Tobacco-free Take Action!:

Increasing Policy Adherence on a College Campus

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Abstract

Introduction: One in five college students report tobacco use, thus universities are making strides to reduce tobacco use by adopting smoke- or tobacco-free policies. **Purpose:** Describe an innovative ambassador program to increase adherence with a tobacco-free campus policy. Methods: The Tobacco-Free Take Action! (TFTA!) Ambassador program was created to form an environment of compliance. Hot spots were targeted by Ambassadors, who were trained to use scripted messages. Ambassadors completed an online documentation form to assess the number of violators observed and approached. The Tobacco-Free Compliance Assessment Tool (TF-CAT) was used to collect pre- and postcigarette butt data at each hot spot. **Results:** During the 4-week intervention period, Ambassadors approached 332 violators (529 observed), of which 68% responded positively and complied with the policy. The number of cigarette butts declined by 25%. Discussion: Adherence with campus tobacco-free policies remains a challenge. Lessons learned from this innovative approach will benefit those currently implementing and planning tobacco-free campus policies. **Key Words:** compliance, policy, tobacco-free, campus, college, university

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Introduction

Smoking is the single greatest avoidable cause of disease and death in the United States, attributing to 443,000 deaths annually (USDHHS 2006; 2010), yet 19% of U.S. adults report current cigarette smoking (USDHHS 2010). Beyond the individual risk, any exposure to tobacco smoke is harmful (USDHHS 2006; 2010). Nonsmokers exposed to secondhand smoke at home or work increase their risk of developing heart disease by 25-30% and lung cancer by 20-30% (USDHHS 2006; 2010). Considering these increased health risks, efforts to reduce tobacco use and combat secondhand smoke exposure are critical to reduce the societal burden of tobacco use.

Tobacco use on college campuses remains a concern, with approximately 1 in 5 college students reporting use of any type of tobacco product (Johnson et al. 2008). According to the most recent data by the American College Health Association (ACHA), 15.2% of college students have used cigarettes within the last 30 days (ACHA 2011a), with reported higher rates (17.3%) when considering lifetime use and/or use of additional tobacco products. Other forms of tobacco have gained popularity among college students including waterpipes (hookah), cigars, little cigars, clove cigarettes, and noncombustible tobacco products like electronic cigarettes and spitless products. Over 24% of college students have ever used hookah; 21% have used cigars, little cigars, and clove cigarettes (ACHA 2011a). Interestingly, the perception of tobacco use is much higher, with college students reporting 81.8% of their peers (i.e., the typical student at their school) use tobacco. Tobacco use may be initiated during the college years; 11.5% of college students started smoking occasionally over the course of their four years in school (Johnston et al. 2008). College students also tend to switch more easily between daily and occasional smoking, indicating a key opportunity to intervene (Staten et al. 2007). Healthy Campus 2020 aims to reduce the proportion of college students who smoke below 14% by the year 2020 (ACHA 2010) and to ultimately help college students remain or become tobacco-free.

The ACHA has recognized the dangers of secondhand smoke and encourages all colleges and universities to promote a smoke- or tobacco-free environment (ACHA 2011b). Colleges and universities have made progress to ultimately reduce tobacco use on their campuses by adopting such smoke-free or tobacco-free policies. As of October 5, 2012, there were at least 825 campuses with 100% smoke- or tobacco-free policies with no exemptions (includes entire campus, both indoors and out) (ANRF 2012). Of these, 608 have a tobacco-free policy, in which no form of tobacco is allowed.

There is mixed evidence on whether these policies change tobacco use behavior (Murphy-Hoefer et al. 2005). In support of such policies, Hahn and colleagues (2012) reported a 4-fold increase in demand for tobacco treatment services after a campus-wide tobacco-free policy was implemented. Albeit there has been an increase in smoke- and tobacco-free campuses across the U.S., policy implementation varies and enforcement efforts present an ongoing challenge (Plaspohl et al. 2012). Although there is limited research in this area, barriers to compliance may include tobacco addiction (ACHA 2011a), administrators not considering tobacco use a significant health issue on campus compared to other behaviors (Halperin and Rogotti 2003; Wechsler et al. 2001); geographical makeup of the campus (Plaspohl et al. 2012), lack of signage or communication about the policy (Hahn et al. 2011; Plaspohl et al. 2012), and perceived lack of enforcement (Halperin et al. 2003; Plaspohl et al. 2012). There is a need to develop and evaluate efforts to promote adherence with tobacco-free campus policies. The purpose of this study was to evaluate the feasibility and effectiveness of an Ambassador program aimed to increase compliance with a tobacco-free policy on a large public southeastern university campus.

