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Examining the Relationship between Tobacco Use and Perceptions of a New Tobacco-Free Campus Policy

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Examining the Relationship between Tobacco Use and Perceptions of a New
Tobacco-Free Campus Policy

An Honors Thesis submitted in partial fulfillment of the requirements for Honors in
Bachelor of Science in Public Health

By

Caroline T. Lathi

Under the mentorship of Dr. Ashley Walker

ABSTRACT

The purpose of this study was to examine the perceptions of tobacco-free policy benefits and enforcement on a campus with a tobacco free policy. Young adults aged 18 to 24 have the highest rate of tobacco use compared with all other age groups in the United States, and are the most targeted by the tobacco industry. Experts recommend that smoke-free and tobacco-free areas are the most effective ways to reduce exposure to secondhand smoke and encourage cessation. Surveys were distributed on a campus three years after the implementation of the tobacco-free policy. The study included 198 participants (n=198) and 14% of the participants self-reported as tobacco-users. The results confirmed that students who use tobacco products do have a different perception of the tobacco-free campus policy.

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Chapter I

INTRODUCTION

During the 20th century, tobacco use is believed to have claimed 100 million lives. Now, worldwide tobacco use is causing the loss of 6 million lives annually (World Health Organization, 2015). Since the U.S. Surgeon General report in 1964, each subsequent report has listed tobacco use as the largest source of preventable morbidity (Fielding, 1985). It is estimated that 20% of Americans still use tobacco even though much is known about poor health outcomes such as increased health risks for coronary heart disease, stroke, lung cancer, chronic obstructive pulmonary disease, infertility, birth defects, type II diabetes, rheumatoid arthritis, cataracts, tooth and gum loss, and low bone density (Centers for Disease Control and Prevention[CDC], 2015).

Directly using tobacco is not the only way one can develop associated ailments. Secondhand smoke exposure is associated with approximately 41,000 deaths annually among adults in the United States. Of these deaths, 7,333 are from lung cancer and 33,951 are from heart disease (CDC, 2015). Research gathered by the World Health Organization (2015) shows that there is no safe level of secondhand smoke, and that any exposure can have negative health effects. Secondhand smoke can lead to cancer, respiratory disease, or cardiovascular disease, and can be fatal. The most effective and popular legislative solution is to create smoke-free or tobacco-free zones (WHO, 2015). Many public transportation areas, restaurants, government owned buildings, and cities

worldwide are implementing these types of zones. Russia and Madagascar have both gone completely smoke-free (WHO, 2015).

Statement of Purpose

The purpose of this study is to examine the perceptions of tobacco-free policy benefits and enforcement on a campus with a tobacco free policy. The research is intended to gather information from undergraduate students in order to understand the impact the tobacco-free policy has on those it concerns. Analyzing perceptions of the tobacco-free policy may help determine weaknesses and strengths in the policy execution and enforcement.

Question and Hypotheses

How does the tobacco use status of an undergraduate student relate to their perceptions of the new tobacco-free campus policy?

H0=Tobacco use status of an undergraduate student will have no relationship with their perceptions of the tobacco-free campus policy

H1=Tobacco use status of an undergraduate student will have a significant relationship with their perceptions of the tobacco-free campus policy

Framework

The Theory of Reasoned Action (TRA) guided this study. TRA predicts behavioral intention using attitudes and norms (Ajzen & Fishbein, 1980). In other words, intentions to perform a behavior are predicted by attitudes about performing the behavior (Nissoon & Earl, n.d.). Constructs of the TRA include attitude, subjective norm, perceived control, and intention (Glanz, Rimer, & Vinswanth, 2015). Attitudes towards the behavior

are defined as “readily accessible or salient beliefs about the likely outcomes of performing the target behavior”.

Limitations

1. Participants may have not been comfortable answering questions about their tobacco use status or their views of a university policy.
2. The accuracy of the responses cannot be confirmed because all data was self-reported.
3. The surveys were adapted from a study that was performed where a policy was not yet in place which limited the scope of the questions.
4. The study participants were selected using a non-probability, sample of convenience.
5. Participants were only selected from one university.

Delimitations

1. Only close ended, Likert scale responses were included in the survey to decrease time needed by participants.
2. Attitudes towards the tobacco-free policy were assessed using the Theory of Reasoned Action to guide the study.
3. Undergraduate students were recruited as participants because of the accessibility.

Assumptions

1. All participants read and write English fluently.
2. All participants understood the questions as they were worded on the survey.

3. All participants took the necessary time to read and respond to each question truthfully
4. All data was recorded and analyzed correctly.

