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South African College Students' Attitudes Regarding Smoke-Free Policies in Public Spaces, Private Spaces, and on Campus

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An abstract of
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Abstract

South African College Students' Attitudes Regarding Smoke-Free Policies in Public Spaces, Private Spaces, and on Campus

By Shana K. Narula

Tobacco control policies have been increasingly implemented globally. Thus, we examined smoking behavior and attitudes and implementation of private smoking bans among college students in South Africa. An online survey was completed by 130 University of Cape Town students; 4 focus groups among 27 college smokers were also conducted. Among the survey sample, 46.6% were female, 53.4% were White, and 41.5% smoked in the past 30 days (i.e., current smokers). Significant predictors of current smoking included being male (OR=0.34, p=.03), more friends that smoke (OR=1.34, p=.03), more frequently consuming alcohol in the past 30 days (OR=1.09, p=.02), and more days of marijuana use (OR=1.12, p=.15). Focus group data indicated that social factors (i.e., peer or familial) were major influences for smoking initiation and maintenance. While participants reported attempting to quit, common triggers for relapse and barriers to quit included stress, social environments, alcohol consumption, varying home restrictions, and the lack of policy enforcement. Survey data indicated that 6.8% disapproved of a public ban, 4.9% disapproved of smoke-free workplaces, 17.5% disapproved of restaurant bans, and 37.9% disapproved of smoke-free bars. Less negative attitudes toward smoking were associated with being younger (Coefficient=-0.67, p=.03), more days of smoking in the past 30 days (Coefficient=0.70, p<.001), and having more friends that smoke (Coefficient=1.40, p=.02). In terms of campus policies, 20.4% disapproved of the current smoking policies (i.e., no smoking in university buildings), and 39.8% disapproved of a complete campus-wide ban. While 10.7% stated less likelihood of attending the college if it had a complete ban, 13.6% reported being more likely to attend. Focus group data indicated that enforcement of public and campus policies was a barrier to maintaining smoke-free policies and reducing smoking in Cape Town. In regard to private restrictions, 73.8% had complete car bans; 67.0% had complete home bans. Despite high levels of support for smoke-free policies, smoking is highly prevalent among South African college students. Future tobacco control efforts must focus on the enforcement of existing public and campus policies in South Africa.

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This thesis is dedicated to Patricia Sterner. We lost her this past year to her battle with cancer. I am determined to dedicate my career to fighting against tobacco and to prevent cancer around the world. We will always love and miss you Pat.

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Introduction

Global Tobacco Problem

According to the World Health Organization, nearly 1.3 billion people currently smoke worldwide[1] and is fourth in total disease burden in the world[1]. Every year tobacco kills over 5 million people in the world, and this number is predicted to grow.[2] Cigarette consumption has plateaued in the developed world; however, it has increased significantly in the developing world. In fact, within the next 25 years, cigarette consumption will increase by 60% in middle-income countries and 100% in low-income countries.[1] If current trends continue, more than 8 million people worldwide will be killed by 2030 as a result of tobacco use. Of these premature deaths, 80% will occur in low and middle-income countries.[2] Thus, in the 21st century, tobacco is predicted to cause one billion deaths, mainly in developing countries.[1] The quick increase in the consumption and spread of tobacco around the globe shows that it is a major global health concern.

Not only does tobacco cause great numbers of morbidity and mortality around the world, it also creates high costs for health care systems. Treating tobacco-related illness is very high in cost for governments and the individuals and families who are dealing with the health consequences of being a tobacco consumer. The total economic cost attributable to tobacco in South Africa is $867.54 million.[3]

The health effects for consumers and their families can be intensified by poverty.[1] Poor families are more likely to have one or more smokers compared to their rich counterparts. Often, a large portion of the families' total expenses is allocated for the harmful products, such as tobacco.[1] Not only are poor individuals are particularly vulnerable to the effects of tobacco use not only for immediate consequences of allocating funds to the habit of smoking, but the long-

term health risks associated with smoking cause a disproportionate financial burden on poorer families.[1] By curbing the tobacco pandemic now, developing nations can significantly reduce the number of tobacco-related premature deaths, disease, associated costs, and uplift countries and suffering families out of poverty.

Exposure to second-hand tobacco smoke causes death, disease, and disability; there is no safe level. It kills up to 600,000 people every year.[2] About one third of adults are exposed to second-hand smoke on a regular basis around the world. Second-hand tobacco smoke is emitted from the burning end of the cigarette (side-stream smoke) or from other tobacco products. It has similar components to inhaled or mainstream smoke. More importantly, it is three to four times more toxic per gram of particulate matter than mainstream tobacco smoke.[2] Moreover, the toxicity of side-stream smoke is higher than the sum of the toxicities of its ingredients.[2] There are more than 4,000 chemicals that have been identified in tobacco smoke, of which 250 are known to be harmful and more than 50 are known to cause cancer.[2] Some examples of the carcinogenic chemicals in secondhand smoke include formaldehyde, benzene, vinyl chloride, arsenic, ammonia, and hydrogen cyanide.[4] For children that are exposed to secondhand smoke, they have an increased risk for sudden infant death syndrome (SIDS). Thus, smoking by parents can cause respiratory problems and slow lung growth among their children.[4] Nonsmokers who are exposed to secondhand smoke in the home or at work have a 25-20 percent increased risk of developing heart disease and a 20-30 percent increased risk of developing lung cancer.[4] The pollution from tobacco smoke can reach levels that are significantly greater than levels of other environmental toxins such as particles emitted from an automobile exhaust. Studies have shown that the levels of pollution in indoor places that permit smoking are higher than levels measured on busy roadways, closed garages, and during firestorms.[2]

Although there has been progress for smoke-free air laws around the world, only 9% of countries require smoke-free bars and restaurants and 65 countries have not applied any smoke-free policies on a national level.[2] Over 90% of the world's population is not covered by comprehensive smoke-free laws.[2] Moreover, compliance with the smoke-free laws is very low as only 2% of the world' population live in countries with comprehensive smoke-free policies and high levels of compliance.[2] The benefits of tobacco control are enormous and the execution is fairly cheap. Tobacco use kills or disables many people in their prime years, which can result in denying families of their primary wage-earners, consuming family budgets, raising the cost of health care, and deterring economic growth.[2]