History/Context of Tobacco-free Policy

Although Kentucky is a leader in tobacco production and distribution worldwide (USDA 2010), area colleges and universities recognize the importance of smokeand tobacco-free policies. There are currently 11 smoke- or tobacco-free campuses in Kentucky, out of over 50 colleges/universities (ANRF 2012). The first campus-wide tobacco-free policy in Kentucky was adopted at the flagship, land grant university on November 19, 2009 (University of Kentucky 2009). This policy applies to all members of the university community including its faculty, staff, students, volunteers, patients, vendors, and visitors. The policy is free of exceptions: the use of all tobacco products is prohibited in all owned, operated, leased, occupied, or controlled University buildings and structures, grounds, parking structures, enclosed bridges and walkways, sidewalks, parking lots, and vehicles, as well as personal vehicles in these areas. According to the policy, "tobacco products" means all forms of tobacco, including but not limited to cigarettes, cigars, pipes, water pipes (hookah), electronic cigarettes, and smokeless tobacco products (University of Kentucky 2009).

The tobacco-free policy was implemented using the 3-Ts framework: Tell, Treat, and Train, to promote a culture of policy compliance (Hahn et al. 2012). Communication of the tobacco-free policy occurred at multiple levels including signage, advertisements, and integrating the message into all campus events/materials (Tell). Free nicotine replacement products and a menu of group and individual counseling options were offered to students, employees and sponsored dependents (Treat). The university is working on empowering administrators, faculty, and student leaders to remind violators of the policy using firm, yet compassionate scripting (Train) to further enhance the implementation plan. Adherence to the tobacco-free policy in certain 'hotspots' has remained a challenge. Thus, an innovative approach to promote compliance, *Tobacco-free Take Action!*, was developed and evaluated with the intent of increasing the effectiveness of the policy, and ultimately to enhance the involvement of faculty, staff and student leaders in compliance efforts.

Case Study: Tobacco-free Take Action!

Tobacco-free Take Action! (TFTA!) was developed in Spring 2011 to encourage an environment of compliance on campus. Interested individuals were recruited via campus-wide emails, word of mouth, and student group presentations. Following the three-week recruitment process, 57 individuals (primarily staff and faculty) wished to be included on the *TFTA!* distribution list and the *TFTA!* Facebook page had 46 followers. Two organizational meetings were held during Spring 2011 with interested staff, faculty and students.

All members of *TFTA!*, designated as Ambassadors, value the goal of the tobacco-free policy: to create a healthier place to live, work, and learn. Ambassadors are trained in the proper way of approaching violators, including scripting techniques, how to respond if a violator refuses to comply with the policy, and how to properly document and report the violation. Although staff, faculty and students tend to support the tobacco-free policy, to improve the culture of compliance, it was determined that *TFTA!* Ambassadors needed to be visible and active on campus on a regular basis.

-----INSERT TABLE 1-----

Consequently, in Fall 2011, the idea of *TFTA!* Ambassadors was pilot tested in collaboration with the College of Nursing Public Health Nursing course. They needed clinical sites for undergraduate students, and this presented an opportunity for pilot testing the program. We asked the clinical instructors to select students who were supportive of the policy and interested in the program. Institutional review board approval was not needed because only environmental data were collected. Thirteen nursing students volunteered to participate in the *TFTA!* section of the course and were then trained as *TFTA!* Ambassadors. The original members of *TFTA!*, primarily staff and faculty, remained a part of *TFTA!*, but were not included in this pilot project. The nursing students were able to allot designated clinical hours to target three predetermined campus "hotspots" for four weeks, September through October 2011. "Hotspots" were selected based on observational rounds through campus, as well as areas where policy violations had been reported. Students were paired to target the "hotspots" for two to three

hours at a time one day per week. The students were involved in a variety of other compliance-promoting activities including student group presentations, environmental scanning (i.e., signage assessment), and awareness campaigns.

