

ABSTRACT

Smoking Behavior Among College Students: A Survey

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Despite reductions in rates of tobacco use in recent years, smoking remains an important public health concern. Cigarette smoking is the leading cause of death in the United States, and regular smoking is usually established in early adulthood. Previous research shows that factors including risk perception, peer behavior, and participation in other risky behaviors correlate significantly with college students' smoking. This study aimed to describe cigarette-smoking behavior among undergraduate students at Baylor University by issuing an online survey via email. Current cigarette smokers were defined as having smoked ≥ 100 cigarettes during their lifetime and now smoke every day or some days; 5.3% of Baylor undergraduates were current smokers. Survey questions examined basic demographics and smoking history, student perception of smoking-related health risks, and use of other tobacco products. Relationships between smoking, peer smoking, alcohol consumption practices, and stress level were analyzed and compared, where possible, with national data.

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SMOKING BEHAVIOR AMONG COLLEGE STUDENTS: A SURVEY

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CHAPTER 1

Introduction

Introductory Remarks: A Personal Reflection

As a young teenager attending a small high school in central Texas, I had mixed feelings about smoking. School officials made many efforts to educate students about the health hazards of smoking, so I knew that cigarettes contained addictive and carcinogenic substances. However, trying new things and taking risks is classic teenage behavior, as is peer pressure and the desire to fit in. While I did not smoke, I had the impression that smoking was the “cool thing to do.”

Arriving at Baylor, I exited the teenage stage of my life and entered adulthood. I gained an interest in science and medicine, which allowed me to see firsthand the damaging effects of long-term tobacco use and understand the risk of addiction more fully. In my first experience shadowing a primary care physician, I accompanied the doctor on morning rounds to see his hospitalized patients. Of the four patients we visited, three were admitted for COPD or other smoking-related health problems. After seeing their symptoms and hearing about smoking problems in the United States from a doctor’s standpoint, the real risks of long-term tobacco use finally became clear to me.

Despite my own assurance that smoking was an unwise practice, I was surprised to see that many of my peers at Baylor smoked. As I sat on the back porch at social gatherings and watched groups of Baylor undergraduates share cigarettes and blow smoke rings into the night air, I grew more and more curious about their decision to use

tobacco. I wondered whether they fully understood the risks, or if they had started smoking as teenagers and were now addicted, unable to quit what they knew to be a bad habit. When questioned, many assured me that they only smoked on occasion and were not addicted, while others shared anecdotes about family members who had smoked their entire lives and were still healthy at age ninety. These responses only increased my curiosity.

This study emerged as a result of my desire to more fully understand my fellow students' motivations to smoke. It was approached from the standpoint of a future doctor who seeks to learn more about the public health issues and their solutions and feels a responsibility to effectively promote good health policies in future patients.

Purpose and Scope of the Report

Though rates of tobacco use have decreased in recent years, smoking remains an important public health concern in the United States and throughout the world. In fact, cigarette smoking is the leading cause of death in the United States (Vital Signs 2011). During 2000-2004, 443,000 people in the United States died prematurely each year as a result of smoking or secondhand smoke exposure (Smoking-Attributable Mortality, 2008).

Regular smoking is usually established in early adulthood, and studies show that people who begin smoking at an earlier age are less likely to succeed in quitting (Everett et al. 1999). While 84% of young adult smokers (age 18-24) report having seriously tried to quit, only 8.5% report having successfully quit for 6 months or longer (Messer et al.

2008). Smoking behavior among high school students has been widely studied, but there is less information available about smoking by college students. While members of these two groups share many similarities, universities have unique social structures and procedures that influence student behavior. Stresses, social opportunities and expectations, and responsibilities change a great deal from those found in a high school setting. In addition, the environment of learning fosters academic growth and knowledge.

In particular, Baylor University is a unique environment that promotes learning within a group of students, most of whom range from age 18 to 23. This medium-sized private school focuses on Baptist Christian traditions and morals (“Quick Facts” 2011). Its location, size, and goals attract a group of students that differ, on average, from the student population of nearby Universities. For example, about 59% of Baylor freshmen rated themselves “above average” or “highest 10 percent” in level of spirituality as compared with the average person of his/her age, far exceeding the percentage of students from private and public universities (“Imperative IV” 2011).

Baylor University’s official policy on smoking is stated, “Because of the desire to protect the health and lives of everyone in the Baylor community, smoking is banned in all University facilities wherever located in Waco” (“Student Policies and Procedures: Smoking”). Smoking is allowed on campus, but is restricted to outside areas at least 30 feet away from the premises of any building (ibid).

Because of the unique traits found in this population, its specific smoking tendencies and opinions were expected to differ from those examined in a nationwide

survey of college students. This study sought to accurately elucidate smoking motives, behaviors, and risk comprehension for Baylor undergraduates in particular, and analysis examined the differences between Baylor and other undergraduate universities studied in previous research.

The objective of this study was to describe cigarette-smoking behavior among undergraduate students at Baylor University. In addition to basic demographics such as age and smoking history, survey questions allowed examination of student perception of smoking-related health risks. Relationships between smoking, peer smoking, alcohol consumption practices, and stress level were analyzed. No previously published data are available describing tobacco use specifically at Baylor, and this new information should further our understanding smoking perceptions and tendencies among students, thereby enabling Baylor to target prevention resources more effectively.

CHAPTER 2

Literature Review

Tobacco use is one of the most important health concerns in the United States today. Though numbers have decreased in recent years, there were an estimated 69.6 million Americans who used tobacco products in the year 2010 (*Results from the 2010 National Survey* 2011). According to estimates made by the Centers for Disease Control and Prevention using data from the 2000-2004 National Health Interview Survey responses and death certificates, cigarette smoking was the leading cause of death in the United States. It is estimated that approximately 19.3% of Americans over age 12 were current smokers as of the year 2010, with current cigarette smokers defined as “adults aged ≥ 18 years who reported having smoked ≥ 100 cigarettes during their lifetime and who now smoke every day or some days.” (Vital Signs: Current Cigarette Smoking Among Adults Aged ≥ 18 Years 2011).

The consequences each year included \$96 billion in health costs and 5.1 million life years lost (Smoking-Attributable Mortality 2008). Smoking increases the risk of many cardiovascular, respiratory, and neoplastic diseases as well as other adverse health effects such as infertility and osteoporosis (U.S. Department of Health and Human Services 2004). Fortunately, adult populations have experienced a slow decrease in smoking numbers in recent years. Smoking fell 1.6% between 2005 and 2010, representing approximately 3 million fewer smokers than would have existed had no decrease occurred (Vital Signs: Current Cigarette Smoking Among Adults Aged ≥ 18 Years 2011).

Secondhand smoke also poses a threat to non-smokers, causing an estimated 46,000 heart disease deaths and 3,400 lung cancer deaths annually in the United States (Smoking-Attributable Mortality 2008). In addition, 8.9 million Americans used smokeless tobacco and 2.2 million smoked tobacco in pipes in 2010 (*Results from the 2010 National Survey* 2011). Smokeless tobacco contains 28 known carcinogens; it also has negative effects on oral and reproductive health (“Smokeless Tobacco Facts” 2011). Likewise, cigars, cigarillos, little cigars, and pipe tobacco contain the same toxic and carcinogenic compounds found in cigarettes. They have also been found to increase the risk of oral, respiratory, and cardiovascular diseases (Burns et al. 1998). Regardless of the method used to ingest tobacco, this lifestyle choice is a prominent cause of preventable disease and death, and as such is an important topic for healthcare providers and educators.

Tobacco use varies among different demographic groups. In 2010, male Americans were 4.2% more likely to be smokers than females. Among age groups between 18 and 64, smoking percentages varied little: 20.1% of Americans age 18-24, 22% of those age 25-44, and 21.2% aged 45-64 were smokers. Only 9.5% of people over 65 were smokers, however. This is likely due in part to the shortened average lifespan of smokers compared to nonsmokers. Variation in frequency appeared between most racial groups. Though white and black smokers showed similar percentages (21% and 20.6%, respectively), a low 12.5% of Hispanics and 9.2% of Asians and a high 31.4% of American Indians were smokers. Poverty status, likewise, was a predictor of tobacco use: Americans below poverty level were 10.6% more likely to smoke than those at or

above poverty level (Vital Signs: Current Cigarette Smoking Among Adults Aged ≥ 18 Years 2011).