Definition of Terms

Nicotine- An alkaloid found in the tobacco plant that contributes to the addictive properties of tobacco products (Al-Ibrahim & Gross, 1990). It is known to mimic neurotransmitters in the brain and cause effects in both the cardiovascular and nervous systems (Goodman, 1993).

Tobacco Use- The habitual use of products created from the tobacco plant leaf. Refers to the use of any products but the predominant form of use is through inhalation (Al-Ibrahim & Gross, 1990).

Smokeless Tobacco Products (SLTs)- Products that contain tobacco and are chewed, sniffed, or sucked, instead of inhaled (Al-Ibrahim & Gross, 1990).

Emerging Tobacco Products (ETPs)- Refers to electronic cigarettes, dissolvable tobacco, and snus which are increasing in popularity (Meier, Tackett, Miller, Grant, & Wagener, 2015).

Electronic Cigarettes (e-cigarettes)- Battery powered devices that are made to look like pens or traditional cigarettes, but do not actually burn tobacco. Instead, nicotine and other liquid chemicals are heated into vapor for the user to inhale (National Cancer Institute [NCI], n.d.). Due to the presence of nicotine, e-cigarettes are often grouped under tobacco use, despite being tobacco-free.

Hookah- A device with flexible tubes and a mouthpiece used to smoke flavored tobacco. Also called a water pipe because the device cools the heated tobacco by passing it through a water-filled bowl (NCI, n.d.).

Gateway Products- Phrase used to describe products that are perceived to be less harmful but can create patterns of addiction, leading to the use of more harmful substances. (Meier et al., 2015).

Smoke-Free Policy- Policy that only bans tobacco products that produce smoke. The primary goal of smoke-free policies is to reduce the exposure of non-smokers to secondhand smoke (Centers for Disease Control and Prevention, 2010).

Tobacco-Free Policy- Policy that prohibits the use of any tobacco products within a vicinity. These policies are considered more comprehensive because they consider the health risks of both tobacco-users and non-users (American Cancer Society [ACS], 2017). Although the name specifies only tobacco products, many policies write in stipulations that prohibit products that mimic tobacco use, such as e-cigarettes

Chapter II

REVIEW OF LITERATURE

Introduction

The tobacco plant can be traced back to pre-Columbian times in North and South America, where it was used by natives in ceremonious and medicinal practices (Charlton, 2004). Tobacco use was so entwined in some of the native cultures that tribes such as the Blackfoot and the Crow did not cultivate any other plants besides the tobacco plant (Goodman, 1993). Within 50 years of Columbus's voyage to the New World, the plant was introduced to Europe and was being grown in several European countries, including Spain, Switzerland, Italy, England, and Belgium, by 1570 (Goodman, 1993).

Nicotine is one of the main organic, nitrogenous compounds found in the tobacco plant. It is similar in structure to the neurotransmitter acetylcholine, allowing it to interact with receptors in the brain and body. Different dosage levels have varying effects, ranging from a stimulant level to a depressant level to even death, making it possible to classify nicotine as biphasic (Goodman, 1993). Nicotine affects other neurotransmitters as well, especially dopamine. In the mesolimbic system, dopamine release is stimulated by nicotine which, in combination with the effects on acetylcholine, contributes to the highly addictive properties of tobacco (Picciotto et al., 1998).

Despite the highly addictive properties and dangerous effects on the body, it was not until 1964 that tobacco products were deemed as harmful. The Surgeon General's Report in 1964 identified major health concerns including cancer, respiratory diseases, and cardiovascular diseases, as associated with tobacco use (U.S. Department of Health and Human Services [USDHHS], 1964). Tobacco use in the U.S. has declined since 1964

from 40% to 18%, but has ceased to decline further since 2005 (Guydish, Yu, Le, Pagano, & Delucchi, 2015). Experts estimate that by 2030, there will be 8 million tobacco related deaths annually and will account for 10% of all annual deaths globally (Novotny et al., 2015).

Tobacco Use and College Students

Research shows that college aged students, aged 18 to 24, are the most targeted population by tobacco companies. Furthermore, young adults aged 18 to 24 have the highest rate of tobacco use compared with all other age groups in the United States (Rodgers, 2012). In the 1980's and 90's, the Joe Camel advertising campaign initiated more college students to smoking than had been done so before (Johnston, O'Malley, Bachman, & Schulenberg, 2010). This surge created a significant brand amongst college students that campuses are still seeing the after-effects of. According to a study of college students, 47.5% responded to using a tobacco product in the past year (Rigotti, Lee, & Wechsler, 2000). Similarly, a 2015 study found that 49.4% of the undergraduate students surveyed reported ever trying a tobacco product (Meier, Tackett, Miller, Grant, & Wagener, 2015). According to the CDC (2016) 99% of tobacco users begin before age 26. Moreover, quitting before age 35 can add approximately 6 years to life expectancy.