The Ambassadors (i.e., the nursing students) were required to demonstrate competence in scripting through role playing before they were assigned to "hotspots." Using scripting ensures the same message is being used with employees, students, contractors, and visitors. All Ambassadors are trained to use a firm, polite, and compassionate approach (Table 1). Ambassadors are also given informational cards with details of the tobacco-free policy and tobacco treatment resources available on campus to distribute as needed. If a violator refuses to comply with the policy when reminded, the Ambassador asks for identification and reports them to the appropriate office according to approved implementation procedures (University of Kentucky 2009).

Table 1. Scripting approach used by AmbassadorsScripting Message 1

Hello, my name is _____, and I am an (employee, student) here at UK. Are you aware that our campus is tobacco-free? I need to ask you to put your cigarette out and dispose of it in a trash can. Thank you for respecting our tobacco-free policy. There are locations on campus that sell nicotine replacement for a discounted price if you want to be comfortable on campus." (As appropriate, give a tobacco-quit resource sheet)

Ambassadors completed a site-specific checklist to document time spent at each "hotspot." The checklist included location of "hotspot," date, time of arrival and departure, number of male and female violators observed, number of violators approached, how the violator responded (e.g., immediately extinguished tobacco product, ignored ambassador, etc.), and action taken by the ambassador (i.e., reported to Dean of Students or supervisor). Ambassadors were to approach as many violators as possible during the designated time, while maintaining a consistent and compassionate approach. It was understood that there may be instances when there were multiple violators at the same time and they were to use scripting with each individual as they were able. After each day, Ambassadors input the data using an online data collection tool created with Qualtrics software (Qualtrics Labs, Inc. 2009).

Given that adoption of smoke- and tobacco-free campus policies is fairly recent, measurement of compliance, or lack thereof, is minimal. Thus, as one means of evaluation, cigarette butt data were collected in September (preintervention) and December 2011 (post-intervention) using a validated protocol, The Tobacco-free Compliance Assessment Tool (TF-CAT), a direct observation method (Fallin et al. 2012). Fallin and colleagues (2012) report, "the interrater reliability of the TF-CAT was very strong" (p. 502). Cigarette butts were collected from campus grounds on three subsequent days at the same time each day. Due to weather conditions and logistics, it was not always possible to collect data on the same days of the week before and after the intervention. Boundaries for each hotspot were noted so pre- and post-data collection remained consistent. During the cigarette butt pick up, number of violators were also documented (but not approached).

Data Analysis

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Statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) version 19 (Chicago, IL). Descriptive statistics were reported for total cigarette butts pre- and post-intervention as well as the number of tobacco-free policy violators observed and/or approached. To test for a statistically significant difference in number of cigarette butts before and after the intervention, a paired-samples t-test was used with an *a priori* alpha \leq .05.

Evaluation of Outcomes

<u>Cigarette Butt Pick-up</u>. Overall, the total number of cigarette butts declined by 24.8% from pre-to post-intervention: Hotspot B declined by 40.9%, Hotspot C declined by 19.0%, and Hotspot A increased by 26.9%. There was not a significant decline in total mean cigarette butts when data from all three hotspots were combined from before (M = 644, SD = 457) to after the intervention (M = 484, SD = 178, t(2) = 4.59, p = 0.44). See Table 2 for a summary of the results.

| Table 2. Ci | Table 2. Cigarette butt data pre- and post-intervention Fall 2011 | | | | | | | | | |
|-------------|---|---------|------|---------|-----|---------|------|---------|---------|--|
| Location | # Bı | ıtts Pr | ·e – | # Butts | # B | utts Po | st – | # Butts | Percent | |
| | | Day | | Pre – | | Day | | Post - | Change | |
| | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | | |
| Hotspot A | 228 | 32 | 49 | 309 | 261 | 70 | 61 | 392 | +26.8% | |
| Hotspot B | 496 | 339 | 330 | 1165 | 404 | 190 | 95 | 689 | -40.9% | |
| Hotspot C | 296 | 67 | 95 | 458 | 139 | 159 | 73 | 371 | -19.1% | |
| TOTAL | 1020 | 438 | 474 | 1932 | 804 | 419 | 229 | 1452 | -24.8% | |