There are limited data available examining the relationship between religious affiliation and smoking practices. One study found that American adults who attended frequent religious services were less likely to be smokers than infrequent attenders. “Further, among smokers, frequent attenders smoked significantly fewer cigarettes per day” (Gillum 2005). Except for the Church of Latter Day Saints, tobacco use is not explicitly discouraged by major religions because it was not available or known when their scriptures were written. However, most – including Christianity, Judaism, Hindu, Buddhism, and Islam – have principles that forbid or discourage the use of addictive substances. Islam, for example, declares practices that are harmful to one’s health to be forbidden (Yong et al. 2008). The Roman Catholic Church discourages excess in smoking in Catechism 2290, which states that, “The virtue of temperance disposes us to *avoid every kind of excess*: the abuse of food, alcohol, tobacco, or medicine.” (Catholic Church 2000).

Education levels are strongly associated with differences in smoking use frequencies. In one study, among American adults, 23.8% of high school graduates were smokers. A shocking 45.2% of those who received a GED smoked. Of those with some college education but no degree 23.2% smoked. The trend of decreasing smoking numbers with increasing education levels continues: 18.8% of those with an associate degree, 9.9% of college graduates, and 6.3% of graduate degree holders smoked (Vital Signs: Current Cigarette Smoking Among Adults Aged ≥ 18 Years 2011)

Despite laws banning smoking under 18 years of age, smoking habits are usually formed in adolescence. More than 80% of adult smokers begin smoking before 18 years of age (“Youth and Tobacco Use” 2012). For this and other reasons, this age group is frequently the focus of smoking research. The National Youth Tobacco Survey, a school-based survey of middle school and high school students, has been a valuable source of information concerning the tobacco use and perceptions among adolescents since it was first issued in 2000. Many investigators analyze the data collected to determine different trends in adolescent tobacco use, and findings from this data are used in this study to compare high school and university tobacco use (*Results from the 2010 National Survey* 2011). “Each day in the United States, approximately 3,800 young people under 18 years of age smoke their first cigarette, and an estimated 1,000 youth in that age group become daily cigarette smokers” (“Youth and Tobacco Use” 2012). The longer a person smokes, the more difficult quitting smoking tends to be; young people are more likely than other adults to successfully quit (Messer et al. 2008). In 2006, the National Youth Tobacco Survey showed that 14.0% of high school students had used cigars, cigarillos, little cigars, or tobacco from a pipe and 8.9% had used smokeless tobacco within the last month (“Youth and Tobacco Use” 2012).

Adolescents are often targeted by anti-smoking campaigns that aim to teach the dangers of tobacco use and discourage students from trying cigarettes. These have shown mixed results in recent years: “From 2000 to 2009, prevalence of current tobacco and cigarette use and experimentation with smoking cigarettes declined for middle school and high school students, but no overall declines were noted for the 2006--2009 period.”

(Arrazola et al. 2010). Use of smokeless tobacco among 12 to 17 year olds has actually increased 0.3% from 2002 to 2010 (*Results from the 2010 National Survey* 2011).

However, research has shown that young adolescents who are exposed to anti-smoking television ads are significantly less likely to start smoking. Among younger adolescents (aged 12 to 13 years at baseline), those reporting baseline exposure to television antismoking advertisements were significantly less likely to progress to established smoking (Messer et al. 2008).

A common explanation for adolescent smoking is that “adolescents have poor decision-making and risk-judging skills, leading them to believe they are invulnerable to harm” (Song et al. 2008). Song and colleagues studied the relationship between perception of smoking risks and smoking initiation among high school students. The study found that risk perception was a predictor of smoking: students with a low risk perception or a high benefit perception about three times more likely to start smoking. In addition to perception of long-term health risks, the threat of short-term social issues such as bad breath and disciplinary risks also significantly influenced smoking initiation (Song et al. 2008).

Peer pressure is also commonly believed to influence teen smoking behavior. Previous studies of social influences on adolescent smoking found that peer smoking is strongly associated with current smoking among early and middle adolescents. The magnitude of the association between peer smoking and current smoking decreases from early adolescence to middle adolescence. Parent smoking and exposure to tobacco-

related media are also associated with increased smoking in adolescence (Villanti et al. 2011).

While college students are close in age to high school students, their social structure differs and their mental capacity for decision-making and risk-assessment are more developed. As a result, it is necessary to study university students separately to determine how peer pressure and perception of risk influence this age group. In addition, college students tend to face greater stress levels and a higher prevalence of alcohol use. It is worth investigating how these factors affect students' tobacco use. Several studies have shown that key differences do in fact exist between the two groups with regards to smoking behavior and opinions.

As stated above, the percentage of American college graduates who smoke, 9.9%, is around half the national adult average of 19.3%. However, among currently enrolled, full-time college students, 24.8% reported cigarette use in the past month in 2010 (*Results from the 2010 National Survey* 2011). A 2004 study of college students found that 11.5% of nonsmokers begin smoking occasionally during their four years as an undergraduate (Wetter et al. 2004). Full-time college students were less likely to be current cigarette smokers than their peers who were not enrolled full time in college. Among young adults aged 18 to 22 who are not in college full-time, 39.9% were smokers in the year 2010. The same pattern was found among both males and females in this age range (*Results from the 2010 National Survey* 2011). Among recent regular smokers age 18-24, 84% reported that they had seriously tried to quit in the past year, but only 8.5% succeeded in quitting (Messer et al. 2008).

As observed in the overall population, males who are full-time college students are more likely to be smokers than female college students. In 2010, 27.1% of male college students smoked (*Results from the 2010 National Survey* 2011). Race is a demographic indicator of college student smoking risk as well: whites are most likely to smoke, followed by Hispanic and Asian-Pacific Islander. Black students are least likely to be smokers (Patterson et al. 2004). Few studies have investigated the relationship between religion and college smoking frequency. However, literature suggests that students who consider religion to be a “not very important” part of their lives are more likely to be smokers (Emmons et al. 1998).

Few studies have examined the use of smokeless tobacco among college students (Monson and Beaulieu 2011). One 2005 survey of university students in Texas reported that 17.1% were current smokeless tobacco users. Rates were much higher for men than women. While only 8.5% of female respondents had ever tried smokeless tobacco and 3.2% were current users, 31.8% of men had tried it and 22.4% were current users (Morrell et al. 2005). College students often underestimate or do not know health risks associated with smokeless tobacco use, and current users are more likely than nonusers to perceive smokeless tobacco as a safer alternative to smoking (Monson and Beaulieu 2011).

Perceptions of smoking-related health risks (Prokhorov et al. 2002) and benefits are also predictors of smoking practices among college students (Song et al. 2009). Respiratory systems are shown to predict a smoker’s desire to quit, with more severe symptoms associated with stronger intent to quit.

“An “optimism bias” regarding smoking-related health was evident among smokers; over half of the current smokers believed that their health was better than the average same-age smoker’s health, and 19% believed that their health was better than that of the same-age nonsmoker. Furthermore, virtually all of the smokers perceived that their health was either not at all or only slightly affected by smoking, and almost half of smokers thought that quitting would bring either no benefit or only minor benefit to their health. Of the smokers, 45% believed that continuing to smoke would have only minor or no impact on their health (Prokhorov et al. 2002).”

Undergraduate smokers also tend to undervalue the health consequences associated with short-term cigarette use relative to nonsmokers. Smokers were half as likely as nonsmokers to believe that there are health risks from smoking only a couple of days a week or on weekends (Murphy-Hoefer et al. 2004).

Peer pressure has been shown to play a role in college student smoking habits and perceptions. The more college students think their peers approve of smoking, the more likely they report a higher level of smoking intention. Further, it was found that the perceived approval of “close peers” predicts smoking use most strongly (Paek 2009). College students have been shown to consistently believe that more of their peers smoke than actually do so (“Big Tobacco on Campus” 2008). Belonging to a fraternity or sorority (Staten et al. 2007) and participation in intercollegiate sports are also predictors of both smoking and smokeless use (Morrell et al. 2005). Social smoking is a recently identified phenomenon among young adults in which subjects identify that they only smoke in social environments. As a result, they consider themselves to be different from other smokers and often do not describe themselves as being smokers. More than two-thirds of college smokers are social smokers (Waters et al. 2006).

A link between alcohol and tobacco has been well established across populations. In particular, it was found that college students who are current drinkers and drink in high-risk ways are much more likely to start smoking in college than those who do not drink. This study, which examined the factors contributing to smoking initiation among college students, also found that 13% of students began using cigarettes at college (Staten et al. 2007). Conversely, student smokers are more likely to use alcohol and other substances and commonly report experimenting with marijuana, cocaine, or other drugs while smoking (“Big Tobacco on Campus” 2008).