Multiple factors have been linked to the vulnerability of college students to use tobacco products. Meil et al. (2016) found that tobacco use frequency had several significant predictive variables: sex, Sensation Seeking Scale Form V (SSSV), and the Frontal Systems Behavioral Scale (FrSBe) Disinhibition, Apathy, and Executive Function subscales. The SSSV is a "widely used measure of the tendency to enjoy and pursue exciting or novel experiences, even when they are dangerous or risky" (Meil et al., 2016,

p.137). The FrSBe associates disinhibition with restlessness risk taking, apathy with reduced drive and interest, and executive dysfunction with difficulty with learning, mental flexibility, and working memory. Another study found that there is product-specific variability in predicting tobacco use among college students (Morrell, Cohen, Bacchi, & West, 2005). This study concluded that being female predicted smoking, and being male predicted smokeless tobacco use. However, several other studies found that males reported using all tobacco products significantly more than females (Cooke et al., 2016; Hall, Williams, & Hunt, 2015; Meier et al., 2015). Cooke et al. (2016) connected tobacco use in first year college students to stressful life events and deviant peers, as well as depression and anxiety. However, depression and anxiety only impacted a change in frequency among users, but not experimentation in non-users.

Non-Health Risks of Tobacco Use

Tobacco use can impact more than just the health of students. Fennell (2012) noted that certain career paths, such as the health field, or specific companies do not hire smokers, or other types of tobacco users. Research suggests that tobacco-users are less attractive to employers because tobacco use is associated with higher rates of absenteeism and presenteeism (Kirkham et al., 2015). A tobacco habit could lead to decreased marketability and a decrease in job eligibility, despite earning a college degree. National Health Expenditure Accounts from 2010 show that private insurance spent \$33.6 billion, Medicare and Medicaid spent \$84.6 billion, and other federal programs spent \$23.8 billion on smoking-attributable healthcare costs (Xu, Bishop, Kennedy, Simpson, & Pechacek, 2015). Additionally, \$7.9 billion was paid for out-of-pocket. These calculations do not include smokeless tobacco products, and therefore, overall tobacco related costs could be

much higher. Addictions started in college can lead to significant deficits in personal funds, and/or contribute to a larger federal burden. Smoking and tobacco-use has been linked to psychosocial effects as well. A well-regarded study from 1998 first established a link between smoking and divorce (Doherty & Doherty). While causation cannot be determined, smokers were 53% more likely to have divorced than non-smokers, suggesting a possible predisposition to marital instability.

Trends in Other Types of Tobacco Use

Research suggests that the number of daily cigarette smokers among the college-aged population began to decline after 1999 and leveled out soon after. Yet, smokeless tobacco products and e-cigarettes are beginning to surge tobacco use again (Johnston et al., 2010). A survey administered to college students found that 48.6% of respondents had tried a tobacco product, and two thirds of which started with a non-cigarette product (Sutfin et al., 2015). While the advertising of tobacco products has been banned on television and radio since 1970, e-cigarettes have been promoted through these channels since entering the U.S. market in 2006 from China (Das & Prochaska, 2017).

Experts view electronic nicotine products as a growing concern. Products have been found with higher nicotine levels than they are labeled as, and flavored options make nicotine more attractable to younger populations (Das & Prochaska, 2017). Moreover, these electronic products are highly accessible, and studies have shown that they can act as a gateway to other tobacco products. A study of college students looked at first-tried tobacco product and current use to analyze the concern of gateway products (Meier et al., 2015). The study found that of the 40.2% of students who first tried smokeless tobacco products (including dip/chew), 52.5% were current tobacco users, and

that of the 3.4% of students who first tried an emerging tobacco product (including e-cigarettes) 28.8% were current tobacco users. In addition, Cooke et al. (2016) found that first year college students that experimented with one tobacco product were more likely to try other products.

Tobacco Prevention and Policy

The public health field recognizes tobacco use among college students as a health risk. Healthy Campus 2020 lists tobacco related objectives for both students and faculty/staff. Objectives for students include reducing the number of students that report using cigarettes, smokeless tobacco, and hookahs within the past 30 days, and increase the proportion of students receiving tobacco-related information from their institution (American College Health Association[ACHA], 2016). Faculty and staff objectives address decreasing cigarette smoking and use of smokeless tobacco, but also includes increasing cessation attempts (ACHA, 2016). The CDC (2010) recommends that smoke-free and tobacco-free areas are the most effective ways to reduce exposure to secondhand smoke, which is in part why they have created Tobacco-Free Campus Initiatives. Additionally, these initiatives are intended to encourage students to quit tobacco products and increase their health.

