

# Assessing Support for Campus Tobacco Policy in Tobacco Country

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## Abstract

**Introduction:** Implementation of comprehensive tobacco policies has shown positive results regarding limiting exposure to secondhand smoke. While many states were moving forward with respect to implementation of tobacco policies, North Carolina has lagged behind in this regard. **Purpose:** The purpose of this study was to assess support for a comprehensive tobacco policy from university freshmen before implementation of campus policy and university freshmen after implementation of campus policy. **Methods:** A 43-item survey was administered to all university freshmen in a required physical education class in 2007 (N = 271) and in 2009 (N = 192). The smoker category included both daily smokers and social smokers (defined as “smoke only when I drink” or “smoke occasionally”). The nonsmoker category included “never smoked” and “former smoker.” **Results:** Results demonstrated high support for tobacco policy even in a culture that historically has supported tobacco use. Some significant changes were demonstrated both between 2007 and 2009 among all participants and between smokers and nonsmokers regarding components of a comprehensive campus tobacco policy. **Discussion:** As results demonstrated in this study, this campus had a high level of support for a campus policy giving the campus opportunities to change norms and decrease exposure to secondhand smoke. However, resources for enforcement and future studies regarding social smokers must be considered.

## Introduction

The 1996 Surgeon General’s report stated that smoking is the single greatest avoidable cause of disease and death in the nation (United States Department of Health and Human Services [DHHS], 2006). The American College Health Association (ACHA) acknowledged and supported the findings of the Surgeon General that tobacco use in any

form, active and/or passive, was a significant health hazard and that secondhand smoke has been classified as a Class-A carcinogen (ACHA, 2005). Studies conducted on the effects of secondhand smoke showed that 25% of nonsmokers exposed to secondhand smoke developed coughs, 30% developed headaches and nasal discomfort, and 70% suffered from eye irritations (Insel & Roth, 2006). Other nonsmokers reported sinus and allergy problems as a result of exposure to secondhand smoke. While these health effects may seem minor, nonsmokers who are regularly exposed to secondhand smoke face a 24-50% increased chance of developing lung cancer (Insel & Roth, 2006). Thus, decreasing exposure to secondhand smoke as a contribution to health is well documented.

Also well documented is the fact that the environment in which individuals participate has the potential to influence their smoking behavior and successful policies for reducing tobacco use also included restricting exposure to secondhand smoke (Forster, Widome, & Bernat, 2007; Hopkins et al., 2001; Loukas, Garcia, & Gottlieb, 2006). The fall 2006 National College Health Assessment reported 22% of college students used tobacco one or more days in the previous month (ACHA, 2007). The ACHA’s Healthy Campus 2010 goals included reducing cigarette smoking by college students to below 10.5% (ACHA, 2005). Research has demonstrated that reducing exposure and visibility of smokers contributed to decreasing the prevalence of smoking (Hopkins et al., 2001). Accordingly, the ACHA encouraged colleges and universities to be diligent in their efforts to achieve a campus-wide tobacco-free environment.

Policy advocacy has become an accepted health education strategy over the last decade, especially with regard to tobacco. Implementation of comprehensive tobacco policies has shown positive results regarding limiting exposure to secondhand smoke (Hopkins et al., 2001). Still, most college campuses do not have a comprehensive ban on smoking (Wolfson, McCoy, & Sutfin, 2009). The goal of developing tobacco policy is three-fold: (a) to reduce exposure to secondhand smoke, (b) to change the environment by decreasing social norms that say tobacco use is an acceptable behavior, and (c) to reduce smoking rates and costs to employers and communities. Implementation of such policies reflects community expectations and reinforces compliance (Adams, Jason, Pokorny, & Hunt, 2009).