Global Goals for Tobacco Control

The World Health Organization's Framework Convention for Tobacco Control has set forth goals for global tobacco control. The treaty is the first of its kind to be negotiated under the WHO. It is an evidence-based treaty that reaffirms the right of all people to the highest standard of health and was created in response to the spread of the tobacco epidemic to all countries of the world.[5] The treaty addresses addictive substances and the importance of demand reduction strategies and supply issues.[5] It was mainly spread through trade, foreign investment, global marketing, transnational tobacco advertising, promotion and sponsorship, and the international movement of contraband cigarettes.[5] The main provisions are set as standards for countries around the world to implement into their respective policies. The main provisions include the regulation of contents, packaging, and labeling of tobacco products; sales to and by minors; illicit trade in tobacco products; and smoking at work and public places.[6] The framework also includes goals to reduce consumer demand by price and tax measures; comprehensive bans on tobacco advertising, promotion, and sponsorship; and education, training, raising public awareness, and

assistance with quitting.[6] The WHO's treaty hopes to protect the environment and health of tobacco workers by supporting economically viable alternative activities; engaging in research, surveillance, and exchanging information; and supporting legislative action to deal with liability.[6] (See Appendix C for main provisions of WHO FCTC.) Although this treaty is unique and revolutionary, it will only succeed in making a difference if countries and their governments are dedicated to implementing and enforcing the provisions. In the words of WHO's Director General, Dr. Jong-wook Lee:

> "The WHO FCTC negotiations have already unleashed a process that has resulted in visible differences at country level. The success of the WHO FCTC as a tool for public health will depend on the energy and political commitment that we devote to implementing it in countries in the coming years. A successful result will be global public health gains for all."[5]

Tobacco in South Africa

South Africa (SA) is one developing country classified as upper-middle income[7] that has a high rate of smoking (22.9% overall).[8, 9] As of 2006, 33.3% of males smoke and 8.2% of females smoke in the African continent.[10] As of 2009 in South Africa, 35.3% of males smoke and 10.5% of females smoke.[9] Comparatively, in Nigeria, 8.0% of males smoke and 0.5% of females smoke.[11] In Ghana, 8.8% of males and 0.1% of women smoke.[11] Zambians have a prevalence of 15.6% for men and 0.5% for women.[11] In Namibia, 17.5% of males smoke and 5.9% of women smoke.[11] Zimbabwe's prevalence is 22.2% of males and 0.4% of females.[11] In Kenya, 22.9% of males smoke and 0.7% of women smoke.[11]

Tobacco is the third leading cause of death in SA.[8] Smoking has caused between 30,000 and 41,000 deaths in South Africa, which attributes to 8%-10% of deaths and 3.5%-4.6% of

disability adjusted life years (DALYS) in 2000.[8] It ranked third, behind unsafe sex and high blood pressure, in cause of mortality among the risk factors analyzed. In addition, research suggests that smoking is the number one cause of many cancers in South Africa.[8]

According to the South African Advertising Research Foundation, the prevalence of tobacco consumption among adults has decreased.[9] Among the total population, prevalence has decreased from 32.6% in 1993 to 22.9% in 2009.[9] The prevalence of male smoking has decreased from 52.9% in 1993 to 35.3% in 2009.[9] Female prevalence has also decreased from 13.8% in 1993 to 10.5% in 2009.[9] Yearly cigarette consumption decreased from 1.8 billion packs in 1993 to 1.2 billion packs in 2003, which accounted for a 33% decrease.[8] Among smokers, approximately 72% say they would like to quit, 24% have attempted to quit in the past, and 10% have successfully quit.[8]

In South Africa, the amount of deaths due to tobacco is predicted to continue to increase in the future because the smoking epidemic is still developing. Despite the decrease in smoking rates, there is still a high consumption among certain populations in South Africa. This has to do with various demographic characteristics including age, gender, race, culture, and economy. For example, the number of those most vulnerable, including older smokers who began smoking at a young age and continue to smoke throughout their lives, is still increasing in number. In addition, poorer smokers are more likely to quit compared to rich smokers. From 1993-2000, there was an annual decrease in smoking of 0.9% among households that earned less than R1400 per month, whereas smoking increased by 0.3% in those households that earned greater than R7000 per month.[8]

Gender is a major influence for cultural ideas regarding tobacco use. In South Africa, tobacco use is thought to be taboo for black women of reproductive age. Of those who do smoke,

they do it secretly or among trusted individuals. A survey was conducted in Cape Town among Xhosa-speaking women age 15 to 64. Over 75% of the women said that Xhosa people would not approve of women smoking, including a majority of the smokers.[8] They reported that men should not smoke because of negative health effects. In addition, they shared that women should not smoke because it was disgraceful, shameful, and taboo for women to engage in the act. Although social and cultural norms do not support black women using tobacco, this would not reinforce low rates of tobacco use. In fact, tobacco control efforts must be geared towards portraying being tobacco-free with valuable things for black women including: personal dignity, family welfare, upward mobility, and access to personal and social development.[8]