Tobacco-free campuses are rising in popularity (American Nonsmokers' Right Foundation, 2011). Yet, there has been limited research on the effectiveness of these policies (Rodgers, 2012). In fact, Rodgers (2012) found that between 2000 and 2012, only 8 studies with multiple recommended program components were found. The American College Health Association (2016) has recommended all college campuses to implement a 100% tobacco-free policy, but limited studies exist to aid in this policy

change. To meet this need, Glassman, Reindl, & Whewell (2011) identified four strategies that contribute to a successful, multicomponent tobacco-free movement. These include: (1) student involvement in the movement; (2) staff and administrative policy support; (3) dissemination of resources; and (4) enforcement.

Surveys on college campuses show that most students do in fact support a tobacco-free campus policy, though there were varying levels of support across different demographics, especially gender (Hall, Williams, & Hunt, 2015). The question therein falls to the level of willingness of the students and staff to enforce the policy.

Enforcement strategies are beginning to be investigated. Experts in the field are finding that without a proper enforcement plan, tobacco-free policies are powerless (Fennell, 2012). Instead, violations of tobacco-free policies should be treated like other campus policy violations. Fennell (2012) suggests a warning and fining system in which the fines collected would go to health services. Some campuses have tried an ambassador advocacy program in which students are trained to promote the policy, engage in conversation with violators, and increase campus awareness of enforcement attempts (Kuntz, Seitz, & Nelson, 2015). These student ambassadors also carried resources to give to violators, scripted dialogues to help answer questions, and referral forms to the Dean of Students for repeat violators or violators who became threatening. However, almost all ambassadors reported being uncomfortable approaching violators and found conversing with them to be difficult. Although violators reported that most ambassadors appeared friendly, the situation was uncomfortable for them as well, and often ended quickly, before they were given campus resources (Kuntz, Seitz, & Nelson, 2015).

Studying the variations in student perceptions of tobacco-free policies can help determine possible enforcement strategies and policy amendments. One study found that policy supporters framed their thinking primarily in terms of environmental or aesthetic concerns (Niemeier, Chapp, & Henley, 2014). The well-being of nonsmokers, the well-being of smokers, and general health concerns followed close behind. On the contrast, opponents framed their arguments in terms of liberty, legality, and discrimination. Niemeier, Chapp, & Henley (2014) noted that most opponents who framed their opposition in terms of liberty were non-smokers. Another study conducted an experiment to assess if students reacted differently to a proposed hypothetical policy if it were punitively-framed versus wellness-framed (Lee, Purcell, & Chaney, 2017). The results showed that amongst students who had smoked in the past month, punitively-framed messages negatively impacted perceived organizational support.

Summary

Tobacco has historical roots and highly addictive properties. Since the Surgeon General's Report in 1964, limiting tobacco related deaths has been a priority of the public health field. Research shows that college students have some of the highest rates of tobacco use. Targeting from tobacco companies, along with pressures from the college environment, contribute to experimentation and increased frequency of tobacco use. In recent years, tobacco prevention efforts have focused on the implementation of tobacco-free campus policies. Limited resources exist to help transition college campuses and their students, especially with enforcement strategies. Studies suggest that overall, most students do perceive such policies as positive. Among universities that have gone tobacco-free, the greatest variations between policies have to do with enforcement

strategies. Students' perceptions of tobacco-free policies can provide insight on what aspects of a policy contribute to its effectiveness or to its ineffectiveness.

Chapter III

METHODS

Participants

The study recruited undergraduate students for participation from a public, mid-sized university. Both male and female students were recruited. Graduate students were not eligible to participate, but all levels of undergraduate students participated.

Recruitment

After obtaining IRB approval (see Appendix A), surveys were distributed through Qualtrics, an online research survey site. Student organizations were contacted to share the Qualtrics link on their organization's internal social media sites. The University Wellness program director provided a letter of support for the study and assisted in distributing the instrument through the Wellness Program's social media to reach a representative population. Professors were also provided the survey link to share on their class Folio sites to give their students an opportunity to participate (see Appendix B). To comply with the University's policies, the University's email system was not used to distribute the survey.

Any participants that opened the survey had the opportunity to enter their email to enter a drawing for one of two \$25 gift cards. If a participant chose to not complete the survey in entirety they were still entered in the drawing.