In some cases, changes in state laws regarding exposure to secondhand smoke have supported campuses in their efforts to implement tobacco policies. The number of states implementing state-wide nonsmoking policies (i.e. mandating smoke-free restaurants, bars, and other public venues) has increased dramatically over the last several years. As of April 2009, 25 states were smoke-free states (i.e. implemented state

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mandates that all work places be smoke-free). Smoke-free college campuses in both smoke-free and non-smoke-free states have also increased in popularity. According to Join Together (2008), at least 140 campuses are smoke-free; 30 additional campuses are smoke-free with exceptions (i.e. designated smoking areas); and over 500 campuses have smoke-free residential areas. However, until recently, North Carolina has not had this option because of preemption.

Preemption refers to the concept that local governments cannot pass stricter regulations than what is outlined in state law. Historically, North Carolina had a strict preemption law (Smoking in Public Places, 1993) requiring that 20% of state controlled buildings be set aside for smoking. This law preempted local governments from passing stricter regulations. Ultimately this law effectively suppressed state agencies from enacting tobacco-free workplace policies as well as more expansive secondhand smoke elimination practices.

Nationally, the problem of preemption has slowly started to be addressed. Healthy People 2010, for example, included as one of its objectives to eliminate preemption in every state (Farrelly, Evans, & Sfekas, 1999). Progress in North Carolina has lagged behind other states. In July 2007, North Carolina SL 2007-193 was finally passed which declared all state buildings smoke-free (UNC Smoke Free-AB, 2007). In addition, the North Carolina General Assembly passed SL 2007-114 which allowed University of North Carolina (UNC) campuses to implement perimeter policies to ban smoking up to 100 feet from building entrances (Smoking in State Government Buildings, 2007). UNC tobacco-free campuses, however, are still not allowed. As a result of this change in state law, the UNC campus being studied here implemented its first tobacco policy effective June 1, 2008. This policy mirrored the ACHA's recommended policy and included such components as no sale or distribution of tobacco products, no advertising or acceptance of funds from tobacco companies, and a 25-foot smoke-free perimeter policy around all campus building entrances. More recently, House Bill 2 was signed by North Carolina's Governor which made all work sites (including bars and restaurants) smoke-free as of January 2, 2010 (An Act to Prohibit Smoking in Certain Public Places, 2010). This change in state law, however, still does not permit UNC campuses to implement 100% smoke-free policies.

The purpose of this study was to compare attitudes of university freshmen prior to the aforementioned legislation and university freshmen after both state law and campus policy were implemented. This study examined student attitudes about components of a comprehensive policy in a tobacco state. Examination of possible differences from 2007 (prepolicy) to 2009 (postpolicy) and between smokers and nonsmokers add to the literature regarding effective health education strategies that incorporate policy change. Reporting these differences could potentially assist this campus and others if allowed to advocate for a tobacco-free campus.

## Methods

### Participants and Campus

The participating UNC campus represented here had a fall 2006 student enrollment of 11,848 and a fall 2008 enrollment of 12,186. At the time of the initial study, the university did offer free smoking cessation services and coaching for students, faculty, and staff through its substance abuse prevention unit and university health services. Advertising and selling of tobacco products on campus was not practiced even though a formal policy did not exist that prohibited this practice. Campus buildings and residence halls were declared smoke-free, but preemption restricted the publication of an official policy. Some individual campus buildings had declared smoking perimeters around their buildings and posted no smoking signs, but a consistent practice did not exist for all buildings. A Campus Tobacco Coalition (CTC), representing faculty, staff, students, and administrators, was formed to advocate for a policy that was essentially illegal at the time. Survey participants included incoming university freshmen both before implementation of state and campus policies and incoming university freshmen after implementation of these policies.

### Instrument

A 43-item survey was utilized for this study, adapted from existing surveys utilized by other campuses. The survey addressed support for each component of a comprehensive policy as outlined by the ACHA (2005). Content and face validity were achieved by sending the survey to two experts in the fields of health education and in quantitative methods. Construct validity was achieved by conducting an exploratory and confirmatory factor analysis. In addition, the CTC reviewed and approved the final version of the survey. The survey received approval from an institutional review board and was administered in the spring of 2007 and again in the spring of 2009. Each component of what is considered important in a comprehensive tobacco policy was presented in the form of a statement. Participants were able to choose from a four point Likert scale (strongly disagree, disagree, agree, strongly agree). The items were condensed to four categories after factor analysis: (a) designated smoking areas; (b) indoor smoking; (c) policy enforcement; and (d) distribution and sale of tobacco products on campus.