College students report they often use smoking as a means of controlling stress or depression, and may smoke to signal to their friends or classmates when they are unhappy or distressed (“Big Tobacco on Campus” 2008). Specifically, females who are vulnerable to depression are more likely to smoke, in part because they feel it will relieve negative mood (Morrell et al. 2010). In another study, relieving stress was named as one of the top two reasons college respondents used smokeless tobacco (Monson and Beaulieu 2011).

Several methods to decrease smoking, both general and college-specific, have been put in place in recent years and shown to effectively reduce smoking numbers. Cigarette taxes have been raised in every state, and higher per pack costs have been shown to reduce cigarette consumption (Sung et al. 2005). More than 130 colleges and universities across the nation have banned smoking on the entire campus, including outdoor areas (*U.S. Colleges and Universities with Smokefree Air Policies Table* 2008). Smoke-free air policies and laws have been found to help reduce the amount of smoking

and assist people to quit smoking. In a 2011 study evaluating the impact of a smoke-free campus policy on college students' smoking behaviors and attitudes, it was determined that students exposed to a smoke-free campus policy demonstrated significant favorable changes in smoking, smoking norms, and perceptions of peer tobacco use (Seo et al. 2011). Evidence also indicates that restrictions on smoking in student housing decrease college students' likelihood of starting or increasing smoking (Patterson et al. 2004).

CHAPTER 3

Research Design and Methods

This study was designed to be descriptive in nature and uses primarily categorical and quantitative data. The data were gathered using an online Qualtrics survey. The smoking survey was structured to collect basic demographic information, smoking and smokeless tobacco history, peer behavior, alcohol use, stress, and risk perception. Most survey questions were taken from the National Youth Tobacco Survey and the Centers for Disease Control and Prevention question database. Using these tested questions lends validity to the study, and provides some basis for comparison to nationally collected data. The objective of the study was to better understand respondent smoking practices and viewpoints among Baylor undergraduate students.

Research Questions

To better gauge smoking tendencies among Baylor students, the following questions were answered:

1. What are the smoking behaviors of Baylor University undergraduate students?
2. Is there a relationship between Baylor undergraduate student smoking behavior and alcohol consumption practices?
3. Is there a relationship between student smoking behavior and stress?
4. Is there a relationship between student smoking behavior and peer smoking behavior?
5. Is there a relationship between student smoking behavior and perception of smoking risks and benefits?
6. How do smoking tendencies vary with gender, age, race, and religion?

Research Objectives

Specifically, the objectives of the study were as follows:

1. Develop an online survey with questions that identify characteristics of smoking behavior.
2. Distribute the survey via email to a portion of Baylor undergraduate students.
3. Collect data from a representative sample of students.
4. Analyze data collected to accurately answer the questions listed above.
5. Determine and describe the significance of findings as they pertain to Baylor students and officials.
6. Compare, where possible, the responses of Baylor undergraduate students to other similar, nationally collected data.

Time Table

The investigation began in fall of 2011 with the development of an online Qualtrics survey. The Baylor Internal Review Board ruled the study “exempt” on February 13, 2011 (see Appendix C). A small pilot was conducted. The data collection began on February 27, 2011 and continued for a one-month period. Analysis was conducted in April, upon completion of data collection.

Participants

A total of 1,617 Baylor students participated in the study. Undergraduate student enrollment was 11,802 (“Spring 2012 Headcount” 2012) and the survey was emailed to roughly 9,100 students as described in the “Data Collection” section below. This estimate was made using student numbers provided by participating deans and chairs and, when not given, the Spring 2012 Headcount Enrollment Report by Major and Program (ibid). Thus, approximately 18% of email recipients chose to complete the survey.

Minorities made up 33.5% of the student population, and females were more numerous than males, with 58% and 42%, respectively (“Imperative IV” 2012).

College students under age 18 or over age 24 were eliminated from the study, in accordance with institutional review board documents and the current recognized definition of “college student” in other smoking research. Any students who named a graduate degree program in response to the question, “What is your major field of study?” was also excluded. A total of 120 students were removed on this basis, leaving 1,497 completed surveys for analysis. Information from 12.7% of the total spring 2012 undergraduate population was used in the study. Within the established age range of 18-24, the mean age of the participants was 20.11.

Survey Instrument

Undergraduates were surveyed using the Smoking Behavior Among College Students Survey found in Appendix A. The survey was created on Qualtrics, an online survey and analysis software program licensed by Baylor University for use by faculty and students that is found at <http://baylor.qualtrics.com>. Qualtrics provides, in addition to a means of survey design and distribution, analysis and reporting tools that provided basic statistical values and allowed for the creation of graphs, charts, and cross-sectional comparisons. The survey began with a consent form; students were required to read the information and answer, “I agree” to verify that they were at least 18 years old, had read and understood the form, were aware of their rights as a participant, and agreed to participate in this research before continuing on to the rest of the survey.

Subjects' privacy was protected by issuing an anonymous survey excluding any positively identifying factors. The Qualtrics program included an "anonymize response" option. This was selected, so no personal information was recorded beyond the basic, non-identifying demographic data. When viewing results, IP addresses were listed in place of the respondent's name. Access to these anonymized results was given only to the primary investigator, project advisor, and a statistician for help with analysis.

A "Demographics" section follows that asks basic questions such as age, religion, and major field of study. Other sections are titled "Smoking Practices", "Cigars and Pipes", "Smokeless Tobacco", "Peer Behavior", "Alcohol", "Stress", and "Opinion". Survey questions include, for example:

Q6.2 During the past 7 days, on how many days were you in the same room with someone who was smoking cigarettes?

- ☐ 0 days
- ☐ 1 or 2 days
- ☐ 3 or 4 days
- ☐ 5 or 6 days
- ☐ All 7 days

Qualtrics allowed for "survey flow" and "display logic" adjustments to minimize redundancy for survey takers. For example, if someone answered "No" to the question, "Have you ever tried smoking, even one or two puffs?" they would automatically skip the "Smoking Practices" section and move directly to "Smokeless Tobacco." As a result of this feature, survey length varied widely among students depending upon their responses. Because the answer was necessary for the data analysis, the question, "Have you ever tried smoking, even one or two puffs?" was required; if a student did not wish to answer

this question, he or she had to discontinue the survey. All other responses were optional.

An informal pilot was conducted to estimate survey time, ensure the clarity of the consent form and survey questions, and assure that all processes were working as projected. Four fellow college students were emailed the link and completed the questionnaire; their times ranged from five to ten minutes. One repeated question was noticed and deleted. No other changes were suggested.

Data Collection

Deans and program chairs were contacted by the researcher and asked to forward an email containing the survey website link (see Appendix D) to the address list of students in their respective departments. Students in the School of Education, School of Music, and School of Business received a forward of the email message from their department dean or office. Students in the School of Social Work received a link to the survey as part of their regular newsletter email.

Because no exhaustive list of School of Arts and Sciences students was available to the Dean, chairs of the individual majors were asked to forward the email to their undergraduate student lists. Similarly, the individual engineering program chairs were contacted. At least some (and in most cases all) students with majors in Art, Classics, English, Modern Foreign Languages, Philosophy, Theatre Arts, Biology, Chemistry, Environmental Science, Geology, Math, Psychology and Neuroscience, Statistics, Sociology, Political Science, Museum Studies, Journalism, Communication, Family and Consumer Sciences, Anthropology and Archaeology, Communication, Computer

Science, and Engineering received the survey. Surveys were administered online and accessed via a link send to students' Baylor email addresses.

Small incentives were offered to increase student response numbers. Personal funds were used to buy three \$20 gift cards to each of the following: HEB, Wal-Mart, and iTunes. As advertised in the email/newsletter, students who completed the survey could enter to win one of the three gift cards. Upon completion of the Smoking Behavior Among College Students Survey, Qualtrics automatically redirected students to a second survey (see Appendix B). This Qualtrics survey contained only the statement, "To enter the drawing for a chance to win a \$20 gift card, please type your email address below" and an open text response box. Entry was optional and did not affect the use of the students' data.

After two weeks, deans who agreed to forward a second email sent a reminder to their student email list that restated the purpose, possible rewards, and link to the survey. Settings for both surveys were set to "Prevent Ballot Box Stuffing", a Qualtrics option that blocked students from taking the survey more than once. After the reminder email was sent, the survey remained open for another two weeks; students had the opportunity to complete the questionnaire for a maximum of four weeks. After this period, the survey was closed and the emailed link was no longer active.