Data Collection

The research used a cross sectional study design. Non-probability sampling, specifically a combination of convenience and snowball sampling, was used. No experimental manipulation was used. The instrument that was used to collect research is a

revised version of the validated Campus Tobacco-Free Policy Scale (Day, Williams, Hunt, & Hall, 2014). Minor changes were made to the instrument, but only pertained to wording and not content. These changes were necessary because the instrument was originally designed for a university where the policy had not been implemented at the time of the study. The first section of the survey pertained to perceptions of the tobacco-free campus policy (see Appendix C). This section was worded as statements and paired with a 5-point Likert scale, ranging from strongly disagree to strongly agree. For example, “I personally support the tobacco-free campus policy” and “I feel comfortable addressing policy violators” were included on the survey. Additionally, tobacco use behaviors were asked in the demographics section of the instrument. Data collection began in mid-October and lasted for 11 days before the survey was closed.

Data Analysis

Data from Qualtrics was downloaded into SPSS and cleaned for completeness. Descriptive and inferential statistics were run. Pearson correlation was used to examine the relationship between demographic variables, such as classification or tobacco use status, and perceptions of the policy. The data was not associated with identifying factors such as name, address, student ID number, or phone number.

Risk Management

IRB approval was obtained before the start of the study. There were minimal risks for participants. Mental or social discomfort could occur while taking the survey. Resources (i.e. counseling center information) were available for any participants that experienced social or mental discomfort from the survey. The instrument stated that the survey was voluntary and could be withdrawn from at any time. This information was

provided on Qualtrics at the start of the survey. Reply to the survey questions was considered permission to use the responses in the study and confirmation that the participant was at least 18 years of age. All data will be stored for 5 years on a password locked computer or in a locked drawer, and then will be destroyed.

Summary

Undergraduate students were recruited to participate in a cross-sectional study through convenience and snowball sampling. The survey was a revised version of the validated Campus Tobacco-Free Policy Scale (Day, Williams, Hunt, & Hall, 2014) and was distributed online through Qualtrics. IRB approval was obtained in advance and participants underwent minimal risk.

Chapter IV

RESULTS

Survey distribution resulted in 199 surveys opened, of which 198 had responses. Of the 198 participants, 31% (62) were male and 69% (136) were female. The participants were predominantly Sophomores and Juniors, though there were participants from each classification. Table 1 shows the distribution of classifications.

Table 1
Classification of Participants

Classification	Frequency	Percent
Freshman	16	8.08%
Sophomore	73	36.87%
Junior	68	34.34%
Senior	41	20.71%
Total	198	100%

Of the participants 14% (28) reported that they use tobacco. For additional questions on tobacco use, non-users could select 'Not Applicable.' Table 2 shows the types of tobacco products that the participants reported using. Participants were asked to select all products that applied, meaning they could select multiple products. Of the 28 self-reported tobacco users, 5 selected more than one product.

Table 2
Types of Tobacco Products Used

Tobacco Product	Frequency	Percent
Cigarettes	12	36.36%
Electronic Cigarettes	6	18.18%
Spit/Chewing	8	24.24%
Hookah	7	21.21%
Total	33	100%

When asked what time of the day participants used tobacco products, 50% (13) selected ‘Other’ over the options of ‘Morning’, ‘Evening’, or ‘All Day’. Additionally, 33% (10) reported using tobacco less and 64% (20) reported no change in tobacco use because of the campus policy. Only 1 person reported using tobacco more because of the policy.

The first 14 questions of the survey (see Appendix C) pertained to perspectives of the tobacco-free campus policy. A higher response on the Likert scale meant a higher, or more positive perspective. Each participant’s total policy perspective score was calculated. The scale ranged from 1-5, setting the minimum score at 14 and the maximum score at 70. The mean of the scores was 52.63 (see Table 3).

Table 3
Mean of Policy Perception Scores

	N	Minimum	Maximum	Mean	Std. Deviation
Perception of Policy Score	198	14	70	52.63	10.879

The question with the highest percentage of negative responses was, “I feel comfortable addressing policy violators” with 39.9% of participants responding with Strongly Disagree or Disagree. This was closely followed by, “Tobacco users stopped using on campus no matter the punishment for violation after the policy was implemented” with 39.39% of participants responding with Strongly Disagree or Disagree. However, 89.95% of participants responded with Strongly Agree or Agree to “I recognize tobacco use as a serious health risk” and 71.72% of participants responded with Strongly Agree or Agree to “I believe having a 100% tobacco free campus is important.” Additionally, 79.59% of participants selected Strongly Agree or Agree to “I would obey the policy if I were reported to the Office of Student Conduct”. See Table 4 for the frequency of responses for each question.