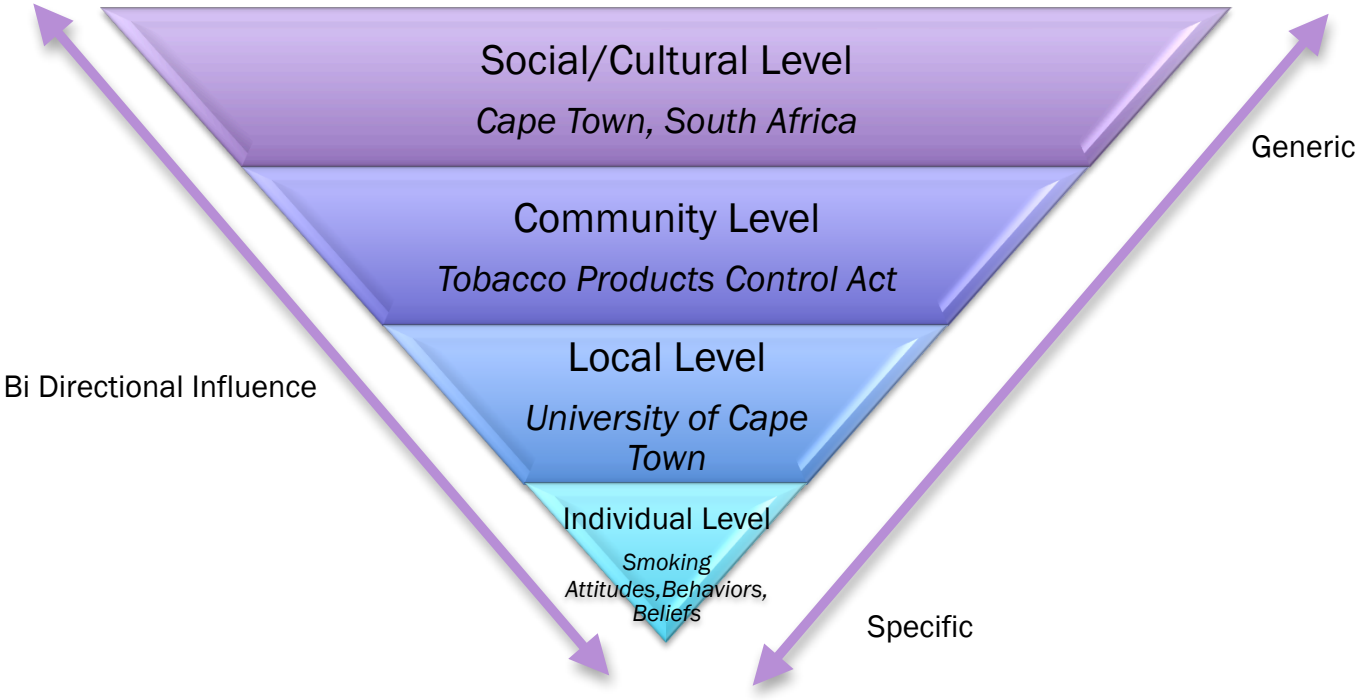
The tobacco companies and the medical community view the economics of tobacco use differently. The tobacco industry publicizes its contribution to the economy via the jobs and tax revenues it creates. In addition, they argue that tobacco control policies would have a negative impact on the economy. On the other hand, the tobacco control community views tobacco use as a financial burden as The Medical Research Council estimated that tobacco use cost the South African economy two times as much in medical costs and reduced the productivity.[8] The use of tobacco would not lead to job losses but to a positive economic effect that could increase employment in the country.[8]

Theoretical Background

This study is grounded in the Behavioral Ecological Model (BEM)[7]. This model highlights social ecological systems and the connection from the highest level of society (e.g., tobacco products control act and taxes on cigarettes) to individual factors (e.g., smoking attitudes, behaviors, and patterns; see Appendix D). In the case of our model, the individual factors include smoking attitudes, behaviors, and beliefs; the local level is the University of Cape

Town; the community level is represented by the Tobacco Products Control Act, and the social/cultural level is the city of Cape Town, SA. As the schematic demonstrates, each level affects one another.

Behavioral Ecological Model Schematic[7]



Of particular interest in this study, the social/cultural (e.g. social norms, legislation), community (implementation and enforcement of legislation), and local levels (e.g. campus and home policies) all influence individual factors (e.g. the decision to smoke or refrain from smoking). This conceptualization allows us to comprehensively assess and understand university students' smoking behavior and related psychosocial sequelae in the context of the community and society.[7] In particular, we will investigate the effect of tobacco control policy on smoking behaviors among college students in South Africa.[7]

Literature Review

Young Adults and Smoking Prevalence

Young adults, age 16-24, comprise 28% of the population in South Africa. This is the highest proportion of adults in the country.[12] Among this group, the prevalence of smokers was 23.7% in 1993 and 17.0% in 2003.[13] Specifically, among young adults age 16-19, prevalence has decreased from 12.9% in 2001 to 11.6% in 2009.[9] However, among 20-24 year olds, prevalence has increased from 20.5% to 21.7%.[9] In 2002, 82.5% of young adults (16-24) smoked zero cigarettes per day (cpd), 8.9% smoked 1-5 cpd, 5.6% smoked 6-10 cpd, 2.7% smoked 11-20 cpd, and 0.3% smoked more than 21 cpd.[8] Among teen smokers, 73% want to quit (similar to adult statistics of 72%) and 74% have had unsuccessful quit attempts in the past year (much higher than adult statistics of 24%).[3] Nonetheless, teen smokers do not believe they are addicted to nicotine, although they experience substantial withdrawal symptoms and difficulty quitting.[3] In order to reap the benefits of tobacco control policies, a major focus must be to reduce youth smoking, as they are the most vulnerable and high-risk demographic. Smoking in college increases the likelihood of regular smoking in adulthood. However, young people are not as addicted as adults and are capable of quitting more easily, highlighting the importance of intervening at this critical point.[13]

Smoking Policies May Alter Smoking Prevalence

Effective policy is the maximally effective way to address the problem smoking and promote change, and thus, policy and its implications for smoking should be examined. The Center for Disease Control and Prevention has given some guidelines to achieve the goals for comprehensive tobacco control programs. The guidelines include: preventing initiation among youth and young adults, promoting quitting among adults and youth, eliminating exposure to

secondhand smoke, and identifying and eliminating tobacco-related disparities among population groups.[14] In order to do this, the CDC suggests that states emphasize: state and community interventions, health communication interventions, cessation interventions, surveillance and evaluation, and administration and management. Specific policies that can be implemented to prevent tobacco use among youth are recommended by the Task Force on Community Preventive Services' Guide to Community Preventive Services including: increasing the unit price of tobacco products; conducting mass media education campaigns; mobilizing to restrict minors' access to tobacco products combined with stronger local laws for retailers, active enforcement of retailer sales laws, and retailer education with reinforcement; and implementing school-based interventions in combination with the mass media campaigns and community efforts.[15]