In total, 1617 students completed at least part of the survey and 1469 entered to win one of the gift cards. After terminating the surveys, www.random.org was used to generate three random numbers between 1 and 1469. The email addresses in the ordered list of second survey results that corresponded to each random number were gift card

winners. The first was chosen as winner of the HEB gift card, the second account listed won the Wal-Mart gift card, and the third account won the iTunes card. Emails were sent to these students, notifying them that they were winners and asking them to respond with a mailing address to which the gift card was sent. Gift cards were mailed out two days after the end of the survey.

Analysis

Because questions used were taken from the “National Youth Tobacco Survey” and other published surveys, compatible national data were available and was used in comparison with the responses of Baylor students when appropriate. A pooled t-test on two proportions was used to compare survey response percentages with those of previous research findings. The significance of observed differences is reported at the .05 level in this report. After calculating the value z for a data set, p was found using a Standard Normal Cumulative Probability Table (<http://www.fordham.edu/economics/vinod/StdNormCumDistTable.pdf>).

Limitations

Ideally, this survey would have been used to sample all Baylor undergraduate students over the age of 18. However, several factors limited the response numbers. Baylor policy prevents students from sending an email to all undergraduates. Established process requires Deans and Chairs to approve the request and email the survey link to their students. Not all deans were willing and/or able to forward the email to a list of

students in their school or college. In efforts to maximize participant numbers, chairs of individual majors under the College of Arts and Sciences and the School of Engineering were contacted; however, not all of these faculty members responded and/or were willing to forward the email. Both the deans and chairs of several departments were unwilling to participate, so no students in these majors participated. Also, the use of the newsletter to distribute the survey to Social Work students may have reduced response numbers among that group, as some students had probably developed a habit of ignoring or skimming this regularly received email. Because the deans and chairs responded to the request and forwarded the email when their schedules allowed, the survey was distributed gradually to students over the course of four weeks. As a result, some students had longer to complete the survey than others.

Though response numbers were higher than expected, the inability to survey every student decreased the likelihood that data collected accurately represented population data. While incentives were provided to encourage higher response, they were limited by cost and therefore relatively small. In addition, the use of incentives may have biased responses. Monetary rewards for participation have been shown to correlate with respondents' tendency to distort responses in a socially desirable way (Cannell and Henson 1974).

One important constraint was the inability to ensure that a proportional number of smokers responded to the survey. Because the topic of smoking may be accompanied by feelings of social stigma or discrimination, smokers may have been less motivated to participate. This tendency would skew the results to over-represent nonsmoker practices

and opinions. A statement of the purely academic intentions of the study was included in the consent form to encourage both smokers and nonsmokers to participate without bias.

The use of survey questions from previously validated surveys – the National Youth Tobacco Survey and the CDC smoking survey questionnaire database – lent some validity to the survey used. However, the validity of the survey as a whole is not known. Questions were selected based on their perceived utility in answering the “Research Questions” listed above. Some formatting changes were made to increase uniformity among questions. Efforts were made to keep the number of questions to a minimum in order to decrease survey completion time. As a result, the survey questions used may not have provided ideal or complete data for answering the research questions. If the survey or collected data were to be used in the future, its validity should be tested.

CHAPTER 4

Results

Smoking Practices

Demographics

Gender. Of the 1,497 study participants, two-thirds were female (66%) and one-third was male (34%). This was significantly different from the Baylor gender distribution (58% females and 42% males) described above ($p < 0.001$) (“Spring 2012 Headcount” 2012). Tendencies among smokers did, however, reflect national findings. Males were significantly more likely to be current smokers than females: 8.2% of males smoked, whereas only 2.4% of females smoked ($p < 0.001$) (*Results from the 2010 National Survey* 2011).

Ethnicity. Seventy-seven percent of respondents described themselves as white. Twelve percent were Hispanic or Latino, 10% were Asian, 7% were black or African American, 1% were American Indian or Native Alaskan, and 1% were Native Hawaiian or other Pacific Islander. Differences in smoking frequency among different ethnicities were observed in this study. At 17.6%, American Indian or Native Alaskans were most likely to smoke. Five point nine percent of Hispanics or Latinos and 5.5% of whites smoked. Only one African American respondent smoked, a rate of less than 1%, and no Native Hawaiian or other Pacific Islander smoked. The high frequency of smokers observed in the American Indian population reflected national trends.

Religion. Religious affiliation showed some association with reduced smoking rate.

		Have you ever tried smoking cigarettes, even one or two puffs?		
		Yes	No	Total
What is your religion?	Nonreligious	81	91	172
	Protestant Christian	213	564	777
	Roman Catholic	71	121	192
	Evangelical Christian	61	129	190
	Jewish	1	0	1
	Muslim	4	8	12
	Hindu	4	4	8
	Buddhist	2	7	9
	Other	52	83	135
Total		489	1007	1496
As far as you know, does your religion discourage smoking?	Yes	173	450	623
	No	290	539	829
	Total	463	989	1452

Figure 2. Cross-section of responses to the question, ‘Have you ever tried smoking, even one or two puffs?’ with the questions, “What is your religion?” and “As far as you know, does your religion discourage smoking?”

As seen in Figure 2, a higher percent of students who described themselves as “Nonreligious” smoked than of those who described themselves as “Protestant Christian”, “Roman Catholic”, “Evangelical Christian”, “Muslim”, and “Buddhist”. The percentage of smokers was lowest for Protestant Christians (27.4%), which was little over half of the percentage of nonreligious smokers (47.1%). Thus, Protestant Christians were significantly less likely to be regular smokers than those who classified their religion as “nonreligious” ($p < 0.05$). In addition, there was a statistically significant correlation between the belief that one’s religion discourages smoking and likelihood of trying

cigarettes ($p<0.02$). About half of Protestant Christians, one third of Roman Catholics, and two thirds of Evangelical Christians believed that their religion discouraged smoking.

Smoking Initiation

Of the respondents, 67% of surveyed students reported that they had never tried smoking, even one or two puffs. Among those who had tried smoking at least once, most respondents tried smoking at or above the age of 16, and 46% tried at 18 years old or older, as seen in Figure 1.

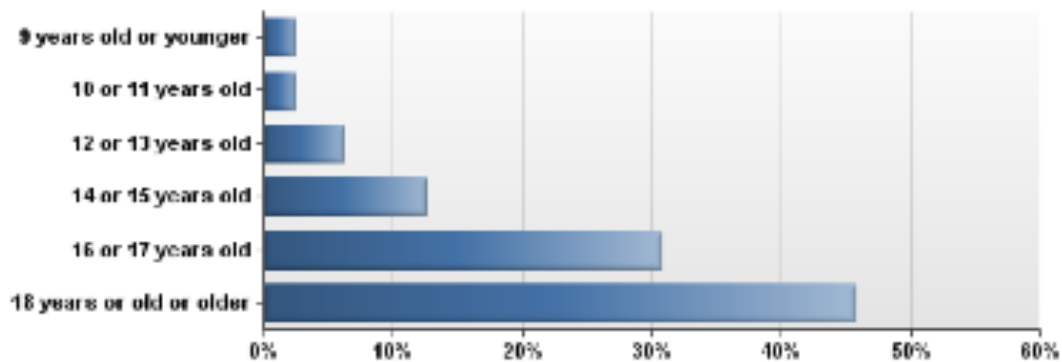


Figure 1. Percentages of responses to the question, ‘How old were you when you first tried smoking, even one or two puffs?’

One quarter of those who had tried smoking at least once also reported that they had had “one or puffs but never a whole cigarette.” Another 11% reported that “I no longer smoke, but in the past I was a regular smoker.”

Overview: Current Smokers

In accordance with most recent smoking research, current college student cigarette smokers were defined as adults aged 18-24 years who “reported having smoked

≥100 cigarettes during their lifetime and who now smoke every day or some days.”

(Vital Signs: Current Cigarette Smoking Among Adults Aged ≥18 Years 2011).

Seventy-eight students, or 5.2% of respondents, were current smokers as defined above.

This was significantly lower than the national average for college smokers of 21.8%

($p < 0.001$) (*Results from the 2010 National Survey* 2011). Among current smokers, none

had first tried smoking under age 12 and 36% tried smoking at or above age 18. Only

48% of current smokers wanted to quit smoking. This was significantly lower than the

national rate among college students of 84% ($p < 0.001$) (*Results from the 2010 National Survey* 2011).

Smoking Location

Occasional smokers (respondents who had tried smoking before and were not classified as current smokers) were more likely to smoke in social settings than in private.

