in the Vermont substudy mentioned above,[45] and the relatively strong explanatory model found for the prediction of intentions lend validity to the findings.

Since the time of the survey, legislative interest in youth tobacco issues has increased significantly. The Food and Drug Administration's initiatives to regulate nicotine as a drug and to limit tobacco advertising affecting youth heightened awareness, along with reports demonstrating rising youth tobacco consumption.[48-51] Also, the 46-state Master Settlement Agreement includes curbs on advertising and promotion of tobacco products to young people and funds programs designed to decrease youth tobacco consumption.[52] This difference in the current legislative context from that at the time of the survey may limit the generalizability of the findings to current and future youth-related tobacco legislation.

CONCLUSION

In summary, the legislature is an important arena for health education practice. It is valuable to learn more about the political process and how to influence relevant public health legislative decisions. This research offers and extends a framework from social psychology to better understand the mediators of legislator voting intention. The findings provide concrete suggestions for public health advocacy for tobacco control; they also allow specification of theoretical and empirical determinants of legislator voting for the design of programs using intervention mapping. The theory of planned behavior was found to be useful in delineating variables to be studied and provided a good fit to the data. Because of its parsimony, relatively few indicators will provide a strong prediction of legislators' intentions to vote for a particular bill. Further development of this model in a legislative context could yield additional insights on public policy decision making. Applications of our findings to interventions in health policy practice will also provide an opportunity to test the predictive validity of the model.

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