According to the parties of the World Health Organization Framework Convention on Tobacco Control (WHO FCTC), 100% smoke-free environments are the only proven way to sufficiently protect the health of people from the negative effects of second-hand smoke.[2] Once the laws have been passed, governments must strongly enforce the laws that will result in high compliance levels until the law becomes self-enforcing. Despite many countries' passed legislation requiring smoke-free environments, the majority of countries have no smoke-free laws, limited laws, or ineffective enforcement. Comprehensive legislation that is not well enforced does not protect against second-hand smoke exposure, and legislation that only covers some locations, even if strongly enforced, does not provide substantial protection. In order for smoke-free laws to be credible, full enforcement of the laws is crucial. The best way to ensure compliance is by actively and publicly enforcing the law immediately after the laws are enacted

to show the commitment to the legislation. An effective mode of doing so is unannounced inspections by governmental agencies.[2]

Increasing prices and taxes of tobacco products is the most effective and cost-effective way to reduce tobacco consumption, specifically among the poor and young populations.[16] Tobacco products are normally good for taxation since they are normally produced by a small number of manufacturers, have few substitutes, and have fairly inelastic demand in the short run.[16]

Tobacco Policy in South Africa

Appendix A outlines recent tobacco control policies implemented in SA. In 1993, SA established the Tobacco Products Control Act, which restricted smoking in public places, regulated the sale and advertising of tobacco products, and regulated packaging.[17] Amendments were added in 1999, 2003, 2007, and 2008. The most recent amendments (2007 and 2008) were operationalized in August 2009. The amendments strengthened the public smoke-free policies, increased regulation of tobacco product manufacturing, instituted policy aimed at making cigarettes less appealing and less addictive among children, and required picture-based health warnings on tobacco products.[17] In April, 2005, South Africa signed and ratified the WHO FCTC.[18] The 2007 and 2008 acts also included an increase in fines for smoking in non-smoking areas, smoking restrictions in cars with passengers under age 12, rules against those under 18 being sold tobacco products or being permitted in designated smoking areas, restricted cigarette vending machines to areas not accessible to minors, and rules against the tobacco industry hosting "parties" or using "viral" marketing to target young people. Company representatives would take cigarettes to clubs, discos, coffee bars, college campuses, and invite teens to parties and events in order to entice them to smoke.[17]

Despite this legislation, in the initial act, the minister could exempt provisions in the act. Moreover, although it prohibits the sale of tobacco to minors, 66% of under-age students reported purchasing cigarettes in stores; in addition, 22% of students reported being offered free cigarettes by tobacco company representatives.[8] Similarly, although the act initiated a public smoking ban, only one-fourth of restaurants complied, and rather opened up smoking sections.[19] In addition, tobacco companies are marketing through the internet, SMS, and "buzz" or "viral" despite legislation against doing so. Thus, enforcement, compliance, and adherence to the legislation are major issues.

Since 1994, South Africa's government has implemented taxation policies on tobacco products, which has been shown to be the most effective strategy for reducing tobacco use in high- and low-income countries. The South African government declared in 1994 that it was going to raise the excise tax on cigarettes to 50% of the retail price over the course of a few years.[20] In 1997, the 50% increase was reached. In 2004, the targeted tax was increased from 50% to 52%. From 1993-2007, the price of cigarettes increased by 148.2%; this was accompanied by a decline in cigarette consumption of 30.4%, and smoking prevalence declined by 25.5% (see Appendix B).[21] From 2000 to 2003, the aggregate consumption decreased again by 7%.[20] In 2003 and 2004, cigarette consumption stabilized around 1.2 billion packs (24 billion individual cigarettes) and has increased since then.[20] In 2004-2008 there was a period of rapid economic growth, which resulted in increasing cigarette sales. However, in 2009 the 4.9% decrease in cigarette consumption was mainly due to the economic recession.[20]

Impact of Tobacco Policy on Smoking Among Youth

Several policies may impact tobacco use among youth. Raising the price of cigarettes has been shown to reduce smoking among teenagers and young adults.[22] Increasing the price of

cigarettes has been related to the decrease in smoking prevalence among high school and college age students. In addition, it has been linked to reductions in daily smoking, frequency of smoking, average consumption, and smoking initiation among young people.[22] Smoke-free laws and youth access laws have been proven to be effective in reducing smoking and smokeless tobacco use among youth.[22] College students may still initiate smoking and transition into becoming regular smokers; however, they may also be more able to quit smoking. This suggests that tobacco control may be most effective among young adults, particularly those attending college. Tobacco control efforts targeted towards young adults may lead to positive changes in prevalence and intensity of tobacco use. This could enable students to quit or stop the transition to a regular pattern of smoking.[22]

Research Gaps

There are important gaps in research regarding young adult smoking and how this legislation has impacted smoking among this subgroup. There have been many studies conducted on smoking behavior among adults and youth in South Africa and other countries around the world. Specifically, the studies have assessed tobacco-attributed deaths,[23] cigarette use,[24] predictors of cigarette smoking,[25] smokeless tobacco,[26] health and economic impacts of tobacco,[27] support for tobacco control policies,[28] and more. However, there is a gap in the research on the effects of tobacco control policy on smoking behavior, attitudes, and patterns among college students in South Africa.

Specific Aims

Aim 1: To identify sociodemographic and psychosocial correlates of current smoking among South African college students.

Aim 2: To identify correlates of smoking attitudes (specifically as they related to interpersonal relationships, secondhand smoke exposure, health concerns, and tobacco marketing), reactions to public and campus smoking policies, and implementation of private smoke-free policies.

Methodology

This study used a mixed methods approach based on the Behavioral Ecological Model. The research study includes three main components: semi-structured observations (n~200), focus groups (n=27), and surveys (n=103). This study was approved by the Emory University Institutional Review Board (IRB00044253) and the UCT IRB (Reference: CF/SoE/EU/August/ 2010).