In response to the question, “Where do you smoke cigarettes? (You can CHOOSE ONE ANSWER, or MORE THAN ONE),” the most common answers were, “At sports events, parties, dances, raves, or other social events” (24%) and “At friends’ houses” (19%), as shown in Figure 3.

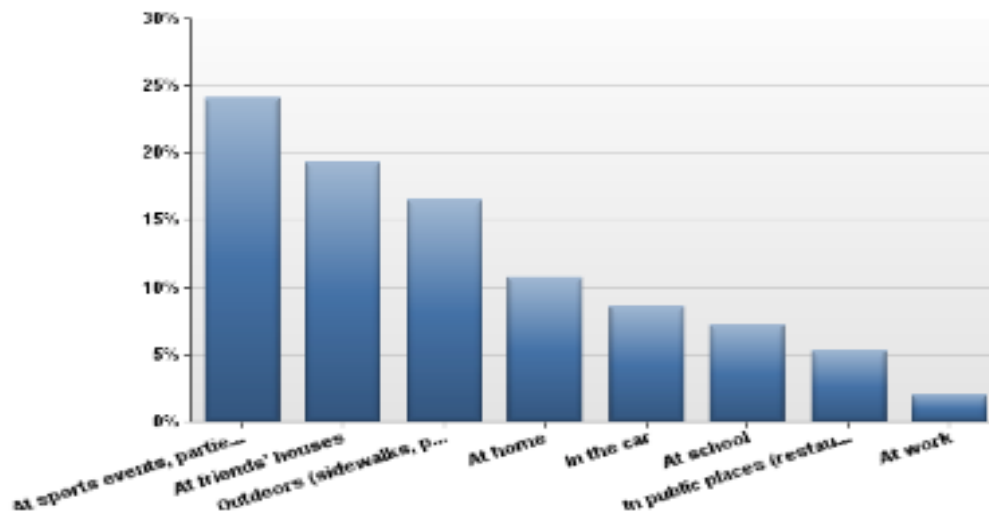


Figure 3. Percentages of answers to the question, “Where do you smoke cigarettes? (You can CHOOSE ONE ANSWER, or MORE THAN ONE)” for occasional smokers.

As seen in Figure 4 below, current smokers were more likely to smoke in all of the locations listed as answer options and showed less of a tendency to limit themselves to social settings. They were most likely to smoke outdoors, in places such as sidewalks, parking lots, and parks (74%).

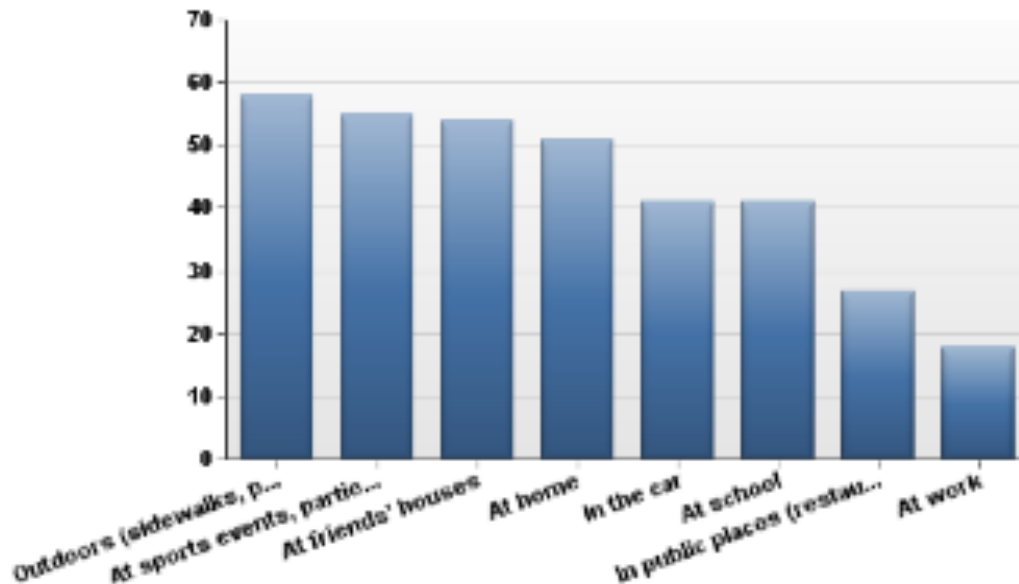


Figure 4. Percentages of answers to the question, “Where do you smoke cigarettes? (You can CHOOSE ONE ANSWER, or MORE THAN ONE)” for current smokers.

Sixty-eight percent of current smokers and 54% of all students who had tried smoking had smoked on school property at least once in the previous 30 days.

Cigars and Pipes

Twenty-four percent of surveyed students answered yes to the question, “Have you ever tried smoking cigars, cigarillos, little cigars, or tobacco from a pipe, even one or two puffs?” Three fourths of respondents who had tried smoking cigarettes at least once and 94% of current smokers answered yes. In the 30 days before the survey, 7.3% of students had smoked cigars, cigarillos, little cigars, or tobacco from a pipe. This was significantly lower than the rate among high school students found by the National Youth Tobacco Survey ($p < 0.001$) (“Youth and Tobacco Use” 2012). Cigar and pipe use on campus was less frequent than that of cigarettes: 33% of students had smoked one of

these products on school property. Fifty-two percent of those who had tried a cigar or similar product first smoked at or above the age of 18. Males were 24% more likely than females to have tried smoking cigars or pipes.

Smokeless Tobacco

Among Baylor undergraduates, 8.6% had used chewing tobacco, snuff, or dip at least once. This was significantly lower than the rate of 17.1% found in a 2005 survey of Texas university students ($p < 0.001$) (Morrell et al. 2005). Males were significantly more likely to have tried smokeless tobacco than women. This trend has been shown to occur nationally in all age groups. Among those who had used smokeless tobacco, 27% tried it between ages 16 and 17 and 55% tried it at 18 years old or older. Thirty-four percent of respondents had used chewing tobacco, snuff, or dip on school property within the last month.

Peer Behavior

Data for several survey questions indicate that peer smoking behavior correlates positively with smoking behavior. Smokers were more likely than nonsmokers to have friends and roommates who smoke. While 69% of respondents answered “0” to the question, “How many of your four closest friends smoke cigarettes?” and only three percent answered “4”, 79% of regular smokers had at least one close friend who smoked. Thirty-seven percent of smokers lived with another smoker, but only 11% of all respondents had roommates who smoked. Similarly, smokers were more likely to have

close friends who used cigars, cigarillos, little cigars, or tobacco from a pipe (57%) or smokeless tobacco (34%) than overall respondents (32% and 15%, respectively). As seen in the graphs below, smokers (Figure 5) were more likely to spend time around people who are smoking than all respondents (Figure 6).

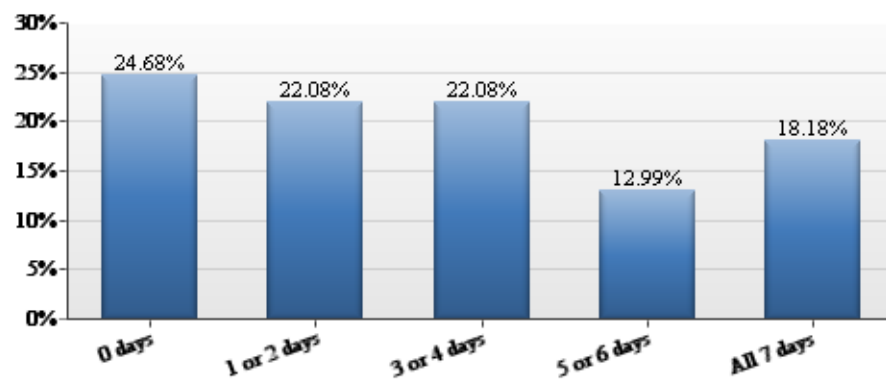


Figure 5. Percentages of answers to the question, “During the past 7 days, on how many days were you in the same room with someone who was smoking cigarettes?” for current smokers.

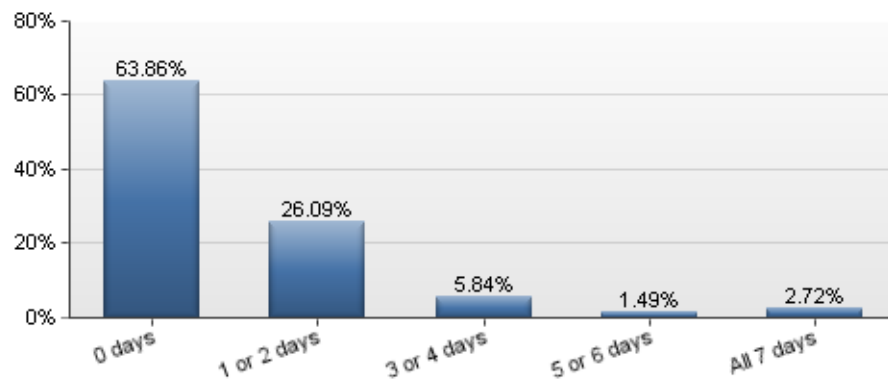


Figure 6. Percentages of answers to the question, “During the past 7 days, on how many days were you in the same room with someone who was smoking cigarettes?” for all respondents.

