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## **TOBACCO USE, CESSATION, AND LOCUS OF CONTROL AMONG COLLEGE STUDENTS**

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# TOBACCO USE, CESSATION, AND LOCUS OF CONTROL AMONG COLLEGE STUDENTS

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TOBACCO USE, CESSATION, AND LOCUS OF CONTROL  
AMONG COLLEGE STUDENTS

By

BERNARD NGWA AMBE, Bachelor of Science

Presented to the Faculty of the Graduate School of  
Stephen F. Austin State University

In Partial Fulfillment  
Of the Requirements

For the Degree of  
Master of Science

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December 2016

TOBACCO USE, CESSATION, AND LOCUS OF CONTROL  
AMONG COLLEGE STUDENTS

By

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## ABSTRACT

The purpose of this study was to (a) determine the locus of control among American college students (b) determine if tobacco use or cessation correlate with any demographic variables to better understand the efficacy of tobacco interventions and help design an intervention most effective in the prominent LOC of college students.

The Global Adult Tobacco Survey (GATS) was modified for the purposes of this study and used to determine demographic factors and tobacco usage status. The modified GATS survey also included the LOC questionnaire which yielded the data. Seventy-four responses were recorded. The mean locus of control scores were 31 (internal), 19 (external), and 9 (powerful others). Significant correlations were observed between tobacco usage on campus and cessation attempts ( $r(74) = .24, p < .05$ ), tobacco usage status and tobacco use on campus ( $r(74) = .33, p < .01$ ), and gender and tobacco usage status ( $r(74) = .38, p < .01$ ).

The survey reported a stronger internal locus among college students. Therefore it is recommended practitioners design and implement interventions effective in ILOC patients. Furthermore, more research must be done into exactly what measures benefit the ILOC patient and how. Surveys that explore the methods of cessation and intervention experienced by students in greater depth also are necessary moving forward.

## ACKNOWLEDGEMENTS

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## Introduction

In psychology, the Locus of Control (LOC) is a measure which uses certain characteristics of an individual's personality traits to determine the extent to which an individual believes they are controlled and influenced by events affecting them (Rotter, 1966). Those who believe environmental and societal factors have the most influence on their circumstances and reaction to those circumstances, are deemed to have an external locus of control. Others who believe their personal thoughts, beliefs, and choices, control the circumstances they encounter in life and the outcome of those circumstances are believed to have an internal locus of control (Marsh & Weary, 1995).

The original locus of control was developed by Julian Rotter in 1966 as part of his social learning theory which asserted that one's personality and behavior cannot be completely independent of their environment (Rotter, 1966). According to Rotter's social learning theory it also is incorrect to view behavior as an automatic response to environmental stimuli (Wallston, Wallston, & DeVellis, 1978). Rotter developed the social learning theory under the preface that individuals do not simply act or react but actually base their choices on anticipated reinforcement outcomes and whether or not they believe those outcomes are circumstantial or within their realm of control (Rotter, 1966). Rotter asserts reinforcement does not serve solely as a post-decision outcome but can be used as a basis of reasoning, influencing individuals to engage in or refrain from a behavior prior to making the choice. Therefore, LOC isn't a classification of internal or

external, but rather a rating of one's status on a continuum which can be traversed in either direction (Schunk & Zimmerman, 2012). For instance, a person who believes their health is dictated by their actions and choices are more internal, while individuals who believes fate, others, or their environment dictate their circumstance, regardless of personal actions, are more external. However, the presence of a strong internal or external locus of control does not mean the absence of another, as psychological situation yields different ratings based on the individual's reinforcement beliefs in a particular situation (Rotter, 1975). Furthermore, individuals receive a rating on every subscale of the LOC measure, regardless of the strength of their internal or external rating. This simply means internal subjects will be more external in certain situations and vice versa. Rotter's locus of control encompasses all four aspects of his social learning theory: Behavioral potential, expectancy, reinforcement value, and psychological situation (Wallston & DeVellis, 1978).

#### LOC Weaknesses and Adaptations

However, the original scale is a generalized measure and will not always remain consistent over every situation (Wallston, 1992). Wallston's claim of possible inconsistencies between LOC and different study populations is supported by Rotter himself. In 1975, Rotter addressed common misconceptions in the application of his LOC scale as he believed researchers were using it independent of his social learning theory rather than as a key part of the theory as a whole (Rotter, 1975). Rotter and Wallston's claims that certain individuals may display internal characteristics in one situation but have characteristics of both (internal and external) in another situation

prompted a modification of LOC. In fact, psychological situation is the fourth aspect of Rotter's social learning theory. Due to these misconceptions there have been a few modifications to Rotter's scale over the years in order to include situational assessments of one's locus of control. The most notable modification of LOC is Levenson's multi-dimensional health LOC scale (MHLC). This scale modifies Rotter's original LOC by including health and psycho-social aspects in addition to Rotter's more psychological approach (Levenson, 1973). Several studies have adopted MHLC as a measure to evaluate health risk behaviors. For example, health practice applications such as innovative capacity, positivity and optimism, and self-assessment of illness prognosis were all measured using MHLC (De las Cuevas, Peñate, Betancort, & Cabrera, 2015; Hoorens & Buunk, 1993; Mueller & Thomas, 2001). In this particular study, researchers used locus of control to determine the reasoning behind health related risk behaviors, specifically tobacco use.