Table 4
Frequency of Responses to Policy Perception Questions

#	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total					
1	I am familiar with the current tobacco policy at my university.	2.02%	4	4.55%	9	10.10%	20	38.89%	77	44.44%	88	198
2	I personally support the tobacco-free campus policy.	3.55%	7	6.09%	12	17.26%	34	28.43%	56	44.67%	88	197
3	My peers support the tobacco-free campus policy.	5.05%	10	15.66%	31	30.30%	60	27.27%	54	21.72%	43	198
4	I recognize tobacco use as a serious health risk.	1.52%	3	1.52%	3	7.11%	14	26.40%	52	63.45%	125	197
5	I believe having a 100% tobacco free campus is important.	5.56%	11	7.58%	15	15.15%	30	30.81%	61	40.91%	81	198
6	I would obey the tobacco policy if my peers confronted me for breaking the policy.	3.55%	7	5.58%	11	20.30%	40	30.46%	60	40.10%	79	197
7	I would obey the tobacco policy if faculty or staff confronted me breaking the policy.	3.03%	6	5.05%	10	13.64%	27	28.28%	56	50.00%	99	198
8	I would obey the policy if I were reported to the Office of Student.	4.08%	8	3.57%	7	12.76%	25	23.98%	47	55.61%	109	196
9	I feel comfortable addressing policy violators.	11.11%	22	28.79%	57	26.77%	53	18.18%	36	15.15%	30	198

10	The tobacco-free campus policy has created a healthier campus environment.	4.08%	8	7.65%	15	13.27%	26	40.82%	80	34.18%	67	196
11	In general, students support a tobacco-free policy.	3.57%	7	14.29%	28	26.02%	51	39.29%	77	16.84%	33	196
12	Tobacco users stopped using on campus no matter the punishment for violation after the policy was implemented.	8.08%	16	31.31%	62	32.32%	64	16.67%	33	11.62%	23	198
13	I feel my campus has done an adequate job making students aware of the policy.	2.03%	4	12.69%	25	20.81%	41	40.10%	79	24.37%	48	197
14	I feel my campus is providing adequate resources to help those that would like to change their behavior in regards to tobacco use.	5.08%	10	22.34%	44	28.93%	57	26.90%	53	16.75%	33	197

Pearson correlation was used to test for relationships between variables (refer to Table 5). Tobacco use status and sex had a 0.289 positive correlation that was significant at the 0.01 level. Tobacco use status was scored as 1 for user and 2 for non-user, while sex was scored 1 for male and 2 for female. This suggests males were more likely to identify as tobacco-users than females were. Total perception score and sex had a 0.309 positive correlation that was significant at the 0.01 level. This suggests that females responded more positively to the policy perception questions. A 0.147 negative correlation, significant at the 0.05 level, was found between classification and tobacco use. Classification was scored increasingly so that freshmen were scored as 1 and seniors were scored as 4. The negative correlation suggests that upperclassmen are more likely to use tobacco products than underclassmen are.

Table 5
Pearson Correlations of Tobacco Use, Sex, Classification, and Perception

		Tobacco Use Status	Policy Perception
Tobacco Use Status	Pearson Correlation	1	.259**
	Sig. (2-tailed)		.000
	N	198	198
Sex	Pearson Correlation	.289**	.309**
	Sig. (2-tailed)	.000	.000
	N	198	198
Classification	Pearson Correlation	-.147*	-.125
	Sig. (2-tailed)	.039	.080
	N	198	198

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

In addressing the hypotheses, a Pearson correlation was run on tobacco use status and total perception score. A 0.259 positive correlation was found at the 0.01 level. This suggests that there is a relationship between tobacco use status and perceptions of the tobacco-free campus policy, therefore we reject the null hypothesis and accept the alternative hypothesis.

Summary

The study included 198 participants, and 14% of participants reported using tobacco. Tobacco-users reported using cigarettes more than other products and reported using at a time of day other than morning, evening, or all day. Overall, participants had a relatively high perception of the policy with a mean score of 52.63. Significant correlations were found between tobacco use status and policy perception score; sex and tobacco use status; sex and policy perception score; and classification and tobacco use status.

Chapter V

DISCUSSION

The results suggested that students who use tobacco products do have a different perception of the tobacco-free campus policy. However, the mean of the policy perception ($\mu=52.63$) demonstrates that overall, students have relatively positive perceptions of the policy. This is further demonstrated by the frequency of positive responses to the perception questions, especially 71.72% of participants agreeing that having a 100% tobacco free campus is important.