Demographics collected included gender, race, age, and smoking status. Because of the small sample of daily smokers (6%), for the purposes of this study smoking status was defined as smokers who classified themselves as "daily smoker" or "smoke only when I drink" or "smoke less than one cigarette per day." Nonsmokers were defined as "never smoked" or "former smoker."

## Procedures

The survey was administered to all students in a required physical education class. The primary investigator attended all sections of the class, informed students of the purpose of the survey, and indicated they could refuse to participate. All students present on the day of administration chose to participate (N = 480 in 2007; N = 337 in 2009). Analysis of the demographics of all classes, with the exception of freshmen students, showed low representation. Freshmen students represented 57% of the total participants in 2007 and 70.75% total participants in 2009. Therefore, only freshmen students (2007: N = 271; 2009: N = 192) were considered for analysis for both administrations of the surveys, since this is the representative sample obtained in this study. Data was analyzed using the statistical software SAS 9.1 (SAS Institute, Cary, NC). Frequencies for all questions in the survey were created and examined, along with cross-tabulations with smoking status. Statistical significance was determined using Chi Square and Fisher's Exact Test ( $p < .05$ ) for smaller sample sizes. An exploratory factor analysis (Gorsuch, 1983) was performed on the data sets from both

years to identify underlying latent factors. The SAS procedure PROC FACTOR revealed four factors illustrated in Table 1. Using the SAS procedure PROC CALIS, a confirmatory factor analysis (Brown, 2006) was performed with the four latent factors with a goodness-of-fit statistic of 0.9266 and an adjusted goodness-of-fit statistic of 0.9006.

## Results

### Demographics

Because the survey was administered in a required physical education class, a cross representation of university freshmen was highly likely and matched descriptors of all freshmen from university records with regard to sex and Caucasian students. There was a slightly higher representation in this sample of African American, Hispanic, Multi-Racial, and Asian students as compared to all university freshmen. In 2007, 70% (n = 188) of freshman were nonsmokers and 30% (n = 83) were defined as smokers. In 2009, the percentage of nonsmokers remained the same while the percentage of smokers dropped to 22%. The remaining participants did not respond to this question. All participants were freshmen

Table 1

### *Factor Analysis*

Factors	Questions from study
Factor 1 Policy enforcement	<p>People who violate non-smoking policies should be assessed a monetary fine.</p> <p>Non-smoking policies should be enforced by University Police.</p> <p>Non-smoking policies should be enforced by administrative personnel in each building.</p> <p>Students should be involved in enforcement of tobacco free policies.</p> <p>People who violate non-smoking policies should be required to participate in community service on campus.</p>
Factor 2 Distribution and sales of tobacco products on campus	<p>The sale of tobacco products should be permitted.</p> <p>Free tobacco distribution should be permitted on campus.</p> <p>Distribution of coupons for free or discounted tobacco products should be permitted on campus.</p> <p>Advertising of tobacco products should be permitted.</p>
Factor 3 Designated smoking areas	<p>People should be allowed to smoke on campus in designated smoking areas.</p> <p>Smoking should be allowed 25 feet away from building entrances.</p> <p>Cigarette butt buckets should be provided for every building.</p> <p>Smoking huts should be provided in specified areas on campus.</p>
Factor 4 Indoor smoking	<p>Smoking should be permitted in residence halls.</p> <p>Smoking should be permitted in campus-owned apartments.</p> <p>Smoking should be permitted in all doorway entrances.</p> <p>Smoking should be permitted in all campus indoor athletic facilities.</p>