### Tobacco Use Literature Review

The physiological effects of tobacco use is vast and well documented as well as different methods and outcomes of tobacco cessation (Evans et al., 2015). Evans & Sheffer's claim that tobacco usage is the leading cause of preventable chronic disease and therefore death is supported by data released by the Centers for Disease Control in 2014 (U.S. Department of Health & Human Services, 2014). The Surgeon General's 2000 report also cited tobacco use as a precursor to several chronic conditions resulting in fatality in America (U.S. Department of Health & Human Services, 2006). In addition to studies on the prevalence of tobacco use, the U.S. Dept. of Health has explored the

effects of tobacco as it pertains to involuntary second hand smoke (U.S. Dept. of Health, 2006). Kiter, Ucan, Ceylan, and Kilinc (2000) research is one of several studies focusing on the various tobacco usage mediums such as pipes and e cigs. Most government studies focus on prevalence and tobacco use in association with chronic disease, namely cardiovascular disease. However, there also is research on the physiological effects of tobacco use on other organs such as pulmonary function (Shahab, Jarvis, Britton, & West, 2006).

Research concerning LOC as it pertains to tobacco use began in the mid-seventies when research examined smoking intervention modifications (Best & Steffy, 1975). This study sought to examine the efficacy of LOC and two separate tobacco treatment programs at a smoking clinic. While this study used the original LOC as opposed to MHLC the interventions are most likely outdated, however the researchers still concluded intervention success is linked with orientating treatment to the patient's LOC (Best & Steffy, 1975). Best and Steffy's (1975) findings are supported by more recent research, Spielberger, Reheiser, Foreyt, Poston, and Volding's (2004) smokeless tobacco (SLT) study. This research concluded that certain aspects of an individual's conscientiousness directly relate to the persistence of tobacco use. While this study did not use the LOC measure, it utilized a scale rating personality traits, a design similar to LOC. Research was conducted by Penar-Zadarko, Zadarko, Binkowska-Bury, and Januszewicz (2008) to examine the relationship between college students, LOC, and smoking.

### Filling Gaps In the Research

At first glance the research question may seem similar, but the purpose of the present study differs in the aspects; researchers will be examining American college students, only tobacco users, no non-users will be participants, and the data will include other mediums of tobacco use besides cigarettes. Penar-Zadarko et al. (2008) concluded there is no significant difference in LOC between college smokers and non-smokers, however internal control and place of residence turned out to be significant factors in the choice to engage in tobacco use. Yet another study detailed the opinion of 1,010 individuals who were asked if they would support a \$25 increase in their annual health premium in order to participate in a successful cessation program offering a financial incentive paid to the smoker if cessation was successful. The study concluded most participants didn't support any cessation treatment options offered by researchers. Furthermore, financial incentives specifically weren't perceived any differently than the other common treatment options offered by researchers (Park, Mitra, & Asch, 2012). While there are several factors that may have contributed to the participant's responses, the fact remains that most individuals attribute the financial aspect of life to the internal locus of control, the locus current research including Zadarko et al. believe is most instrumental in the persistence of tobacco use. Theoretically if most smokers are internal or have internal persistence forces, yet an intervention offering an internal LOC incentive is rejected, interventions that effectively appeal to the internal LOC are lacking.

As previously stated, current research on tobacco usage and cessation lack validity pertaining to locus of control, tobacco use, and college students and is inconclusive as it pertains to LOC and predicting cessation success (Stuart, Borland, & McMurray, 1994). This is not a criticism on the findings or methodology of current tobacco research, but an evaluation of the studies' research questions and findings (Liu et al., 2010). Even more recent research such as Liu et al. (2010) meta-analysis of tobacco studies relating to health risk behaviors and their correlation to locus of control and other behavioral contributors show that a majority of such research available is on a wide scale, as the populations used span several age groups and demographics worldwide. When compared to the essence of Rotter's theory, the four aspects of social learning, current studies lack validity on college tobacco usage factors here in America. This is because the environmental factors are different and often exclude aspects of his theory by electing to focus solely on reinforcement outcomes (Evans, Sheffer et al., 2015). Research also suggests that although tobacco dependency is disproportionately prevalent in lower socio-economic populations. Identification factors such as cognitive and behavioral interventions are related to locus of control and warrant new approaches (Sheffer, et al., 2012). Therefore, the purpose of this study is to determine the predominant locus of control in American college students using tobacco. The present study seeks to address two research questions. First, what is the locus of control ratings for American college students. The second, seeks to determine is there correlations among locus of control, tobacco cessation and other demographic variables among said college students in order to better understand and develop intervention techniques. It was hypothesized that

college students are motivated by intrinsic reinforcement factors and therefore have more of an internal locus of control. Furthermore, respondents who reported a cessation attempt will indicate measures designed to be effective in the external locus of control.