The relationships between tobacco use status and the demographic variables can help us understand who is at higher risk for developing tobacco dependencies and why. 50% of self-reported tobacco-users selected 'Other' over the options of 'Morning', 'Evening', or 'All Day' in regard to when they use tobacco. This could suggest that they are not using tobacco products regularly, but instead use tobacco to cope with stress or to interact in social settings. Previous literature suggests that the social scene of colleges has long been targeted by the tobacco industry (Johnston, O'Malley, Bachman, & Schulenberg, 2010). However, the most selected tobacco product that participants said they use were cigarettes. This contradicts available literature that smokeless tobacco products have resurged the use of tobacco among college-aged adults ((Johnston et al., 2010; Sutfin et al., 2015). These differences could stem from the small number of tobacco-users that participated in the study, but future studies should address this discrepancy. The Pearson Correlations showed that there were significant correlations between tobacco use status and classification, and tobacco use status and sex. This suggests that upperclassmen males are the most susceptible to tobacco use. Cessation

programs, or other wellness programs on campus, should take this into consideration when identifying their target audience.

The participants' perceptions of the policy's enforcement were relatively low in comparison to responses to other questions. The two questions with the lowest scores pertained to the comfortableness of students to approach a policy violator and their beliefs that their peers have actually stopped using tobacco on campus. Responses show that most participants do not feel comfortable approaching a policy violator and that they do not think that their peers are following the policy. Interestingly, 79.59% of participants agreed that they would obey the policy if they were reported to the Office of Student Conduct. However, there was a significant correlation between this question and tobacco use status, meaning that it was almost exclusively non-users who answered this way. These responses can still share insight on how students perceive policy enforcement and what violations are most motivating.

The results were similar to that of Day, Williams, Hunt, & Hall (2014) from which the instrument originated. Day et al. found that 15.3% of respondents were tobacco users. Comparably, this study found that 14% of respondents were tobacco-users and studies of tobacco use in the U.S. have shown that 16-18% of adults use tobacco (Guydish et al., 2015). In contrast to this study, Day et al. found that tobacco-users tended to be slightly younger than non-users. However, both this study and Day et al. found that non-users were significantly more likely to support a tobacco-free campus policy than users were. Participants in both studies also reported they would obey the policy if they were reported to the Dean of Students.

Limitations

There were several limitations to this study. The sample size (n=198) was relatively small for a university of 20,500 students. Having a small sample size increases the margin of error and decreases the power of the study. Additionally, only 14% of the participants reported using tobacco products and 69% of participants were female. A more comprehensive sample population could produce results with more implications for the campus. Additionally, only undergraduate students were included in the study. Future studies should consider including graduate level students, as well as faculty and staff.

Conclusion

In conclusion, three years after the implementation of a tobacco-free campus policy most students perceive the policy positively. Students who use tobacco products are more likely to perceive the policy negatively, and upperclassmen males self-reported using tobacco more than other demographics did. Enforcement aspects of the policy had the most negative responses, and campus officials should take this into consideration. Future studies should expand the questions for tobacco-users to collect more data on who is using tobacco and why, and expand the criteria for participants to include graduate students and faculty/staff. Campuses that are considering implementing a tobacco-free policy should promote the policy to students in a way that advocates the campus environment and overall wellness of the students. By identifying what groups are more likely to use tobacco, campuses can tailor promotion efforts to better reach these groups.

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APPENDIX A

Georgia Southern University Office of Research Services & Sponsored Programs Institutional Review Board (ORB)		
Phone: 912-478-5465 Fax: 912-478-0719	IRB@GeorgiaSouthern.edu	Veazey Hall 3000 PO Box 8005 Statesboro, GA 30460

To: Lathi, Caroline; Walker, Ashley

From: Office of Research Services and Sponsored Programs

Initial Approval Date: 10/9/2017

Expiration Date: 9/30/2018

Subject: Status of Application for Approval to Utilize Human
Subjects in Research Expedited Process

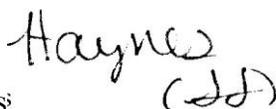
After a review of your proposed research project numbered HI 8021 and titled "Examining the Relationship between Tobacco Use and Perceptions of a New Tobacco-Free Campus Policy" it appears that (1) the research subjects are at minimal risk, (2) appropriate safeguards are planned, and (3) the research activities involve only procedures which are allowable. You are authorized to enroll up to a maximum of 250 subjects.

Therefore, as authorized in the Federal Policy for the Protection of Human Subjects, I am pleased to notify you that the Institutional Review Board has approved your proposed research. Description: The purpose of this study is to examine the perceptions of tobacco-free policy benefits and enforcement on campus with a tobacco-free policy.