Table 2

*Participant Demographics by Year*

	Smokers (social and daily smokers)		Nonsmokers (never smoked and former smokers)	
	2007	2009	2007	2009
<b>Gender</b>				
Male	50.60%	44.44%	29.20%	24.50%
Female	49.40%	55.56%	70.74%	75.50%
<b>Ethnicity</b>				
Caucasian	89.16%	82.22%	88.83%	94.04%
African American	4.82%	2.22%	4.79%	1.99%
Hispanic	2.41%	8.89%	2.13%	.66%
Multi-racial	1.20%	4.44%	2.66%	1.99%
Asian	2.41%	0%	.53%	1.32%
Other	0%	2.22%	1.06%	0%

between the ages of 17 and 20. Demographics of participants are described in Table 2.

### Designated Smoking Areas

In both 2007 and 2009, the majority of participants agreed that smoking should be allowed in designated areas on campus. Even nonsmokers believed that some concessions, such as butt buckets and smoking huts, should be allowed for smokers. Providing smoking huts in specified areas on campus demonstrated significant differences in smokers, increasing from 55.56% in 2007 to 82.22% in 2009. However, all participants were less tolerant of allowing smoking where others would likely be exposed. In 2007, 25% of smokers and only 6.42% of nonsmokers agreed that smoking should be allowed in all doorway entrances and in 2009, after implementation of a 25 foot perimeter policy, 17% of smokers and only 3.31% of nonsmokers agreed that smoking should be allowed in doorway entrances. None were statistically significant. All differences in agreement between smokers and nonsmokers by year are reported in Table 3.

### Indoor Smoking

Questions regarding indoor smoking in general areas (i.e. residence halls, indoor athletic facilities, doorway entrances, and campus owned apartments) for both years ranged in agreement from 1.32% to 36.14% but with no statistical differences between 2007 and 2009. Smokers expressed the highest agreement for indoor smoking in campus owned apartments in 2007 but agreement decreased in 2009. Similarly, nonsmokers expressed the highest agreement for smoking in campus owned apartments in 2007 but decreased in 2009. The lowest agreement for both groups

was demonstrated with the statement “Smoking should be permitted in all indoor athletic facilities.” All differences in agreement among smokers and nonsmokers by year are presented in Table 4.

### Distribution and Sales of Tobacco Products on Campus

Overall, agreement with the distribution, sale, and advertisement of tobacco products on campus indicated low agreement. Nonsmokers expressed significant disagreement both in 2007 and 2009 with questions regarding free distribution of tobacco products and distribution of coupons for free or discounted tobacco products, but only slight differences were observed among smokers. Agreement with free distribution of tobacco products on campus increased among smokers, but decreased among nonsmokers between 2007 and 2009, but none were statistically significant. Allowing tobacco companies to advertise and sell their products on campus yielded higher levels of agreement (especially among smokers) than smoking in common places, but still represented the minority. When asked if tobacco companies should be allowed to advertise on campus, participants indicated a 22% agreement overall in 2007 and 16% agreement overall in 2009. Sale of tobacco products indicated a 34% agreement overall in 2007 and 26% agreement in 2009. Differences between smokers and nonsmokers in 2007 and 2009 regarding distribution, sale, and advertising are presented in Table 5.

### Policy Enforcement

Questions regarding penalties for violating tobacco-free policies yielded several significant differences between university freshmen in 2007 and university freshmen in

Table 3

*Percent Agree/Strongly Agree with Designated Smoking Areas*

Question	Smokers				Nonsmokers			
	2007 n = 83	2009 n = 43	Chi Square	Fishers Exact Test	2007 n = 188	2009 n = 149	Chi Square	Fishers Exact Test
People should be allowed to smoke on campus in designated areas.	87.95	93.33	.33	.54	76.60	71.62	.29	.31
Smoking should be allowed 25 feet away from building entrances.	75.90	77.27	.86	1.00	56.90	52.00	.36	.38
Cigarette butt buckets should be provided for every building.	89.16	91.11	.72	1.00	86.17	79.33	.09	.10
Smoking huts should be provided in specified areas.	55.56	82.22	.00	.00	56.45	56.00	.93	1.00