<u>Violators.</u> During the 4-week intervention period, Ambassadors observed a total of 529 violators and they were able to approach 62.8% of them. The majority of violators (67.8%) responded positively and complied with the policy over the 4-week intervention period. According to the Ambassadors, there were some violators (30.7%) who responded negatively throughout the 4-week period. See Table 3 for a summary of the results.

| Week | # Violators Observed | No. (%) Violators Approached | No. (%) Responded Positively | No. (%) Responded Negatively | No. (%) Action Taken |
|-------|-------------------------|------------------------------------|------------------------------------|------------------------------------|----------------------------|
| 1 | 164 | 86 (52.4%) | 62 (72.1%) | 21 (24.4%) | 3 (3.50%) |
| 2 | 154 | 83 (53.9%) | 68 (81.9%) | 14 (16.9%) | 1 (1.2%) |
| 3 | 159 | 126 (79.3%) | 68 (54.0%) | 58 (46.0%) | 0 (0%) |
| 4 | 52 | 37 (71.2%) | 27 (73.0%) | 9 (24.3%) | 1 (2.7%) |
| TOTAL | 529 | 332 (62.8%) | 225 (67.8%) | 102 (30.7%) | 5 (1.5%) |

Table 3. Number of policy violators observed and approached

Feasibility of Implementing TFTA!

The *TFTA!* intervention involving approaching violators was intended to last eight weeks, but this activity was discontinued after four weeks due to student and instructor concerns. One violator flicked a lit cigarette at one of the students. Clinical instructors were concerned about students' safety and did not feel students should have to deal with potential negative reactions when approaching violators. Although the duration of the intervention was cut short, important lessons were learned and need to be shared for campuses wishing to pilot similar compliance strategies.

Students may not be the best people to deliver the program, as they may not be perceived by violators as having authority. The nursing students perceived they were not taken seriously, which made things "awkward" when approaching violators. Following the program, students suggested that "non-students" need to address violators. They recommended hiring and training university employees to promote adherence, as they believed these individuals would be recognized as authority figures, resulting in greater compliance. The students also recommended the use of uniforms, or something to identify the person approaching violators, to increase visibility of the Ambassadors. Since the tobacco-free policy has been in place, most violators have responded in a positive manner when approached. Much of the Ambassadors' training focused on using scripting and assumed most individuals would comply. Although the number of violators who responded negatively (as perceived by the Ambassadors) was 30%, students were more focused on the negative than the positive. They suggested more training in how to effectively deal with potential negative reactions. Since this pilot study, the training has been adapted to better fit the needs of future Ambassadors. We now include more variety in the scripting scenarios, more time spent observing scripting in action with trained Ambassadors, continued role playing, and a specific protocol on how to deal with challenging situations.

The nursing student Ambassadors reported taking a helpful, treatmentfocused approach (i.e., offering information about tobacco treatment resources) and this seemed to be more effective than only reminding individuals of the tobacco-free policy. Anecdotally, the tobacco treatment specialists working with students reported an increased interest in tobacco treatment on campus during the intervention. They also reported that student treatment-seekers appreciated the kind and helping approach taken by the Ambassadors. Based on this feedback, modified scripting approaches are needed to ensure that a variety of effective messages are available for Ambassadors to use when approaching violators. From this experience, the *TFTA!* Ambassador training has been modified to incorporate more diverse scenarios, role modeling, and peer mentoring.

Discussion

The purpose of this case study was to describe and evaluate an innovative approach aimed to increase compliance with a university tobacco-free policy. During the four week intervention, trained Ambassadors who were undergraduate nursing students approached 332 policy violators in designated campus 'hotspots.' Over two-thirds of those approached responded in a positive manner and complied with the policy. Although there was not a significant difference in cigarette butts observed pre-and post-intervention, the total number of cigarette butts declined by 24.8%. These results are promising, particularly when examining specific "hotspots." For example, Hotspot B showed a 40.9% decline in cigarette butts after the intervention. Baseline cigarette butt data indicated Hotspot B had three times the number of cigarette butts compared to the other "hotspots." Since Ambassadors were permitted to target any of the three "hotspots" during their scheduled time, they may have chosen to target this area more frequently than the others. This may have accounted for the 26.9% increase in Hotspot A, as violators may have migrated to other areas to avoid being

approached by the Ambassadors. More regularly scheduled and rotated targeting of "hotspots" need to be incorporated into the Ambassador's weekly schedule.