Naturalistic Observations

Participants and Recruitment

The PI observed about 200 students in the university setting in Cape Town and focused on their smoking behaviors and the effects of tobacco-related policies, specifically the implementation of and enforcement of university smoke-free policies and compliance of students with policies.

Procedures

These campus observations were semi-structured, and notes were taken during the observations. The 6 observations were conducted on the steps located in the center of campus and in the food court area on UCT's campus. They were conducted at different times of the day- specifically in the morning, during lunch, and after the last class of the day.

Measures

Student smoking behavior and the effects of tobacco-related policies, specifically the implementation of and enforcement of university smoke-free policies and compliance of students

with policies were examined. In addition, fines for smoking in non-smoking areas and presence of designated officials on campus responsible for regulation enforcement were also observed.

Data Analysis

The data of the observations were compiled and the major themes were taken into account prior to disseminating the survey and conducting the focus groups. Certain questions of the survey and focus groups were eliminated based on these observations, as they were irrelevant upon observing the environment of the study site.

Survey Research

Setting and Participants

The target population was university students at the University of Cape Town. Eligible students were at least 18 years of age and enrolled at least part-time as undergraduate and graduate students at the University of Cape Town. There are over 23,500 students enrolled at UCT as of 2009. Of these students, over 15,800 are undergraduates and 6,700 are in graduate school. There are over 4,300 international students from approximately 100 countries. The population was chosen based on the convenience of accessing students at UCT as well as its size and diversity in the pursuit of obtaining a large and varied sample.

Recruitment and Procedures

In July/August 2010, current professors and TAs of three economics courses and two politics courses, consisting of around 300-500 students in each section, posted the survey the school's online portal. Through this portal, emails, chat messages, and announcements were sent through the site to inform students about the survey and focus groups. In addition, participants were recruited through distributing the survey link to students via flyers, sending emails, in

person announcements in lecture, and other announcements on the school's online portal. The link to the survey was attached to all forms of communication.

Surveys were kept anonymous and the results were released only to the principal investigator. All of the results were automatically stored online and available for download in Microsoft Excel format. The data was then input into SPSS for analysis.

Measures

The survey (Appendix E) was pilot tested on University of Cape Town School of Economics students. The surveys were administered online using survey monkey and lasted less than 10 minutes. The online survey contained 46 questions assessing smoking behaviors, patterns, motives, and demographic characteristics. A description of these sections follows.

Demographics

The demographic characteristics assessed included age, gender, ethnicity, nationality, and living status. Ethnicity included white, African, coloured, Indian, and other. Nationality was assessed by asking if they were an international student. Students were asked if they lived on-campus or off-campus to assess their living status.

Smoking Status

In order to understand the smoking behaviors of the students, they were asked, "In the past 30 days, on how many days did you smoke a cigarette (even a puff)?" and "On the days that you smoke, how many cigarettes do you smoke on average?" These questions have been validated and proven to be reliable based on previous studies.[29-31] Students who reported smoking at least one day in the past 30 days were considered current smokers, and those reporting smoking all 30 days were considered daily smokers.[32, 33]

Social Smoking

Participants were asked, "In the past 30 days, did you smoke: mainly when you were with other people; mainly when you were alone, as often by yourself as with others, or not at all."[34]

Readiness to Quit

Participants were asked, "What best describes your intentions regarding quitting smoking: never expect to quit; may quit in the future, but not in the next 6 months; will quit in the next 6 months; and will quit in the next month." [35]

Confidence and Motivation to Quit Smoking

We asked participants, "On a scale of 0 to 10 with 0 being 'not at all confident' and 10 being 'extremely confident,' assuming you want to, how confident are you that you could quit smoking cigarettes starting this week and continuing for at least one month?" and "On a scale of 0 to 10 with 0 being 'I don't want to at all' and 10 being 'I really want to,' how much do you want to quit smoking cigarettes?"[36, 37]

Number of Friends Who Smoke

Participants were also asked "Out of your five closest friends, how many of them smoke cigarettes?"[37]

S*moking Attitudes*

The Smoking Attitudes Scale [38] is a 16-item questionnaire assessing attitudes toward smoking. Participants are to rate how strongly they agree (1=strongly disagree, 7=strongly agree) with statements across four dimensions—interpersonal relationships with smokers (e.g., "I would not date a person who smokes"), laws and societal restrictions on smoking in public places (e.g., "Restricting smoking in public places is unfair to smokers"), health concerns (e.g., "Secondhand smoke is a legitimate health risk"), and marketing and sale of cigarettes (e.g., "All forms of cigarette advertising should be illegal"). [38] Higher scores indicate more negative reactions to

smoking.

Smoking Motives

The Motives for Smoking Scale [39, 40] assesses the extent to which each of 15 smoking-related motives is true for the survey participant (1=not at all true, 5=very true). The scale includes questions about four common motives: social (4 items; e.g., "Smoking helps you fit in with other people"), self-confidence (4 items; e.g., "Smoking makes you feel more self-confident"), boredom relief (2 items; e.g., "Smoking is something to do when you're bored"), and affect regulation (5 items; e.g., "Smoking helps you forget about worries"). Higher scores indicate that the motive applies to the respondent.

Data Analysis

Data analysis was conducted in the fall of 2010. First, descriptive statistics were conducted. Frequencies and percentages were used for categorical variables, and means and standard deviations were used for continuous variables. Second, bivariate analyses were conducted examining factors associated with the following variables: (Aim 1) current smoking status and (Aim 2) attitudes toward smoking, reactions to public and campus policies, and implementation of private restrictions. Chi-squared and t-tests were used explore differences for categorical outcomes; correlations and t-tests were used to assess relationships for continuous variables. Each of these outcomes was then examined through multivariate regression modeling. Binary logistic regression was used for current smoking status, readiness to quit among smokers, recent quit attempts among smokers, and implementation of private smoking restrictions. Ordinary least squares regression was used to model factors associated with smoking level among smokers, attitudes toward smoking, and reactions to public and campus policies. Backwards stepwise entry was used to determine which variables were allowed to remain in the

model. Significance was set at α=.05 for all tests. Survey data analyses were conducted in SPSS 18.0.