2009. Agreement with all of the enforcement questions, with the exception of one, decreased among smokers and increased among nonsmokers from 2007 to 2009 ( $p < .05$ ). Nonsmokers' agreement with the statement "People who violate nonsmoking policies should be assessed a monetary fine" increased from 73.26% to 86.09% ( $p = .0047$ ). In addition, 79.68% of nonsmokers in 2007 and 90.73% of nonsmokers in 2009 agreed that nonsmoking policies should be enforced by administrators in each building ( $p = .0061$ ). A statistically significant increase in agreement by nonsmokers was demonstrated by the statement "Students should be involved in the enforcement of tobacco policies" ( $p = .0023$ ). Agreement was also high among smokers regarding the involvement of students in enforcement. All differences between smokers and nonsmokers by year are reflected in Table 6.

### Discussion

While many survey questions did not demonstrate significant differences between university freshmen in 2007 and university freshmen in 2009, measuring support and building upon it while state law finally changed, allowed this campus to pass its own policy. When this study was first conducted in 2007, a campus tobacco policy was against state law. However, the 2007 administration of this study demonstrated that support and knowledge of effective tobacco policies were high, creating a strong argument for passage of a comprehensive policy. As this campus reviewed options

for a comprehensive tobacco policy, emphasis was especially placed on reducing exposure to secondhand smoke. Over 62% of university freshmen indicated agreement with a minimum of a 25 foot perimeter policy. In addition, the majority of university freshmen did not believe smoking should be allowed in public buildings on campus. This high level of agreement demonstrated to administrators that support and readiness were present to implement, at a minimum, nonsmoking in buildings and a perimeter policy.

While tobacco advertising, sale, and distribution of tobacco products were not conducted on this campus, putting such policies in writing strengthened the commitment of the campus community in this aspect of a tobacco policy. Penalties for violation of these policies also yielded high support from all participants. At the time of this study, this campus did not have an established enforcement policy other than general wording in the Code of Student Life. As demonstrated in previous research, enforcement of tobacco policies, and not necessarily the comprehensiveness of a policy, had a greater influence on smoking rates (Adams et al., 2009). Thus far, the campus has focused on publicizing and creating positive social pressure to enact the policy. Agreement with enforcement policies was very positive as policy enforcement is being considered. However, less agreement was demonstrated for moving toward a 100% tobacco-free campus. This is consistent with other studies showing that although students understand the dangers of secondhand smoke, even nonsmokers believe that smokers should be allowed to smoke somewhere on campus (Zlouksd,

Table 4

*Percent Agree/Strongly Agree with Indoor Smoking*

Question	Smokers				Nonsmokers			
	2007 n = 83	2009 n = 43	Chi Square	Fishers Exact Test	2007 n = 188	2009 n = 149	Chi Square	Fishers Exact Test
Smoking should be permitted in residence halls.	10.84	11.11	.96	1.00	4.26	3.31	.65	.77
Smoking should be permitted in all doorway entrances.	25.30	17.78	.33	.38	6.42	3.31	.19	1.00
Smoking should be permitted in campus owned apartments.	36.14	26.67	.27	.32	12.23	11.92	.92	.13
Smoking should be permitted in all campus indoor athletic facilities.	2.41	2.22	.94	1.00	2.15	1.32	.56	.69
Smoking should be permitted in all outdoor athletic facilities.	39.76	51.11	.21	.26	21.93	11.92	.01	.02
Smoking should be permitted everywhere on campus.	15.66	17.78	.75	.80	7.45	1.32	.00	.00

Barcia, & Gottlieb, 2006).

State policy changes at the time of this study may have contributed to some of the results. First, in 2008, the law requiring all middle and high school campuses to be 100% smoke-free was implemented. Because of this, it may be assumed that the culture had already started to change for 2009 university freshmen. A lower tolerance of secondhand smoke may be a result of this change as studies have indicated that implementing 100% smoke-free middle and high schools resulted in lower smoking rates among youth (Goldstein et al., 2003; Moore, Roberts, & Tudor-Smith, 2001; Wakefield et al., 2000).