## METHOD

### Participants & Procedure

Study participants included male and female tobacco users ranging in classification from undergraduate to graduate level college students enrolled in courses at an institution in East Texas. IRB approval was obtained prior to participant recruitment. The study's participants were recruited through on campus flyers, department announcements, and walk-up dispersed at various on-campus smoking areas. Participant references and social media also were a means of recruitment in this study. The study was open to all tobacco users including those contemplating, attempting, or having successfully or unsuccessfully attempted cessation. Tobacco users included smokers, chewing tobacco, cigars, cigarillos, and any means or method of tobacco use.

After tobacco users on campus are contacted, they were instructed to log on to the web address disclosed on the flyer and complete the survey. Participants completed an informed consent (See Appendix A) prior to completion of the surveys. include agreement to an informed consent before submission. The survey was constructed of key questions from the Centers for Disease Control and World Health Organization's joint Global Adult Tobacco Survey modified to identify the research questions of this study

(CDC & WHO, 2010). The survey also included the locus of control questionnaire which determines whether participants had extrinsic or intrinsic reinforcement habits.

Upon completion of the surveys, researchers compiled the data and performed a statistical analysis to group participants into internal and external locusts of control (IV) based on their survey responses. Sub-groups determined from survey responses determined whether participants were invited to complete a differentiation of self inventory to ascertain if there was a correlation between certain demographic variables, locus of control, and tobacco use.

### Instruments and Measures

All instruments and measures used to assess student demographics and tobacco usage habits of participants as far as frequency, type of tobacco, cessation attempts, and locus of control included:

*Qualtrics Electronic Survey.* A website participants will logged onto to complete and submit surveys and informed consents (Snow & Mann, 2013).

*Demographic Questionnaire.* Basic demographic information was obtained in tobacco usage survey questionnaire. See Appendix B.

*Modified Global Adult Tobacco Survey.* Originally compiled by the CDC and WHO to determine the prevalence and mode of tobacco use in American adults. This survey was



modified by researchers to specifically identify tobacco usage habits as it pertains to college students. See Appendix B.

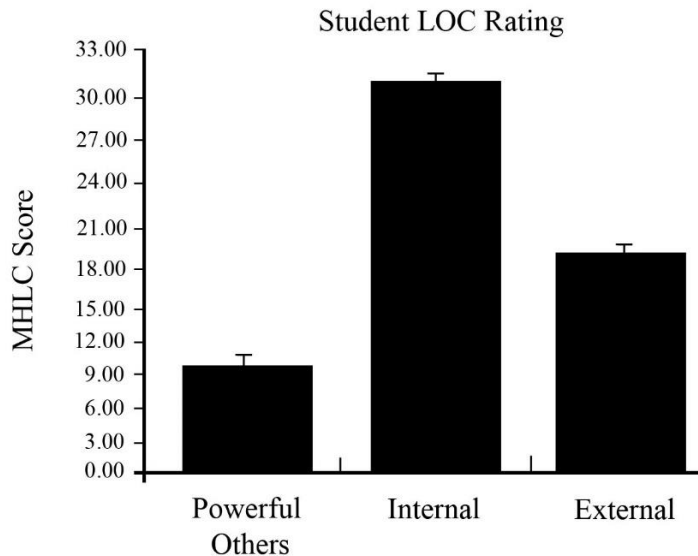
*Locus of Control Survey.* Originally developed by Julian Rotter in 1966, the survey was used to determine whether or not participant had an internal or external locus of control. This measure has been used in several studies since the early seventies to determine the reinforcement beliefs of participants. This is a key variable in grouping participants as part of the study's research question is to determine the predominant locus of control among college smokers. See Appendix B.

### Statistical Analyses

The study utilized a survey to determine if there was a correlation between tobacco use and variables such as internal and external locus of control and demographic information. A qualitative data analysis of the survey results was done in order to stratify participants by expectancy and behavioral potential as it relates to demographic variables such as age, major, and gender. Once participant's mean LOC scores were determined using SPSS, frequency analyses and correlations were ran to determine the variance in the means between groups.

## Results

A total of 88 survey responses were received. Of those respondents, 14 were discarded due to not agreeing to the informed consent or identifying themselves as a Kinesiology or Health Science major (this will be further discussed in limitations). The data analyzed in this study is comprised of data received from 74 students (32 male, 42 female).



As shown above in Figure 1, a mean of 31 on the internal LOC (ILOC) subscale, compared to 19 on the external LOC (ELOC) subscale was reported. This is indicative of college tobacco users in this study having a more internal LOC, thus supporting the research hypothesis. It is important to note LOC is a rating on a continuum and may vary according to psychological situation across different health related variables. Participants also reported a rating of about 10 on the “powerful others” subscale. The powerful others subscale rates the degree to which an individual believes their health status is influenced

by perceived gatekeepers such as physicians, nurses, health professionals, administrators, and policy makers, etc.

Seventy-eight percent (n = 69) of the respondents were between the ages of 18 and 24. Four participants were between the ages of 25 and 29, while one was 35 or older. The majority of respondents reported they were seniors or living off campus, with those variables accounting for 36% (n = 32) and 60% (n = 53) respectively. Twenty-seven percent (n = 24) of the respondents indicated they were first generation college students, while 33% (n = 29) reported their parents had no college degree or some college, or no degree.