More than half (52%) of current smokers answered, “Strongly agree” when asked whether they were more likely to smoke when with friends who smoke. Within the total

response pool, answers varied: 39% answered, “Strongly disagree” or “Disagree” and 46% answered, “Strongly agree” or “Agree”. Overall respondents were much less likely than current smokers to report that their best friend approves of smoking: 68% of current smokers and only 30% of all respondents said that their best friend disapproves at least somewhat of smoking.

No differences are observed between smokers and overall respondents when questioned about perceived peer pressure to smoke. For both groups, 9% reported that they felt pressured by friends and classmates to smoke cigarettes in high school and 7% felt pressured as an undergraduate. Regardless of smoking status, very few people agreed that “Smoking cigarettes makes young people look cool or fit in.”

Alcohol

Twenty-six percent of respondents and 31% of current smokers who had tried smoking at least once were under the influence of alcohol when they first tried a cigarette. Seventy-eight percent of current smokers 55% of those who had smoked at least once reported that they are more likely to smoke if they have been drinking. Conversely, respondents from both groups were more likely to respond that they disagree or strongly disagree when asked to rate the statement, “I can’t imagine having a drink without smoking.” Respondents estimated that they had visited a drinking establishment, bar or pub an average of 14.0 times in the past 6 months; the average number of visits for current smokers was 22.1.

Stress

A slight difference in stress level was observed between all respondents and current smokers. Current smokers were 8% more likely to rate their stress level as a 4 or 5 (with 5 being the highest) than all respondents. Students who had tried smoking at least once were twice as likely to rate their stress level a 5 than those who have never smoked. Smokers were significantly more likely to smoke when stressed: 82% answered, “Agree” or “Strongly agree” when asked to rate the statement, “I am more likely to smoke if I feel anxious, stressed, or uncomfortable.” Thirty-four percent of occasional smokers and only 10% of all respondents agreed or strongly agreed with this statement. Seventy-two percent of current smokers, 45% of occasional smokers, and 25% of all respondents reported that they believe smoking cigarettes is at least somewhat effective at reducing stress. Similarly, 79% of current smokers, 30% of occasional smokers, and 24% of all respondents agreed that smoking helps them relax when tense or upset. Contrary to previous findings, however, males were more likely than females to see smoking as a way to relieve stress.

Opinion and Perception

Smokers were more likely to underestimate the addictiveness of smoking. A high number of current smokers (78%) believed that they would not be smoking in five years. Only 41% considered themselves addicted to cigarettes, and 78% agreed or strongly agreed that they could quit smoking anytime if they really wanted. Occasional smokers

and respondents overall were most likely to “Neither agree or disagree” with the statement. While 93% of current smokers believed that one can smoke a few cigarettes without becoming addicted to them, 87% of occasional smokers and 65% of total respondents agreed. As seen in Figure 7, current smokers gave a wide range of questions when asked if they thought they would ever be addicted to cigarettes. A health advisor had advised 28% of current smokers to quit.

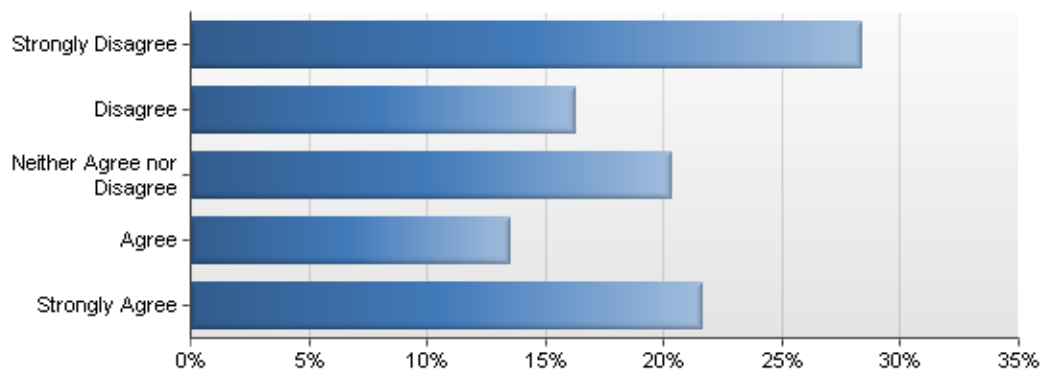


Figure 7. Percentages of answers to the question, “Rate the following statement: I will never be addicted to cigarettes.” by current smokers.

Figure 8 shows that, among all respondents, students were unlikely to think they will ever be addicted to cigarettes.

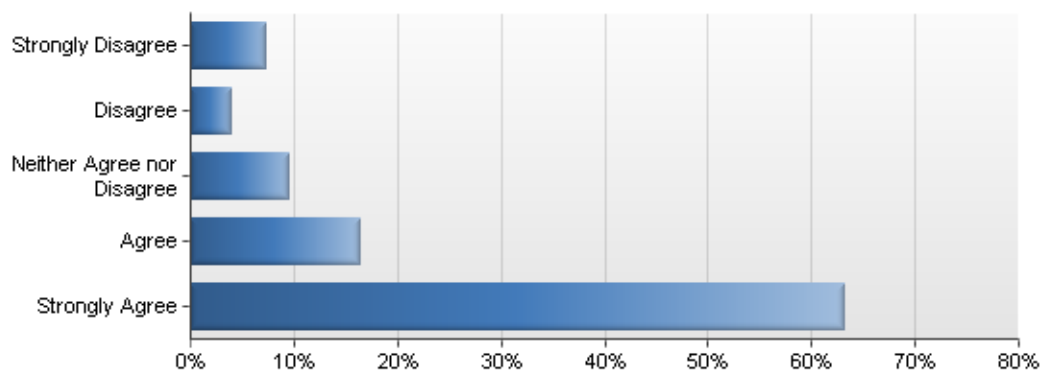


Figure 8. Percentages of answers to the question, “Rate the following statement: I will never be addicted to cigarettes.” by all respondents.

Compared to all respondents, current smokers also underestimated the health risks of smoking. Most (90%) of all respondents disagreed with the statement, “It is safe to smoke for only a year or two, as long as you quit after that” but a mere 57% of current smokers disagreed. Seventy-eight percent of current smokers and 94% of all respondents believed that smoke from other people’s cigarettes is harmful.

CHAPTER 5

Discussion and Conclusions

Student tobacco use was significantly less frequent among Baylor Undergraduates who completed this survey than the national average for undergraduate universities as shown by nationwide surveys. Though response from smokers may have been proportionally lower than that of nonsmokers, considering the large (16.6%) difference, one can assume the Baylor student population did smoke at a lower rate. This is a very encouraging finding for those aiming to decrease smoking rates at the university. However, we also observed a point of concern: when compared to national data stating that over 80% of smokers started under age 18, we see that the number of students who first tried smoking at or above age 18, 46%, is very high. Since most college students enter their freshman year at 18 years old, it can be inferred that at least some, if not most, of these respondents first tried smoking as Baylor students.

Demographic variations were found both in overall survey response and in smoking frequency. Though more Baylor undergraduates were female than male, the disproportionately high percentage of female participants was not an ideal representation of Baylor's gender distribution. As described in previous studies, males were more likely to smoke, regardless of age. Racial variations also generally followed the national trend. The relationship between religion and smoking, however, has rarely been examined in past research. Our findings suggest a significant correlation between religion, specifically Christian denominations, and decreased smoking rates. This is not

surprising, as religion often discourages risky behaviors like smoking. In addition, the correlation between one's smoking risk and one's belief that his or her religion discourages smoking suggests that religious beliefs were a reason that students choose not to smoke.