Nonsmokers in 2009 felt more strongly about consequences for smokers than those entering prepolicy. It is possible that nonsmokers were more educated about the policy and assumed smokers were too. Smokers felt more strongly about having students be involved in the enforcement of the policy. Research suggested that participants experience greater success when there is ownership (Goldstein et al., 2003). Perhaps smokers felt more that they were being

represented when their peers were doing the enforcing. Smokers also felt more strongly about the provision of smoking huts, which might be expected since smokers were no longer allowed to smoke in doorways and would need such a place during inclement weather. Agreement with any of the enforcement questions declined among smokers between 2007 and 2009, which may be a result of the feeling of loss of rights and would need further study.

As 100% of these participants were university freshmen, a policy change had the greatest chance of impacting the campus environment in the near future. Policy change could contribute to the beginning of a culture change with regard to tobacco use for this campus. Focusing on first year students, when analyzing support for any change efforts, may be more effective and efficient to improve support for development of strategies for promotion and enforcement of a policy. Continuing to measure and build upon this support will assist this campus in moving forward with additional policy initiatives.

While the number of smokers among this group was low,

Table 5

*Percent Agree/Strongly Agree with Sale and Distribution of Tobacco Products*

Question	Smokers				Nonsmokers			
	2007 n = 83	2009 n = 43	Chi Square	Fishers Exact Test	2007 n = 188	2009 n = 149	Chi Square	Fishers Exact Test
The sale of tobacco products should be permitted on campus.	60.24	53.33	.44	.46	22.87	18.54	.33	.35
Free tobacco distribution should be allowed on campus.	33.73	42.22	.34	.34	9.04	5.96	.28	.31
Distributions of coupons for free or discounted tobacco products should be permitted on campus.	49.40	48.89	.95	1.00	17.02	7.95	.01	.01
Advertising of tobacco products should be permitted on campus.	36.14	28.89	.40	.43	15.96	12.67	.39	.43
Campus athletics and student organizations should be permitted to receive sponsorship and/or funding from tobacco companies.	45.78	40.00	.52	.57	31.02	22.67	.08	.10

the number who consider themselves social smokers (“smoke only when I drink” and “smoke less than one cigarette a day”) was higher than expected (25%). Previous research has suggested that as much as 51% of college students studied were social smokers (Moran, Wechsler, & Rigotti, 2004). Considering the addictiveness of nicotine, this will be another area for future study for this campus not only regarding policy but for effective interventions.

While policy change in itself is perceived as a difficult health education strategy, advocating for policy change in a state in which tobacco policies were illegal was especially difficult. However, the literature suggested that such environmental approaches can change social norms and redefine what is acceptable in a community (Hays, 2002). In the big picture of reducing tobacco use on college campuses, messages about tobacco given in a classroom or through student health services cannot be effective without strong environmental messages that reinforce a tobacco-free lifestyle. The change in state law and implementation of a campus policy were both major steps in North Carolina. Potential changes in the numbers of people who smoke will

be monitored closely.

There were limitations in this study. The first limitation was the convenience sample. No measure was in place to ensure a cross-representation of all students, faculty, staff, and administration and resulted in using freshmen data only. Further analysis regarding the support of such key members of this community, who have been impacted by this policy, is warranted and recommended. Because the study only included university freshmen, rather than the entire campus, the sample size decreased. However, the researchers felt it more important to generalize results to university freshmen on this campus. Because the physical education class was a requirement, a cross representation of freshmen students was highly likely and matched descriptors of this group from university records.