If at the end of this approval period there have been no changes to the research protocol; you may request an extension of the approval period. In the interim, please provide the IRB with any information concerning any significant adverse event, whether or not it is believed to be related to the study, within five working days of the event. In addition, if a change or modification of the approved methodology becomes necessary, you must notify the IRB Coordinator prior to initiating any such changes or modifications. At that time, an amended application for IRB approval may be submitted. (Upon completion of your data collection, you are required to complete a Research Study Termination form to notify the IRB Coordinator, so your file may be closed.

Sincerely,

Eleanor Haynes
Compliance Office

Handwritten signature of Eleanor Haynes in cursive, with the initials "EH" written below it.

APPENDIX B

Hi Dr. _____,

I hope your semester is going well. I am currently completing my honors thesis and was hoping you could share my survey link with your classes by posting it on your folio sites. The survey is about undergraduate student perceptions of the tobacco-free campus policy, and the study is IRB approved under project number HI8021. I am trying to reach a variety of types of courses to collect a comprehensive sample population, and I could use your help. The survey takes less than 5 minutes and can be completed from a cellphone or computer. By taking the survey, students will be entered into a drawing for one of two \$25 giftcards. The link is below:

https://georgiasouthern.co1.qualtrics.com/jfe/form/SV_6XtT5QjeaXpGQi9

Thank you,

Caroline Lathi

APPENDIX C

The purpose of this study is to gather student perceptions and attitudes towards the tobacco-free campus policy at Georgia Southern University. Participation in this study is completely voluntary and you may withdraw at any time. Completion of this survey should take 5-10 minutes. If you provide your email, you will be entered in a drawing for the chance to win one of two \$20 gift cards. Reply to these study questions will be considered permission to use your responses in the study and confirmation that you are at least 18 years of age. Responses from the collected data are anonymous and will be reported in aggregated totals only. Caroline Lathi, an undergraduate student at Georgia Southern University, is the primary researcher. Research is being conducted to complete an Honors Program capstone project requirement. If there are any questions concerning this study please contact the researcher's faculty advisor, Dr. Ashley Walker, awalker@georgiasouthern.edu. If any social or mental discomfort occurs when taking the survey, please contact the Counseling Center at (912) 478-5541. This project has been reviewed and approved by the GSU Institutional Review Board under tracking number H18021.

	5- Strongly Agree	4-Agree	3-Neutral	2-Disagree	1- Strongly Disagree
1. I am familiar with the current tobacco policy at my university.	5	4	3	2	1
2. I personally support the tobacco-free campus policy.	5	4	3	2	1
3. My peers support the tobacco-free campus policy.	5	4	3	2	1
4. I recognize tobacco use as a serious health risk.	5	4	3	2	1
5. I believe having a 100% tobacco free campus is important.	5	4	3	2	1

6. I would obey the tobacco policy if my peers confronted me 5 4 3 2 1
for breaking the policy.
7. I would obey the tobacco policy if faculty or staff confronted 5 4 3 2 1
me for breaking the policy.
8. I would obey the policy if I were reported to the Office of 5 4 3 2 1
Student Conduct.
9. I feel comfortable addressing policy violators. 5 4 3 2 1
10. The tobacco-free campus policy has created a healthier 5 4 3 2 1
campus environment.
11. In general, students support a tobacco-free policy. 5 4 3 2 1
12. Tobacco users stopped using on campus no matter the 5 4 3 2 1
punishment for violation after the policy was
implemented.
13. I feel my campus has done an adequate job making 5 4 3 2 1
students aware of the policy.
14. I feel my campus is providing adequate resources to help 5 4 3 2 1
those that would like to change their behavior in regards
to tobacco use.

Please select all that apply:

- | | | |
|------------------------------------|------------------------------|--|
| What is your | Do you use | What type of tobacco do you |
| classification? | tobacco | use? |
| <input type="checkbox"/> Freshman | products? | <input type="checkbox"/> Not applicable |
| <input type="checkbox"/> Sophomore | <input type="checkbox"/> Yes | <input type="checkbox"/> Cigarettes |
| <input type="checkbox"/> Junior | <input type="checkbox"/> No | <input type="checkbox"/> Electronic Cigarettes |
| | | <input type="checkbox"/> Spit/Chewing |

When do you use tobacco?

Not applicable

Morning

Evening

All day

Other

Have you changed your tobacco
use behavior because of the
campus policy?

Not applicable

Use less

Use more

No change

Thank you for participating!