The study confirmed that there is a relationship between peer behavior and smoking behavior among Baylor undergraduates. While students felt a low rate of "peer pressure" from their classmates to smoke, they also showed an increased risk of smoking when friends, particularly close friends, smoked or approved of smoking. Smokers were more likely to have best friends who approve of smoking and are more likely to smoke around friends who smoke. Once again, social environment played a role in determining who was tempted to start smoking. The tendency of occasional smokers to smoke more frequently in social settings, such as sports events, parties, dances, raves, or other social events or at friends' houses, suggests that these Baylor undergraduates may be classified as "social smokers." Though data are not directly comparable, this phenomenon is described in "Characteristics of Social Smoking Among College Students," which postulates that social smoking may be a transition period to regular smoking behavior (Waters et al. 2006). As such, this practice should be addressed in any college-specific anti-smoking campaigns.

The data also suggest a relationship between alcohol use and smoking and between stress and smoking. Students were more likely to smoke when they had been drinking, and smokers have visited a drinking establishment more frequently in the last six months, on average. One explanation is that certain people are more inclined to

participate in risky behaviors than others. Alcohol and smoking are both risky behaviors, so those who take part in one are more likely to the other. Alcohol also serves to decrease inhibitions and rational thought, which could lead someone to give less consideration to the risks of smoking when faced with an opportunity to smoke. Higher levels of stress are associated with higher smoking frequencies as well. In particular, many current smokers saw smoking as a way to reduce anxiety or stress. This tendency has been observed in previous studies. College students may rank stress reduction more highly as a reason to smoke because university students tend to have more responsibilities and scholastic challenges than their high school counterparts, on average.

As previously suggested by research on all age groups, smokers tend to see smoking as less harmful and less addictive than nonsmokers. This is supported by the current study as well. This could be a reason these individuals began smoking; it could also be that they attempt to rationalize their decision to smoke by downplaying the long-term consequences.

Suggestions for Application

As an educational institution, Baylor University should have a strong interest in the current and future health of its students and a commitment to promoting positive lifestyle choices. Though Baylor smoking percentages were lower than average, some areas of concern were noted that should be addressed in future anti-smoking endeavors. Whereas most smokers nationwide began smoking under the age of 18, Baylor smokers were most likely to have started smoking after age 18, implying that many who had been

unexposed to cigarettes in high school were presented with the opportunity and chose to try smoking at Baylor. Efforts should be made to continue anti-smoking education beyond high school years and into college.

The college setting and Baylor University in particular have been shown to have unique characteristics in regards to tobacco use. These characteristics, such as the “social smoking” phenomenon, the high stress level of students, and the relationship between religion and smoking frequency, should be considered when choosing methods to discourage smoking. Efforts should be made to educate everyone, particular current smokers, on the true risks of tobacco use.

Smoke-free campus policies have been shown to cause significant favorable changes in smoking, smoking norms, and perceptions of peer tobacco use (Seo et al. 2011). Baylor restricts tobacco use within and near indoor facilities, but does not have a smoke-free campus policy. Over two-thirds of regular smokers at Baylor smoke on campus, and as a result other students are threatened by more than just secondhand smoke. Seeing students smoke on campus may serve to increase students’ perception of how many of their peers are smokers, thereby making them believe that smoking is more “normal”. Because peer influence plays a role in smoking rates, this could increase students’ motivation to also smoke. Baylor should reconsider its smoking policies, taking this into account.

Future Research

Future research and evaluation of strategies and educational programs to influence social behavior of college students is needed. The relationship between smoking and religion should also be examined further. This survey included a wide range of questions about tobacco use and opinions. It was similar in length and content to the National Youth Tobacco Survey, the data of which is analyzed each year by many independent researchers. The report and discussion above aimed to provide an overview of findings, focusing on any areas of interest and comparing, when relevant and possible, to recent national survey findings. In particular, the results and the conclusions above focus on cigarette smoking practices, and non-smoking tobacco use is only briefly addressed. Further analysis of this data in future studies, in whole or part, would be of value to researchers interested in exploring questions more thoroughly. In addition, the survey could be repeated in future years to investigate changes in Baylor tobacco use over time.

APPENDICES

APPENDIX A

Qualtrics Survey: Smoking Behavior Among College Students

Baylor University Certification of Informed Consent

Principal Investigator: Valerie Hoerster, Undergraduate Student, Honors College

This form asks for your consent to participate in behavioral research. For this research you will be asked to complete an online survey, which should take 5-20 minutes. Survey data will be used to complete an Honors Thesis project, a graduation requirement for undergraduate Honors students.

There are no foreseeable risks associated with this survey. You may elect, either now or at any time during the study, to withdraw your participation. You should understand that your participation is completely voluntary. Likewise, individual questions are voluntary and you may elect to skip some questions if you feel uncomfortable answering them.

We aim to keep your identity private from researchers and other participants. There will be no identifying information (names, detailed personal characteristics, etc.) used in the survey, and your anonymity will be maintained throughout the study.

This study meets the American Psychological Association's standards for "Minimal Risk," and poses no major risks or dangers for you as a participant.

The results will be tabulated in the coming months, and will be available for you to review, should you wish to see the outcome. The data we collect will allow us to learn more about smoking behavior and perceptions among Baylor undergraduate students.

Please direct all email inquiries to Valerie Hoerster at Valerie_Hoerster@baylor.edu or call (325) 423-0626. The faculty advisor for this study, Dr. Barb Symm, can be reached at Barbalee_Symm@baylor.edu or (254) 710-4594.

If you have any questions regarding your rights as a participant, or any other aspect of the research as it relates to you as a participant, please contact the Baylor University Committee for Protection of Human Subjects in Research, Dr. Michael Sherr, 1 Bear Place, P. O. Box 97320, Waco, TX 76798. Dr. Sherr may also be reached at (254) 710-4483.

Disclaimer For Use Of The Internet In Collecting Research Data: As you may be aware, electronic communication may be subject to interception, legally by university officials or illegally by another party, while the information is in transit. Therefore, it is possible that your information might be seen by another party, and I cannot control whether that happens. If you are concerned about your data security, print this e-mail, fill out the answers by hand, remove information from headers, etc. that identifies you as the respondent and mail the completed survey to the following address:

Barbalee Symm, PhD
One Bear Place #97313
Waco, TX 76798

By selecting "I Agree" below, I acknowledge that I am at least 18 years old, have read and understood this form, am aware of my rights as a participant, and have agreed to participate in this research.

☐ I Agree

>>

How old are you?

What is your gender?

- ☐ Male
☐ Female

How would you describe yourself? (You can CHOOSE ONE ANSWER, or MORE THAN ONE)

- ☐ American Indian or Alaskan Native
☐ Asian
☐ Black or African American
☐ Hispanic or Latino
☐ Native Hawaiian or Other Pacific Islander
☐ White

What is your religion?

- ☐ Nonreligious
☐ Protestant Christian
☐ Roman Catholic
☐ Evangelical Christian
☐ Jewish
☐ Muslim
☐ Hindu
☐ Buddhist
☐ Other

Have you ever tried smoking cigarettes, even one or two puffs?

- ☐ Yes
☐ No

What is your major field of study? (ex. Biology)

Have you ever smoked cigarettes daily, that is, at least one cigarette every day for 30 days?

- ☐ Yes
- ☐ No

During the past 30 days, on the days you smoked, how many cigarettes did you smoke per day?

- ☐ 2 to 5 cigarettes per day
- ☐ 11 to 20 cigarettes per day
- ☐ More than 20 cigarettes per day

Where do you smoke cigarettes? (You can CHOOSE ONE ANSWER, or MORE THAN ONE)

- ☐ I do not smoke now
- ☐ At home
- ☐ At school
- ☐ At work
- ☐ In the car
- ☐ At friends' houses
- ☐ At sports events, parties, dances, raves, or other social events
- ☐ In public places (restaurants, shopping malls, etc.)
- ☐ Outdoors (sidewalks, parking lots, parks, etc.)

During the past 30 days, on how many days did you smoke cigarettes on school property?

- ☐ 0 days
- ☐ 1 or 2 days
- ☐ 3 to 5 days
- ☐ 6 to 9 days
- ☐ 10 to 19 days
- ☐ 20 to 29 days
- ☐ All 30 days

- ☐ 6 to 9 days
- ☐ 10 to 19 days
- ☐ 20 to 29 days
- ☐ All 30 days

Do you want to stop smoking cigarettes?

- ☐ Yes
- ☐ No

Have you ever tried smoking cigars, cigarillos, little cigars, or tobacco from a pipe, even one or two puffs?

- ☐ Yes
- ☐ No

How old were you when you smoked a cigar, cigarillo, little cigar, or tobacco from a pipe for the first time?

- ☐ 9 years old or younger
- ☐ 10 or 11 years old
- ☐ 12 or 13 years old
- ☐ 14 or 15 years old
- ☐ 16 or 17 years old
- ☐ 18 years or old or older

During the past 30 days, on how many days did you smoke cigars, cigarillos, little cigars, or tobacco from a pipe?