The results of this study represent this particular UNC campus and were not intended to represent all UNC campuses that may have their own policy and methods of enforcement. However, for any campus moving toward tobacco policy for the first time, lessons can be learned from this study regarding areas to focus for support for each component of a

Table 6

## Percent Agree/Strongly Agree with Policy Enforcement

Question	Smokers				Nonsmokers			
	2007 n = 83	2009 n = 43	Chi Square	Fishers Exact Test	2007 n = 188	2009 n = 149	Chi Square	Fishers Exact Test
People who violate nonsmoking policies should be assessed a monetary fine.	44.44	46.67	.81	.85	73.26	86.09	.00	.00
Nonsmoking policies should be enforced by University Police.	49.38	48.89	.95	1.00	72.73	86.75	.00	.00
Nonsmoking policies should be enforced by administration in each building.	61.73	60.00	.84	.85	79.68	90.73	.00	.00
Students should be involved in enforcement of tobacco free policies.	53.09	71.77	.04	.05	69.98	83.44	.00	.00
People who violate nonsmoking policies should be required to participate in community service in campus.	51.85	51.11	.93	1.00	77.54	83.44	.17	.21

comprehensive policy, especially with regard to enforcement. As enforcement has been considered such a strong component in a successful tobacco policy, this campus would benefit by using the high numbers of agreement with varying methods of enforcement to present to administrators. Future study for this campus may focus on which specific method(s) of enforcement would yield the most support.

Differentiation between attitudes of daily smokers and social smokers is needed. Such high support for smoke-free areas from the “smoker” category could be the result of combining the daily smoker and social smoker classifications. Research regarding how college students identify with smoking status reflected that many social smokers did not identify as being a smoker (Levinson, Campo, Gascoigne, Jolly, & Zakharyan, 2007). Therefore, social smokers may have answered the survey questions with a nonsmoker mentality. Examining differences between social smokers and daily smokers will be explored in a future study.

Comprehensive tobacco policies have demonstrated results in reducing exposure to secondhand smoke. This study demonstrated that, even in a tobacco state, support for campus policies was high. Continued measurement of this

support with this population will allow this campus to know what areas may need improvement or new strategies that may need to be implemented. The data presented here specifically demonstrated that even though being part of a culture that has historically supported tobacco use, policy initiatives can begin a transformation of the norms.

### Translation to Health Education Practice

Health educators assigned the task of advocating for policy can face difficult challenges. All pieces of a comprehensive policy discussed here had been deemed as important aspects of creating a tobacco-free environment, but this information alone did not convince administrators at this campus of the need for such a policy. Actual implementation of, and opposition to, such policies can be intimidating to health educators in any setting (ACHA, 2005; Hopkins et al., 2001). While North Carolina law provided some barriers in moving forward with a 100% tobacco-free policy, this study and recent amendments to the law demonstrated steps in the right direction in protecting students, faculty, and staff from the dangers of tobacco use and secondhand smoke. Health

educators can learn from the progress of this campus, and this state, that advocacy efforts are not futile.

Collecting data regarding attitudes and support of a potential policy was essential to passing policy on this campus. The researchers used the Community Readiness Model to develop strategies to increase such support (discussed in Whipple, Caldwell, Simmons, & Dowd, 2008). Data collected in 2007 regarding support for a comprehensive tobacco policy was presented to Faculty Senate, Staff Council, Student Government Association, Residential Life, and the Chancellor's Cabinet. Health educators can learn from this process in remembering to always take time to collect data from the target audience and use this data to gain support from key people and groups. All of these steps are essential components in successful advocacy efforts.