#### LOC Correlations

There was no correlation observed between tobacco usage, cessation attempts, and family income or highest level of education. However, a positive correlation between tobacco usage on campus and a reported quit attempt was observed  $r(74) = .24, p < .05$ . There also is a positive correlation between reported tobacco usage status and tobacco use on campus  $r(74) = .33, p < .01$ . Gender and tobacco usage status also was correlated among participants  $r(74) = .38, p < .01$ . As shown in Tables 4 and 5, there were significant correlations found between both the internal and external LOC and the powerful others scale, especially as it pertains to personal responsibility for one's health and the belief powerful others play a large role in recovery and health. These variables positively correlated at the .01 level. Table 6 shows significant correlations between the

internal and external LOC, this is to be expected as individuals may have both intrinsic and extrinsic reinforcement beliefs and report a rating on each scale.

### Limitations

Although the results of the study support the research hypothesis, there are a few confounding variables worth considering. For instance, 88 responses were received but only 74 were used for statistical analysis. This was due to the belief Kinesiology and Health Science majors are generally healthier than students with other majors such as business or agriculture. Therefore, their presence in the study could potentially skew the data and results. Psychology majors also were excluded, as they could possibly identify the locus of control measure within the survey and adjust their responses based on the locus they identify with. This could be problematic because the MHLC has subscales distinctly different from the Rotter's LOC which they most likely familiar with as psychology students. Naturally the reporting of the study's results also were effected by the excluded data as far as participation percentages and frequency analysis calculations.

### Confounding Variables

A potential weakness in this study lies in the depth to which the survey explored cessation attempts. The research question asks if there was correlation between LOC and student demographic variables. The survey addressed this inquiry, however, it would be useful to determine more information about the means of intervention students who reported a quit attempt were exposed to. This would give researchers better insight into

the instruments used in interventions on college tobacco users in order to evaluate their efficacy and develop implications for health professionals.

Another limitation to consider is the institution's cooperation with research efforts. Some departments were sluggish or unresponsive during recruitment which took away potential participants and ultimately effected the size of the study's population sample. Some survey questions were pulled from Global Adult Tobacco Survey (GATS) in order to maintain validity and utilize a reliable tobacco usage measure. However modeling the survey after the GATS inherently excludes questions that would further explore the topic of the interventions college students have been exposed to.

## Discussion

College students in the study were identified as having a strong ILOC, this is supported with other research identifying tobacco users as predominantly internal not only in the college environment but in the workplace (Penar-Zadarko, Zadarko, et al., 2008; Schmitz & Neumann et al., 2000; Sheffer, MacKillop, et al., 2012). The consistency of tobacco users across several studies such as the above mentioned and having LOC identified as a predictor of cessation outcomes within those studies implies health professionals should consider designing interventions that are effective in influencing patients who identify as internal. In fact, one could argue the tobacco interventions currently in place are incorrect as it pertains to LOC (Marks, 1998). For example, several health behavior interventions involve educating the patient about

potential risks and rewards associated with cessation. A person who has an ILOC might not respond as favorably to classes, flyers, and advertisements as well as a person with ELOC. Internal individuals value self-paced, practical applications as opposed to education materials (Marks, 1998; Luszczynska & Schwarzer, 2005). Those instruments are designed to increase awareness and education on a given health variable, which is effective in the ELOC, however research suggests constructs such as those found in the trans-theoretical model (TTM) and health belief model (HMB) may be more promising for ILOC patients (Luszczynska & Schwarzer, 2005). Transtheoretical model constructs fit this framework of successful ILOC interventions as they advance the individual from pre-contemplation, into contemplation, preparation, action, and ultimately maintenance. This model is in line with the framework of Rotter's SLT because the constructs demand interventions that advance the patient through each stage on their own volition, based off the expectancy and reinforcement value of the individual (1966). For instance, a person will not enter contemplation of the behavior change without first valuing it's reinforcement outcome. Policy change or another impetus may force preparation, but ultimately the action and maintenance stages of TTM will be catalyzed by that individual's expectancy of successfully changing their behavior (Prochaska & DiClemente, 1983; Schunk & Zimmerman, 2012). It is conceivable that an ILOC patient is more heavily influenced by their expectancy because of how much stock they put in their personal choices and abilities. Therefore a low expectancy in an ILOC patient could be devastating to their prospects of successfully changing a behavior. Marks (1998) goes a step further, stating that practitioners designing and implementing interventions for

ELOC are heavily influenced by social factors that may push practitioners into incorrectly labeling their patients as external. Individuals with ELOC are more susceptible to stress, which may contribute to tobacco use, however practitioners making this assumption may automatically be skewed towards design interventions geared toward the external locus (Schmitz, Neumann, & Opperman, 2000). However these interventions are unlikely to be effective due to the reinforcement value construct of Rotter's SLT. because an individual with an ILOC doesn't seek or value the same reinforcement as a peer with ELOC, regardless of expectancy or beliefs (Rotter, 1975). If patients are incorrectly diagnosed as having ELOC, then prescribed an ineffective intervention, (in terms of matching LOC to intervention) especially when students have been identified as primarily internal, this can account for a potentially significant role in the perceived failures of tobacco interventions.