- ☐ 0 days
- ☐ 1 Or 2 days
- ☐ 3 to 5 days
- ☐ 6 to 9 days
- ☐ 10 to 19 days
- ☐ 20 to 29 days
- ☐ All 30 days

During the past 30 days, on how many days did you smoke cigars, cigarillos, little cigars, or tobacco from a pipe on school property?

- ☐ 0 days
- ☐ 1 or 2 days
- ☐ 3 to 5 days
- ☐ 6 to 9 days
- ☐ 10 to 19 days
- ☐ 20 to 29 days
- ☐ All 30 days

Have you ever used chewing tobacco, snuff, or dip?

- ☐ Yes
- ☐ No

How old were you when you used chewing tobacco, snuff, or dip for the first time?

- ☐ 9 years old or younger
- ☐ 10 or 11 years old
- ☐ 12 or 13 years old
- ☐ 14 or 15 years old
- ☐ 16 or 17 years old
- ☐ 18 years or old or older

During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip?

- ☐ 0 days
- ☐ 1 Or 2 days
- ☐ 3 to 5 days
- ☐ 6 to 9 days
- ☐ 10 to 19 days
- ☐ 20 to 29 days
- ☐ All 30 days

During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip on school property?

- ☐ 0 days
- ☐ 1 or 2 days
- ☐ 3 to 5 days
- ☐ 6 to 9 days
- ☐ 10 to 19 days
- ☐ 20 to 29 days
- ☐ All 30 days

If one of your best friends offered you a cigarette, would you smoke it?

- ☐ Very Unlikely
- ☐ Unlikely
- ☐ Somewhat Unlikely
- ☐ Undecided
- ☐ Somewhat Likely
- ☐ Likely
- ☐ Very Likely

During the past 7 days, on how many days were you in the same room with someone who was smoking cigarettes?

- ☐ 0 days
- ☐ 1 or 2 days
- ☐ 3 or 4 days
- ☐ 5 or 6 days
- ☐ All 7 days

Which of these best describes the rules about smoking inside the house where you live? Smoking is...

- ☐ Never allowed inside my home
- ☐ Allowed only at some times or in some places
- ☐ Always allowed inside my home

Does anyone who lives with you now smoke cigarettes?

- ☐ Yes
- ☐ No

Does anyone who lives with you now smoke cigars, cigarillos, little cigars, or tobacco from a pipe?

- ☐ Yes
- ☐ No

Does anyone who lives with you now use chewing tobacco, snuff, or dip?

- ☐ Yes
- ☐ No

How many of your four closest friends smoke cigarettes?

- ☐ None
- ☐ One
- ☐ Two
- ☐ Three
- ☐ Four

How many of your four closest friends smoke cigars, cigarillos, little cigars, or tobacco from a pipe?

- ☐ None
- ☐ One
- ☐ Two
- ☐ Three
- ☐ Four

How many of your four closest friends use chewing tobacco, snuff, or dip?

- ☐ None
- ☐ One
- ☐ Two
- ☐ Three
- ☐ Four

Rate the following statement: I tend to smoke more when I'm with my friends who smoke.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

Does your best friend approve of smoking?

- ☐ Strongly Approves
- ☐ Approves
- ☐ Somewhat Approves
- ☐ Undecided
- ☐ Somewhat Disapproves
- ☐ Disapproves
- ☐ Strongly Disapproves
- ☐ Unknown

In high school, did you ever feel pressured by your friends and classmates to smoke cigarettes?

- ☐ Yes
- ☐ No

As an undergraduate at Baylor, have you ever felt pressured by your friends and classmates to smoke cigarettes?

- ☐ Yes
- ☐ No

Did you feel more or less peer pressure to smoke since entering college?

- ☐ Much Less
- ☐ Less
- ☐ Somewhat Less
- ☐ The Same
- ☐ Somewhat More
- ☐ More
- ☐ Much More

As far as you know, does your religion discourage smoking?

- ☐ Yes
- ☐ No

Rate the following statement: I can't imagine having a drink without smoking.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

Were you under the influence of alcohol when you first tried smoking?

- ☐ Yes
- ☐ No

Rate the following statement: I am more likely to smoke if I have been drinking.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

In the last 6 months, about how many times did you visit a drinking establishment, bar or pub?

What is your average level of stress? (1 is very low, 5 is very high)

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

Rate the following statement: When I'm tense or upset, smoking helps me relax.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

Rate the following statement: I feel more comfortable with a cigarette in my hand.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

Rate the following statement: I am more likely to smoke if I feel anxious, stressed, or uncomfortable.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

In general, do you believe smoking cigarettes is effective at reducing stress?

- ☐ Very Ineffective
- ☐ Ineffective
- ☐ Somewhat Ineffective
- ☐ Neither Effective nor Ineffective
- ☐ Somewhat Effective
- ☐ Effective
- ☐ Very Effective

Do you think that you will be smoking cigarettes 5 years from now?

- ☐ Yes
- ☐ No

Do you think you will smoke a cigarette anytime during the next year?

- ☐ Yes
- ☐ No

Do you think people can get addicted to using tobacco just like they can get addicted to using cocaine or heroin?

- ☐ Yes
- ☐ No

Do you consider yourself addicted to cigarettes?

- ☐ Yes
- ☐ No

Have you ever participated in a program to help you quit using tobacco?

- ☐ Yes
- ☐ No

Rate the following statement: I believe that I could quit smoking anytime if I really wanted to.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

Has any health professional ever advised you to quit smoking?

- ☐ Yes
- ☐ No

Do you believe that you can smoke a few cigarettes without becoming addicted to them?

- ☐ Yes
- ☐ No

Rate the following statement: I will never be addicted to cigarettes.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

Rate the following statement: young people who smoke cigarettes have more friends.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

Rate the following statement: Smoking cigarettes makes young people look cool or fit in.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

Rate the following statement: It is safe to smoke for only a year or two, as long as you quit after that.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

Rate the following statement: Light (low tar) cigarettes are somewhat less risky than regular (full flavor) cigarettes.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

Rate the following statement: Cigarette smoke from other people's cigarettes is harmful to you.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

If someone gives up smoking completely, how long do you think it will take before their chances of developing a disease return to normal?

- ☐ Less than 1 year
- ☐ 1 to 2 years
- ☐ 3 to 5 years
- ☐ 6 to 10 years
- ☐ 11 to 15 years
- ☐ Never

APPENDIX B

Qualtrics Survey: Drawing Entry

Survey | Qualtrics Survey Software

4/11/12 11:30 PM

To enter the drawing for a chance to win a \$20 gift card, please type your email address below.

>>

APPENDIX C

Institutional Review Board Letter of Exemption



BAYLOR
UNIVERSITY

INSTITUTIONAL REVIEW BOARD

One Bear Place #97310 Waco, TX 76798-7310 * (254) 710-3763 * FAX (254) 710-7309 * WEBSITE: www.baylor.edu/research/irb

DATE: February 13, 2012

TO: Valerie Hoerster

FROM: Baylor University Institutional Review Board

STUDY TITLE: [285773-2] Smoking Behavior Among College Students: A Survey

IRB REFERENCE #:

SUBMISSION TYPE: Amendment/Modification

ACTION: DETERMINATION OF EXEMPT STATUS

DECISION DATE: February 13, 2012

REVIEW CATEGORY: Exemption category 1 *[anonymous surveys and questionnaires]*

Thank you for your submission of Amendment/Modification materials for this research study. Baylor University Institutional Review Board has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will put a copy of this correspondence on file in our office.

If you have any questions, please contact David Schlueter at (254) 710-6920 or david_schlueter@baylor.edu. Please include your study title and reference number in all correspondence with this office.

Sincerely,

David W. Schlueter, Ph.D.
Vice Chair, Baylor IRB

APPENDIX D

Email to Students

Subject: **Honors Thesis Help - Win a \$20 Gift Card!**

Dear Fellow Baylor Student,

I'm a senior conducting a survey for my Honors thesis project, a requirement for graduation. Please help me out by participating in this short anonymous questionnaire about smoking. It should take about 5-15 minutes.

At the end of the survey, you can ENTER TO WIN A \$20 GIFT CARD to Wal-Mart, iTunes, or HEB.

Click the following link to start the survey:

https://baylor.qualtrics.com/SE/?SID=SV_e53mD9ofHX2R7H6

Thank you so much for your help!

Sincerely,

Valerie Hoerster
University Scholars 2012

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