Focus Groups

Participants and Recruitment

Eligibility criteria for the focus groups included being at least 18 years of age and being enrolled at least part-time as a student at UCT. Students were informed about the focus groups through communication on the online student portal, flyers, word of mouth, and announcements in lectures. In addition, the information for the focus groups was included on the last page of the survey with my contact information (e-mail and phone number). Students sent emails to the PI expressing their interest in the focus groups for certain dates.

Procedures

The research team completed 4 focus groups. The focus group had 3-13 participants (total N = 27) and lasted for approximately one hour. The focus groups were conducted in a classroom on UCT's campus. Refreshments were available after the discussion was complete and served as incentives for the participants. Focus groups and surveys were conducted in English, as it is the primary language at UCT. The door was closed during the focus groups so that no entrance was allowed to other individuals to protect privacy of the students.

At the beginning of the focus groups, participants signed an informed consent form (Appendix G) and completed a brief self-report survey (Appendix I) that assessed sociodemographic, health, and tobacco-related factors. The moderator's interview guide (Appendix F) directed the discussions during each focus group session.

The focus groups were recorded on a Mac computer through the voice recording application. During each focus group, a research assistant (a medical doctor in Zambia

completing her MPH) assisted in setting up the room, taking field notes, recruiting participants, and recording the discussions.

Survey information was kept anonymous and stored in a locked box in the PI's quarters. Any personal information or identities that were disclosed during the focus group sessions were coded to keep the anonymity of the participants. The hand written notes from the surveys were stored on the Mac computer in a password-protected folder.

Materials

The focus group moderator's guide and focus group survey (Appendices E and F) were pilot tested on University of Cape Town School of Economics students upon arrival in Cape Town.

Measures

The focus group survey assessed basic sociodemographic characteristics (including age, gender, and ethnicity), smoking behaviors, confidence and motivation to quit, and quit attempts. The focus group moderator's guide included brief information about the study, ground rules for participants, confidentiality and privacy, and consent to participate in the study. The questions assessed lifestyle and smoking, intervention strategies, and smoke-free policies (including information about the Tobacco Products Control Act). The lifestyle and smoking questions asked participants about the definition of a smoker and categories of smokers. The intervention strategies included questions about barriers, motivators, and quitting smoking, and general intervention strategies. The smoke-free policies section asked participants about the public smoking ban, campus policies, and private restrictions. After all of the major questions were asked, the moderator asked for any other important information that was relevant to the discussion.

Data Analysis

Upon completion of all of the focus groups, transcriptions were conducted. The audio recordings of the focus groups were converted into mp3's. Then, they were uploaded to express scribe in order to adjust the speed and sound levels of the recordings. The transcriptions were done by the PI. Once the transcription was complete, the themes and codes were analyzed by hand. The codes/codebook structure was developed by the PI. First, the PI analyzed the data to develop codes. Then, a second coder on the research team analyzed the data to account for inter-coder reliability. The data will be presented in the results section as well as in table format.

Results

Naturalistic Observations

Student Smoking Behaviors

The proportion of students, staff and faculty seemed to be high on campus. Students were found frequently smoking in groups of friends while walking, standing and talking at the food court, and sitting on the steps in the middle of campus. In addition, students also were found smoking frequently alone while walking in between classes and sitting around on campus. Common times for smoking included early in the morning before class, in between classes, and in the evening before they leave campus for the day (Table 1).

University Policies

The UCT policy on smoking was depicted by the signs around campus that indicated "no smoking" permitted inside university buildings. The students, staff, and workers at UCT smoked at the entrances of all university buildings. There was no distinct rule of a distance that must be kept from the entrance of the buildings and, thus, no visible distance was maintained between smokers and the entrances. . There were no signs demonstrating the proper disposal procedure of

cigarettes on campus and, likewise, there were not many cigarette receptacles on campus for disposal of cigarette butts. Thus, cigarette butts were frequently found on the ground (Table 1).

Student Compliance and Policy Enforcement

Students were compliant in terms of not smoking inside university buildings based on observations on campus during the normal school day. However, students did smoke in front of doorways of academic buildings, the food court, and other university buildings. Cigarettes and hookahs were sold at the snack shop in the food court on campus. In addition, cigarettes and lighters were also sold in the campus-based snack shop (Table 1).

Survey Research

Table 2 describes survey participant characteristics. Of 103 survey participants, 53.4% were male, 53.4% were white, the average age was 21.36, and 41.5% smoked in the past 30 days (see Figure 1 for frequencies of smoking among smokers). Figure 2 displays the high rates of approval of smoke-free policies and prevalence of smoke-free policies in private spaces including cars and homes.

Correlates of Smoking Status

Table 3 shows bivariate analyses examining correlates of current smoking status, examining sociodemographic characteristics, receptivity of public, private, and campus policies, and implementation of private home and car restrictions. Receptivity to policies differed by smoking status (see Table 3). Non-smokers were more receptive to all public policies, including a ban in all public places ($p < .001$). They were also more receptive to a complete campus-wide ban ($p = .052$). Of non-smokers, 23.3% reported they would be more likely to attend the university if the smoke-free campus was implemented ($p < .001$). Non-smokers were also more likely to have complete car ($p < .001$) and home bans ($p = .233$). Smokers were more receptive to

the current campus policies (p =.442), yet were less receptive to a smoke-free campus (p =.052). They were less receptive to public policies (p <.001) and less likely to have private restrictions in their homes (p=.233) and cars (p<.001). Smokers had more days of using alcohol in the past 30 days (p =.481) as well as more friends (p =.729) that smoked compared to non-smokers.

The multivariate model identified factors related to current smoking status. The factors included being male (OR=0.34, CI (.13,.89), p=.03), number of friends that smoke (OR=1.34 , CI (1.0,1.7), p=.03), days of consuming alcohol in the past 30 days (OR=1.09 , CI (1.0,1.1), p=.02), and days of using marijuana in the past 30 days (OR=1.12 , CI (.96,1.3), p=.15) (Table 4).