The data also revealed another interesting facet of LOC in college students. The powerful others subscale is a rating of the degree to which participants believe figures such as doctors, employers, and administrators have influence on their life. Figure 1 shows as a means students weighed much heavier on ILOC (31) than external (19). However, the rating of powerful others scale does not reflect this level of difference in LOC as students also rated ~10, a rating that should be much lower considering the strength of the ILOC measured. Patients with internal LOC who also have a significant powerful others rating are believed to be heavily influenced by policy and environmental factors (Moskowitz, Lin, & Hudes, 2000). This makes sense, as administrators and employers often create the policies in effect at the places students use tobacco.

Moskowitz (2000) explains “Policies that restrict worksite smoking behavior by reducing the opportunity to smoke, decreasing the pressures to smoke, and by increasing social support for cessation”. In addition they evaluated the impact of workplace smoking ordinances on tobacco cessation and found that companies located in cities with stricter smoking ordinances reported 26.4% of smokers quit within six months of the study and were still abstinent at the time of the follow up, compared to just 19.1% living in communities with no ordinance. The researchers also found there was a correlation between the strength and enforcement of anti-smoking policies and the effects of those policies on smoking behavior (Maskowitz et al., 2000). However, it is important to note that the researchers also stated these results can only be attained in communities in which the people are aware of the existence of anti-tobacco laws and policies.

Another study exploring the effects of policy on smoking is Farkas, Gilpin, Distefan, and Pierce’s 1999 research. The authors reported an increase in cessation and a decrease in tobacco usage among those who still smoked when there is a high sense of perceived organizational support of anti-tobacco policies, increasing compliance Aube et al. (2007) also concluded perceived organizational support is positively and significantly correlated with cessation among the individuals in the organization Farkas et al.’s (1990) study also states that household restrictions on smoking are also effective in increasing cessation by reducing the opportunities one has to use tobacco. This is important because when dealing with patients who have ILOC, their belief that they are able to achieve the behavior change is important in determining whether or not they will attempt cessation due to so (Rotter, 1975). Furthermore, stating those who attempted to quit for a week or



more are more likely to achieve cessation within the next 18 months than those who didn't. While these some of the studies mentioned were conducted in the workplace, their results still have validity in the current study.

Table 1

Variable	Correlated Survey Variables		
	Pearson Correlation	Significance	N
Have you attempted to quit?	.240*	.04	74
Do you use tobacco on campus?	.240*	.04	74

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

Table 2

Variable	Correlated Survey Variables		
	Pearson Correlation	Significance	N
What is your tobacco usage status?	.329**	.004	74
Do you use tobacco on campus?	.329**	.004	74

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

As shown in Tables 1 and 2, the survey reported a positive, although weak correlation between tobacco usage status, cessation attempts, and on-campus tobacco use. If the location of tobacco use can account for the variance in usage and cessation, research shows the policies in place on campus will have an effect on students' tobacco

usage (Aube et al, 2007; Farkas et al., 1999). There also was a correlation between gender and tobacco usage status. As shown in Appendix C Table 3, this correlation was found to be significant at the .01 level. This suggests female students should receive special consideration when designing tobacco interventions for the student population. This could be explained by the fact women metabolize nicotine faster than males and therefore use more tobacco in order to satisfy those cravings (Smith et al, 2016).

### Implications for Practice

Given the findings of this study there are steps that must be taken to further strengthen the efficacy of tobacco interventions implemented by health professionals. First, in order to increase research validity a survey must be designed that inquires the specific type and method of intervention experienced by students who used a healthcare provider when attempting to quit. Once such a measure is developed and accepted, it will be easier to identify specifically how students who use tobacco are approached by practitioners. Maslach's Burnout Inventory is a measure that may be able to shed light on the stressors affecting students and whether or not stress plays a role in tobacco use among students with ILOC.

It also is of utmost importance to act upon the research showing the substantial effect policy and environmental factors have on tobacco usage and cessation behaviors. Another important consideration for researchers and practitioners moving forward is the efficacy of total bans on tobacco cessation. Research shows that organizations with anti-

tobacco policies sometimes do not mind if employees use tobacco outside of the building or on break as long as it is not within the workplace (Farkas et al., 1999). This supports the notion total bans are more effective in reducing tobacco use and may be more helpful in increasing cessation. Farkas et al. also assert compliance with anti-tobacco policies can be increased by simply making individuals aware of the laws, fines, and ordinances related to tobacco use in communities (or campuses) where there is a ban.

It is recommended in order to effectively combat tobacco use among college students, these steps must be taken so that interventions are suited to those requiring the intervention. In addition to the recommendations above, behavioral models directly addressing the self-efficacy and expectancy of individuals attempting cessation are also vital to the success of college students' tobacco cessation efforts.