### References

- Adams, M. L., Jason, L. A., Pokorny S., & Hunt, Y. (2009). The relationship between school policies and youth tobacco use. *Journal of School Health, 79*(1), 17-23.
- American College Health Association. (2005). Position statement on college and university campuses. Retrieved from [http://www.acha.org/info\\_resources/tobacco\\_statement.pdf](http://www.acha.org/info_resources/tobacco_statement.pdf)
- American College Health Association. (2007). American College Health Association-National College Health Survey web summary: Updated April 2007. Retrieved from [http://www.acha-ncha.org/data\\_highlights.html](http://www.acha-ncha.org/data_highlights.html)
- An Act to Prohibit Smoking in Certain Public Places and Certain Places of Employment, 2 N.C. § S.L. 2009-27 (2010).
- Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York, NY: The Guilford Press.
- Farrelly, M. C., Evans, W. N., & Sfekas, A. S. (1999). The impact of workplace smoking bans: Results from a national survey. *Tobacco Control, 8*, 272-277.
- Forster, J. L., Widome, R., Bernat, D. H. (2007). Policy interventions and surveillance as strategies to prevent tobacco use in adolescents and young adults. *American Journal of Preventive Medicine, 33*(6S), S335-S339.
- Goldstein, A. O., Peterson, A. B., Ribisl, K. M., Steckler, A., Linan, L., McGloin, T., & Patterson, C. (2003). Passage of 100% tobacco-free school policies in 14 North Carolina school districts. *Journal of School Health, 73*(8), 293-299.
- Gorsuch, R. L. (1983). *Factor analysis*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Hays, S. (2002) *Communities aligned to reduce drinking and smoking*. Springfield, IL: Prevention First, Inc.
- Hopkins, D. P., Briss, P. A., Ricard, C. J., Husten, C. G., Carande-Kulils, U. G., Fielding, J. E., . . . The Task Force on Community Preventive Services. (2001). Reviews of evidence regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke. *American Journal of Preventive Medicine, 20*(2S), 16-66.
- Insel, P. M., & Roth, W. T. (2006). *Core concepts of health* (10th ed). New York, NY: McGraw-Hill.
- Join Together (2008). Retrieved from [www.jointogether.org/news/headlines/inthenews/2008/smoke-free-campus-on-the.html](http://www.jointogether.org/news/headlines/inthenews/2008/smoke-free-campus-on-the.html)
- Levinson, A. H., Campo, S., Gascoigne, J., Jolly, O. & Zakharyan, A. (2007). Smoking but not smokers: Identity among college students who smoke cigarettes. *Nicotine & Tobacco Research, 9*(8), 845-852.
- Loukas, A. L., Garcia, M. R., & Gottlieb, N. H. (2006). Texas college students' opinions of no-smoking policies, secondhand smoke, and smoking in public places. *American Journal of College Health, 55*(1), 27-32.
- Moore, L., Roberts, C., & Tudor-Smith, C. (2001). School smoking policies and smoking prevalence among adolescents: Multi level analysis of cross-sectional data from Wales. *Tobacco Control, 10*, 117-123.
- Moran, S., Wechsler, H., & Rigotti, N. A. (2004). Social smoking among US college students. *Pediatrics, 114*(4), 1028-1032.
- Smoking in Public Places, 64 N.C. § G.S. 143-595 (1993).
- Smoking in State Government Buildings/Prohibition, 24 N.C. § S.L. 2007-193 (2007).
- UNC Smoke Free-AB, 862 N.C. § S.L. 2007-114 (2007).
- United States Department of Health and Human Services. (2006). The health consequences of involuntary exposure to tobacco smoke: A report of the Surgeon General. Retrieved <http://www.surgeongeneral.gov/library/secondhandsmoke/factsheets/factsheet1.html>
- Wakefield, M. A., Chaloupka, F. J., Kaufman, N. J., Orleans, C. T., Barker, D. C., & Ruel, E. E. (2000). Effect of restrictions on smoking at home, at school, and in public places on teenage smoking: Cross sectional study. *British Medical Journal, 321*, 333-336.
- Whipple, K., Caldwell, R., Simmons, S., & Dowd, D. (2008). Using the Community Readiness Model to assess readiness for campus tobacco policy. *American Journal of Health Studies, 23*(2), 89-96.
- Wolfson, M., McCoy, T., & Sutfin, E. L. (2009). College students' exposure to secondhand smoke. *Nicotine and Tobacco Research, 11*(8), 977-984.
- Zlouksd, A. L., Garcia, M. R., & Gottlieb, N. H. (2006). Texas college students' opinions of no-smoking policies, secondhand smoke, and smoking in public places. *Journal of American College Health, 55*(1), 27-32.