Correlates of Receptivity to Ban in all Public Places

Smokers' (M= 2.44, SD=.121, p<.001) receptivity to a ban in all public places was less than the nonsmokers (M= 2.83, SD=.054, p<.001). Correlates of receptivity to a ban in all public places included living with a smoker (Coefficient= -.284, CI (-.52, -.04), p=.020) and smoking in the past 30 days (Coefficient= -.36, CI (-.60, -.13), p=.003) (Table 5).

Correlates of Receptivity to a Smoke-Free Campus

Smokers (M= 0.98, SD=1.10, p=.052) were less receptive to a smoke-free campus than nonsmokers (M= 2.35, SD=.820, p= .052). The results of the multivariate model predicted correlates of receptivity to a smoke-free campus including: number of friends who smoke (Coefficient= -.08, CI (-.16, -.01), p=.022), at least one parent smoked (Coefficient= -.45, CI (-.80, -.09), p=.014), and having smoked in the past 30 days (Coefficient= -1.17, CI (-1.55, -.80), p<.001) (Table 5).

Correlates of Smoke-free Policies in the Home and Car

Smokers were less likely to have a home ban (N(%)= 26(60.5%) (p=.233)) and car ban

(N(%)= 24(55.8%) (p<.001)) compared to nonsmokers' home ban (N(%)= 43(71.7%), (p=.233)) and car ban (N(%)= 52(86.7%) (p<.001)). In the multivariate model predicting having complete smoke-free homes correlates included using alcohol in the past 30 days (OR= .937, CI (.87,1.00), p=.053)), at least one parent smoked (OR= .325, CI (.12, .86), (p=.024)), and living with a smoker (OR= .18, CI (.06, .48) (p<.001)) (Table 5). For complete smoke-free cars the model predicted correlates of using alcohol in the past 30 days (OR= .89, CI (.83, .95), (p=.002)), living location (on-campus vs. off-campus) (OR= .205, CI (.04, .91), (p=.037)), and smoking in the past 30 days (OR= .24, CI (.08, .70), (p=.009)) (Table 5).

Correlates of Attitudes Towards Smoking

The analysis predicted correlates for attitudes towards smoking including: age (OR= -.64, CI (-1.26, -.02), (p=.041)), days used alcohol in the past 30 days (OR= .18, CI (-.21, .59), (p=.35)), number of friends who smoke (OR=1.42, CI (.20, 2.63), (p=.022)), living with a smoker (OR= 2.59, CI (-3.52, 8.7), (p=.401)), at least one parent smoked (OR= 4.07, CI (-1.81, 9.96), (p=.173)), and smoking in the past 30 days (OR= 12.14, CI (5.94, .18.35), (p<.001)) (Table 5).

Focus Group Research

Table 6 presents the demographics and smoking variables of research participants of the focus groups. Of the 27 focus group participants, the average age was 20.37 and the majority of the students were male (63.0%) and African (59.3%). Table 7 summarizes the themes that surfaced in the four focus group discussions.

Public Smoke-Free Policies

In general, participants expressed approval of smoking sections in restaurants and bars. However, some expressed disapproval of bans in restaurants and bars. Some students also

reported that it caused them to decrease the frequency of smoking and increased feelings of isolation.

Campus Smoking Policies

At the University of Cape Town, campus policies included an indoor smoking ban in all university buildings with smoking being allowed anywhere outdoors. When asked about a potential campus-wide ban, most students reported that the ban would not influence their decision to attend UCT. However, if the ban was put into place, some students reported that they would smoke elsewhere, smoke where they would not be caught, and spend less time on campus. Most students agreed that there are too many smokers for a 100% smoke-free campus. Many students reported that there is significant lack of enforcement on campus, particularly in the residence halls. Although the campus rules state that the university buildings are smoke-free, most people smoke freely in dorms in alongside the resident assistant smokers and university police that also smoke.

Smoking in Private Spaces

Among a majority of the participants, smoking restrictions in the home and car were favorable. Students reported that the smell that smoking causes in the home. However, some participants had partial ban including only smoking in the kitchen or in their private rooms was a negative consequence of smoking. Students supported and respected others' private smoking restrictions in homes and cars. Participants also discussed not smoking among children or minors when in enclosed areas or in their parents' cars.

Triggers for Smoking

Some major triggers for smoking among student smokers at UCT included stress, social influences, alcohol consumption, and boredom. Students experienced majority of stress due to

school and smoked significant amounts while studying. Social influences, such as peers smoking, smoking shown on television, and smoking depicted as attractive, seemed to promote smoking. Nearly all participants described a natural combination of smoking while drinking. Smoking was reported to more frequently occur when students drink, go to clubs/bars, and are surrounded by others that are smoking while under the influence than outside of these contexts. Boredom was another trigger for smoking.

Environmental Influences

Many students have different smoking patterns while living at home with their parents and living independently at school. Some parents are unaware of their children's smoking habits. Thus, while students are at home under the supervision of their parents, it might be harder for them to maintain their habit or even continue to smoke at all because of parental restrictions in the home. However, when they return to school, they are free to smoke as they please as they are living among their peers and make their own rules.

Peer/Familial Influences for Initiation and Maintenance

Peers and families had a major influence on the initiation and maintenance of smoking among students. Many participants began smoking with their friends or with their older siblings. Students described their natural curiosity around smoking as young adolescents when they tried their first cigarette with their friends. Initial social smoking among friends was a major theme that arose with participants in terms of their first experiences with cigarettes.

Barriers to Enforcement

Although many public, private, and campus policies exist, students explained that there were significant barriers to enforcement. Some major issues that surfaced included

a lack of fines for smoking in public places, no regulations in townships for selling to minors, the sale of tobacco products on campus in the food court and the sports center, law enforcement being occupied with other significant issues such as crime, and public and campus law enforcement being smokers themselves.