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## APPENDIX A



Dept. of Kinesiology & Health Science | Stephen F. Austin State University

**INFORMED CONSENT AND RELEASE FORM FOR Tobacco Usage Study**, the undersigned, do hereby acknowledge:

- My consent to participate in an anonymous survey inquiring basic demographic, tobacco usage, and education information
- My consent to have the survey data analyzed by researchers of this study;
- My obligation to immediately inform the researcher of any objection to the collection, use or publication of the data obtained in this study;
- My understanding that only the principal researchers will have access to consent forms that indicate my identity. There will be no personally identifying information such as name on the questionnaire. In the event of presentations or publications of this research, no personally identifying information will be disclosed.
- My understanding that I may ask any questions or request further explanation or information about the procedures and purpose of this research at any time before, during, and after the test;
- My understanding questions about this research study should be directed to the primary investigators: Dr. DawnElla Rust, Professor in Health Science, drust@sfasu.edu or 936-468-1465; Dr. Mark Faries, Associate Professor in Kinesiology, Fariesmd@sfasu.edu or 936-468-1817; Dr. Christina Sinclair, Assistant Professor in Kinesiology, sinclaircd1@sfasu.edu or 936-468-1721; or Dr. Nina Ellis-Hervey, Associate Professor in Psychology, ellishernm@sfasu.edu or 936.468.1306. If you have any questions about your rights as a participant in this study or any concerns or complaints, please contact the Stephen F. Austin State University Institutional Review Board Chair, Dr. Pauline Sampson at 936-468-5496. Any other concerns with this research may be directed to the Office of Research and Sponsored Programs at 936-468-6606
- That I have read, understood, and completed the informed consent and researchers have answered all inquiries about this study to my satisfaction;
- That I hereby release, Stephen F. Austin State University, its agents, officers and employees from any liability with respect to any damage or injury (including death) that may occur during the administration of the survey except where damage or injury is caused by the negligence of, Stephen F. Austin State University or its agents, officers and employees acting within the scope of their duties.

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Signature

---

Date

## Appendix B

# Tobacco Usage Survey

1. **General Demographic Questions (circle one)**

2. **Age:** 18-24 25-29 30-35 35 or older

3. **Ethnicity:** White / Black or African American / Hispanic or Latino / Asian / American Indian or Alaskan Native / Native Hawaiian or Other Pacific Islander

4. **Gender:** M F

5. **Family education history:** Are you a first generation college student? Y N

6. **Classification:** Freshman Sophomore Junior Senior Graduate

7. **Major:**

Agribusiness	Agriculture	General Business
Agricultural Development	Agricultural Machinery	Geographic Information Systems
Animal Science	Anthropology	Geography
Art	Art History	Geology
Biochemistry	Biology	Health Science
Biotechnology	Business Communication	History
Chemistry	Child and Family Development	Horticulture
Communication Studies	Comm. Sciences & Disorders	Hospitality Administration
Computer Information Sys	Computer Science	Human Sciences
Criminal Justice	Dance	Information Technology
Deaf and Hard of Hearing	Economics	Interior Design
Engineering	English	Interior Merchandising
Equestrian	Environmental Science	International Business
Family & Consumer Sciences	Fashion Merchandising	Journalism
Finance	Food, Nutrition and Dietetics	Kinesiology
Forest Management	Forest Recreation Management	Latin American Studies

Forest Wildlife Mgmt	Forestry	Law Enforcement
French	Management	Marketing
Military Science	Music	Nursing
Orientation & Mobility	Philosophy	Physics
Piano Pedagogy	Plant and Soil Science	Political Science
Poultry Science	Pre-Veterinary Medicine	Psychology
Public Administration	Radio-Television	Recreation Management
Rehabilitation Services	Social Work	Sociology
Spanish	Spatial Science	Special Education
Surveying	Teacher Certification	Teacher Education EC-6
Teacher Education 4-8	Theatre	Turfgrass Management
Urban Forestry	Wildlife	Undecided

8. **Living Arrangements:** Dorm / Off Campus House or Apartment / Permanent Residence

9. **Campus Involvement (circle all that apply):**

School sponsored organization      Spiritual/Religious/Church affiliated organization

Community service organization      Fraternity or Sorority

Non-profit/philanthropic organization      Academic/Honors Society

FOR EACH QUESTION CIRCLE YES, NO, OR THE MOST APPLICABLE OPTION WHEN PROMPTED

10. **What is your tobacco usage status?** Daily / Occasional / Occasional, Formerly daily / Occasional,

Never daily

11. **What is your preferred form of tobacco use?**

Cigarette / Cigar / Cigarillo / Pipe / Chewing tobacco / E cig

12. **What kind of cigarette do you prefer?** Manufactured      I roll my own
13. **Have you smoked 100 cigarettes this year?** (5 packs) Y   N
14. **Were your parents smokers?** Y   N
15. **When was your first exposure to tobacco?** Under 12   13-17   18-23   24-29   30-35  
36+
16. **When did you start using tobacco?** Under 12   13-17   18-23   24-29   30-35   36+
17. **Do you smoke on campus?** Y   N
18. **Do you smoke at work?** Y   N
- 19a. **Have you attempted to quit?** Y   N