Although many colleges and universities have implemented smoke- and tobacco- free campuses (University of Kentucky 2009), there is a need to develop and evaluate efforts to promote adherence with such policies (Plaspohl et al. 2012; Wechsler et al. 2001). The tobacco-free policy featured in this paper was implemented using the 3-Ts approach: Tell, Treat, and Train, to promote a culture of policy compliance (Hahn et al. 2012). The *TFTA!* program built on the third "T"- Train, with the goal of empowering administrators, faculty, staff and students to remind violators of the policy using firm, yet compassionate scripting in an effort to increase adherence. The ACHA (2011b) supports these efforts, recommending campuses develop and maintain tobacco task forces on campus to assist with compliance and enforcement efforts.

Achieving a tobacco-free environment requires support from all members of the college/university community (ACHA 2011b): compliance needs to be a shared responsibility (Glassman, Reindl, and Whewell 2011). It is important to not only create awareness of the tobacco-free policy, but also equip the campus community with relevant skills to help promote compliance with the policy. Training Ambassadors to approach violators using a scripting approach ensures that consistent messages are used by university students, faculty and staff. This is in line with recommendations for consistent and fair enforcement to improve compliance (Glassman, Reindl, and Whewell). Since a majority of the tobaccofree policy violators approached responded in a positive manner, these results provide encouragement that most individuals complied when simply reminded of the policy in an unthreatening or nonjudgmental manner. These findings are supported by Murphy-Hoefer and colleagues (2005) in that most smokers voluntarily comply with the tobacco-free policies. However, this pilot study indicated that undergraduate students may not be the best people to deliver the intervention. If students are recruited as Ambassadors, perhaps, identifying particular qualities that students need and/or more intensive training on how to handle challenging situations is warranted. More research is needed to identify the characteristics (i.e., age, gender, interpersonal qualities) of Ambassadors that promote success.

Having a group of trained Ambassadors may also improve self-efficacy among the campus community, the belief in their ability to approach violators (Bandura 1977). Not only may this affect the Ambassadors, but it is likely that others on campus may observe the interactions, and through social modeling (Bandura 1994), feel they too have the capability to approach violators. While we did not measure self-efficacy or social modeling in this case study, research is needed to test the effects of *TFTA!* on both intended and unintended consequences. There is a need to replicate this intervention longitudinally with trained Ambassadors including students, faculty and staff.

Limitations

There were limitations with the evaluation design and implementation. This was a case study, conducted at one university campus with a tobacco-free policy. Without a comparison control school, generalizability is limited. Duration of the program was four weeks, although the intention was to carry the program out for the entire semester. In addition, the Ambassadors only targeted three campus hotspots. As hotspots are targeted, new hotspots may occur; ongoing campus surveillance is essential. Longitudinal research studies are warranted to determine if the Ambassador program has a sustainable effect on policy adherence.

Limitations in data collection were also noted. Cigarette butt collection occurred during months with more favorable weather conditions when more smokers congregated outside. There was also a lag in post-data collection; postdata were collected at the end of the fall semester (December). However, students only approached violators through mid-October, which may have skewed the outcome data. Data collection needs to occur throughout the intervention period. Violator reaction data were self-reported by each Ambassador group; perceptions regarding positive and negative responses may vary. More detailed data collection measures regarding violator reaction would be beneficial for future studies. Quality assurance was not conducted on a regular basis, so validity of the selfreport data cannot be confirmed. Future evaluations need to incorporate quality assurance measures to assess intervention fidelity.

Conclusions and Policy Implications

The adoption of tobacco-free policies on college campuses is an emerging trend. The ACHA recognizes the dangers of secondhand smoke and encourages all colleges and universities to promote a tobacco-free environment (ACHA 2011b). Efforts to increase adherence of these policies are necessary, as challenges remain. Tobacco-free colleges and universities need to share implementation strategies to serve as a resource for other institutions. Training and monitoring the right individuals to approach policy violators using a firm yet compassionate approach across college campuses has potential to create a sustainable and supportive campus environment, thereby improving compliance.

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