**If you answered “Y” to 19a:**

- 19b. **Was your attempt successful?** Y   N
- 19c. **When was the last time you used tobacco?** Y   N
- 19d. **Since attempting to quit I’ve used tobacco** Once or twice / Occasionally / Have not  
used tobacco
20. **Did you receive assistance from a healthcare provider or advocacy group?** Y   N

FOR EACH STATEMENT, INDICATE THE DEGREE TO WHICH YOU AGREE

1-      STRONGLY DISAGREE, 2- DISAGREE, 3- NEUTRAL, 4- AGREE, 5- STRONGLY AGREE

21. **I notice anti-tobacco ads and campaigns every week**      1 2 3 4 5
22. **Most anti-tobacco ads I notice are in print (flyer, newspaper, magazines)**   1 2 3  
4 5
23. **Most anti-tobacco ads I notice are via media (radio, television, etc.)** 1 2 3 4 5

**24. HEALTH QUESTIONNAIRE**

EACH ITEM BELOW IS A BELIEF STATEMENT ABOUT YOUR MEDICAL CONDITION WITH WHICH YOU MAY AGREE OR DISAGREE. BESIDE EACH STATEMENT IS A SCALE WHICH RANGES FROM STRONGLY DISAGREE (1) TO STRONGLY AGREE (6). CIRCLE THE NUMBER THAT REPRESENTS THE EXTENT TO WHICH YOU AGREE OR DISAGREE WITH THAT STATEMENT. PLEASE MAKE SURE THAT

YOU ANSWER EVERY ITEM AND THAT YOU CIRCLE ONLY ONE NUMBER PER ITEM. THIS IS A MEASURE OF YOUR PERSONAL BELIEFS; OBVIOUSLY, THERE ARE NO RIGHT OR WRONG ANSWERS.

1-Strongly Disagree, 2- Moderately Disagree, 3- Slightly Disagree, 4- Slightly Agree, 5- Moderately Agree, 6- Strongly Agree

1. **If I become sick I have the power to make myself well again.** 1 2 3 4 5 6
2. **Often I feel that no matter what I do, if I am going to get sick, I will get sick.** 1 2 3 4 5 6
3. **If I see an excellent doctor regularly, I am less likely to have health problems.** 1 2 3 4 5 6
4. **It seems that my health is greatly influenced by random happenings.** 1 2 3 4 5 6
5. **I can only maintain my health by consulting health professionals.** 1 2 3 4 5 6
6. **I am directly responsible for my health.** 1 2 3 4 5 6
7. **Other people play a big part in whether I stay healthy or become sick.** 1 2 3 4 5 6
8. **Whatever goes wrong with my health is my own fault.** 1 2 3 4 5 6
9. **When I am sick, I just have to let nature run its course.** 1 2 3 4 5 6
10. **Health professionals keep me healthy.** 1 2 3 4 5 6
11. **When I stay healthy, I'm just plain lucky.** 1 2 3 4 5 6
12. **My physical well0being depends on how well I take care of myself.** 1 2 3 4 5 6
13. **When I feel ill, I know it is because I have not been taking care of myself.** 1 2 3 4 5 6
14. **The type of care I receive from other people is what is responsible for how well I recover.** 1 2 3 4 5 6
15. **Even when I take care of myself, it's easy to get sick.** 1 2 3 4 5 6
16. **When I become ill, it's a matter of fate.** 1 2 3 4 5 6
17. **I can pretty much stay healthy by taking good care of myself.** 1 2 3 4 5 6

18. **Following doctor's orders to the letter is the best way for me to stay healthy.** 1  
2 3 4 5 6

## Appendix C



Figure 1

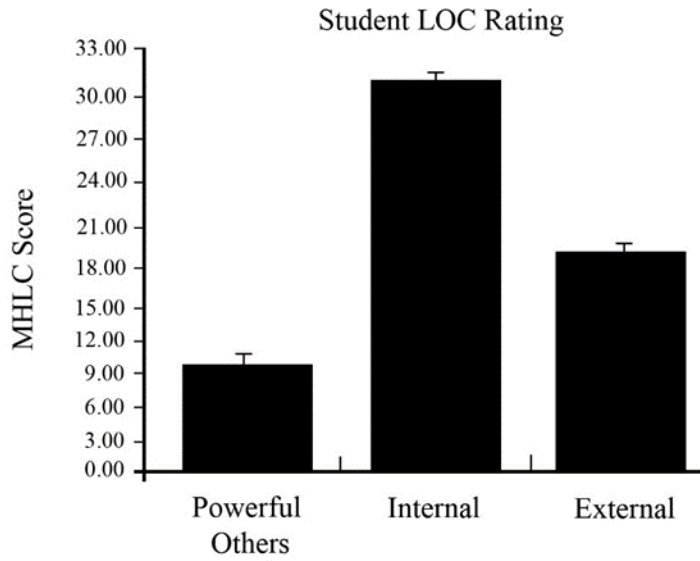


Table 1

Correlated Survey Variables			
Variable	Pearson Correlation	Significance	N
Have you attempted to quit?	.240*	.04	74
Do you use tobacco on campus?	.240*	.04	74

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

Table 2

Correlated Survey Variables			
Variable	Pearson Correlation	Significance	N
What is your tobacco usage status?	.329**	.004	74
Do you use tobacco on campus?	.329**	.004	74

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

Table 3

Correlated Survey Variables			
Variable	Pearson Correlation	Significance	N
What is your gender?	.381**	.001	74
What is your tobacco usage status?	.381**	.001	74

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

Table 4

*Internal and Powerful Others Scale Variable Correlations*

LOC Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Power to make myself well again	-											
2. Responsible for my own health	.05	-										
3. Bad health my fault	.05	1.00**	-									
4. Well-being dependent on taking care of myself	.05	1.00**	1.00**	-								
5. Feel ill because I do not take care of myself	.25*	.37**	.42**	.57**	-							
6. I can stay healthy by taking good care of myself	.33**	.59**	.41**	.67**	.56**	-						
7. Doctors visits make bad health less likely	.42**	.15	.16	.16	.27*	.19	-					
8. I can only maintain health by consulting professionals	.05	1.00**	1.00**	1.00**	.28*	.19	.16	-				
9. Other people play a big part in whether I'm healthy or sick	.05	1.00**	1.00**	1.00**	.24	.27**	.16	1.00**	-			
10. Health professionals keep me healthy	.29	.05	.06	.06	.53**	.33**	.20	.06	.06	-		
11. My recovery is dependent on the care I receive from other people.	.05	1.00**	1.00**	1.00**	.51**	.22**	.16	1.00**	1.00*	.06	-	
12. Following doctor's orders is how I stay healthy	.15	.46**	.21	.56**	.51**	.55**	.17	.41**	.32*	.49**	.40**	-

\*. Correlation is significant at the 0.05 level (2-tailed) \*\*. Correlation is significant at the 0.01 level (2-tailed).

Table 5

*External and Powerful Others Variable Correlations*

LOC Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. No matter what I do I am going to get sick	-											
2. It seems my health is greatly influenced by random happenings	.51**	-										
3. When I am sick I just have to let nature run it's course	-.10	-.20	-									
4. When I stay healthy, I am lucky	-.10	-.20	1.00**	-								
5. Even when I take care of myself it is easy to get sick	.34**	.26*	.35**	.51**	-							
6. When I become ill it's a matter of fate	.33**	.40**	.48**	.60**	.52**	-						
7. Seeing a good doctor regularly will make me less likely to have health problems	.28*	.28*	.16	.16	.42**	.21	-					
8. I can only maintain my health by consulting professionals	-.10	-.20	1.00**	1.00**	.51**	.32*	.16	-				
9. Other people play a big part in whether I stay healthy	-.10	.12	1.00**	1.00**	.43**	.50**	.16	1.00**	-			
10. Health professionals keep me healthy	.29*	.46**	.06	.06	.39**	.52**	.20	.06	.06	-		
11. My recovery is dependent on the type of care I receive	.10	-.20	1.00**	1.00**	.55**	.38**	.16	1.00**	1.00**	.06	-	
12. Following doctor's orders is the best way for me to stay healthy	.09	.15	.20	.32	.26*	.46**	.17	.41**	.32*	.46**	.40**	-

\*. Correlation is significant at the 0.05 level (2-tailed) \*\*. Correlation is significant at the 0.01 level (2-tailed)

Table 6

*Internal and External Scale Correlations*

LOC Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. I have power to make myself well again	-											
1. Responsible for my own health	.05	-										
2. Bad health my fault	.05	1.00**	-									
3. Well-being dependent on taking care of myself	.05	1.00**	1.00**	-								
4. Feel ill because I do not take care of myself	.25*	.37**	.42**	.57**	-							
5. I can stay healthy by taking good care of myself	.33**	.59**	.41**	.67**	.56**	-						
6. No matter what I do I am going to get sick	.34**	-.20	-.20	-.20	.34**	.13	-					
7. It seems my health is greatly influenced by random happenings	.43**	-.20	-.20	-.20	.28**	.16	.51**	-				
8. When I am sick I just have to let nature run it's course	.05	1.00**	1.00**	1.00**	.37**	.53**	-.20	.20	-			
9. When I stay healthy, I am lucky	.05	1.00**	1.00**	1.00**	.36**	.22	-.20	-.20	1.00*	-		
10. Even when I take care of myself it is easy to get sick	.11	.25*	.32*	.16	.35**	.31*	.34**	.26*	.35**	.51**	-	
11. When I become ill it's a matter of fate	.14	.50**	.40**	.37**	.41**	.47**	.33**	.40**	.48**	.60**	.52**	-

\*. Correlation is significant at the 0.05 level (2-tailed) \*\*. Correlation is significant at the 0.01 level (2-tailed).

## Vita

After graduating from Tomball High School, Tomball, Texas, in 2008, Bernard Ambe attended Blinn Jr. College and eventually transferred to Stephen F. Austin State University in 2012. Bernard earned his Bachelors of Science in Kinesiology with an emphasis in Human Performance May 2014. In fall of 2014, he was admitted into the Graduate School. He expects to receive his Masters of Science in Kinesiology in December of 2016.

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