Discussion

This study is the first to document the smoking rates, attitudes, and reactions to smoke-free policies among a sample of college students in Cape Town, South Africa. The major results of this study were consistent with previous research conducted in other countries, specifically in the United States, regarding college student attitudes toward smoke-free policies.

South African young adults smoke nearly as much as the overall South African population.[9] Among the total population in South Africa, prevalence was 22.9% in 2009.[9] Specifically, among young adults age 16-19, prevalence was 11.6% in 2009.[9] Among 20-24 year olds, prevalence was 21.7% in 2009.[9] In this study, 54 (41.5%) of participants were smokers (smoked at least once in the past 30 days). Among survey participant smokers, 30 (69.8%) were male and 13 (30.2%) were female. In addition, 17 (63.0%) of focus group participants were male and 10 (37%) were female, where all participants were smokers.

Globally, males are more likely to smoke compared to women. In Africa, 33.3% of male smoke and 8.2% of women smoke.[10] Comparatively, South Africans smoke more than Nigerians, Ghanaians, Zambians, Namibians, Zimbabweans, and Kenyans. In South Africa, 35.3% of males smoke compared to 10.5% of women.[9] Whereas, 8.0% of males smoke and 0.5% of females smoke in Nigeria, 8.8% of males and 0.1% of females smoke in Ghana, 15.6% of males and 0.5% of females smoke in Zambia, 17.5% of males and 5.9% of females smoke in Namibia,

22.2% of males and 0.4% of females smoke in Zimbabwe, and 22.9% of males and 0.7% of females smoke in Kenya.[11]

Correlates of Smoking

The correlates of smoking in this study included being male, having friends that smoked, consuming alcohol, and marijuana use. Among survey participants, the majority of smokers were male. In addition, over half of focus group participants were male, where all participants were smokers. Globally, males are more likely to smoke compared to women. Males smoke more than women in Nigeria, Ghana, Zambia, Namibia, Zimbabwe, and Kenya.[11] In South Africa, tobacco is considered taboo for black women.[8] Thus, many women smoke secretly and may not truthfully report their smoking status.

Factors Associated With Smoking

Social factors played a significant role in smoking initiation and maintenance among students. Past research has shown that 18.5% of South African youth have initiated smoking before the age of 10.[41] Among US smokers at the age of 16, 11.1% have initiated smoking at age 10 or younger.[42] Focus group data showed that peers and families had substantial influence on the initiation and maintenance of smoking. Having more friends that smoked was associated with being a smoker. The number of friends that smoked was also a factor relating to current smoking status. These findings have also been shown in previous research that illustrates the influence of friends and parents on smoking initiation among youth.[43] Focus group participants also shared that some older siblings provided first cigarettes. In prior research, older siblings have been shown to influence younger siblings to smoke.[44]

Substance abuse, including marijuana use and alcohol consumption, was a major influence for smoking. Previous studies have shown that high-risk behaviors including marijuana

use and binge drinking are the strongest correlates of smoking status among college students.[45] Many focus group participants first tried smoking while consuming alcohol. Alcohol was frequently associated with social smokers as they smoked only while drinking. Among smoker survey participants, alcohol consumption in the past month was very common. In addition, consuming alcohol in the past 30 days was a factor related to current smoking status. Research has shown significant support for the strong association between alcohol and tobacco use in this population.[46] Some participants described trying marijuana first and subsequently tried cigarettes. Using marijuana in the past 30 days was also a factor related to current smoking status. In fact, various studies have indicated that binge drinking and marijuana use predict cigarette smoking among college students.[46]

Triggers/Barriers to Cessation

Some of the major factors that were found to be triggers of smoking and barriers to cessation included: social environments that involved smoking such as going to bars and clubs, alcohol use, stress, having friends that smoke, being offered cigarettes in social settings, living in a university where smoking is generally prevalent and policies are not enforced, and being in an environment away from home where restrictions are limited. Studies have shown that social smoking or nondaily smoking has been associated with college students.[47] It is often combined with excessive alcohol use and more smoking on weekends or at parties.[47] Focus group participants expressed the difficulty in refraining from smoking when living in a university setting where smoking restrictions were voluntary. Previous studies have indicated that living in a home with a family, including parents and children, increases smoke-free homes, quit attempts, and intention to quit.[48] In addition, there have been strong relationships proven between a family's preference that the smoker not smoke and quitting behavior.[48]

Motivators for Quitting

Some major motivators for quitting were health concerns (i.e., cancer); the negative image associated with smoking, particularly for women; the smell of cigarettes on clothing, breath, and in the home; and preemptively planning to quit in the future based on becoming a parent and having a family. The majority of youth want to quit but have had unsuccessful quit attempts within the past year.[3] Smoking in college leads to an increased chance of regular smoking as an adult. Young adults are more capable of quitting, as they are less addicted as adults. It is imperative to focus tobacco control policies on college students as they are the most vulnerable and high-risk demographic.[13]

Smoke-Free Policies

Smokers were less likely to favor public, campus, and private bans. Smokers were receptive to the current policies on campus but not a smoke-free campus. Some smokers did institute home and car bans. Non-smokers were more likely to have private restrictions in the home and car. In addition, non-smokers were more likely to support public and campus bans. There were various barriers for enforcement of current campus, public, and private policies such as no fines for smoking in public places, no regulations for selling to minors on the street and in the townships, selling tobacco products on campus, law enforcement's preoccupation with other issues, and law enforcement officials being smokers themselves. The lack of enforcement demonstrates non-compliance with public laws as determined by the Tobacco Products Control Act. There has been research done on creating strategies to enforce compliance of policies on college campuses. Enforcement of current tobacco control policies should include active and passive strategies.[49] Some examples of successful strategies include the installation of permanent ground markings that define smoke-free areas; moving benches and cigarette receptacles;

recruiting volunteers to hand out reinforcement cards that include periodic rewards for compliance among smokers; and hosting educational and interactive events to publicize the policies.[49]

Other Policy Issues

At UCT, cigarettes were sold on campus at the food court and at the snack shop in an academic building. Allowing access to cigarettes on campus does not encourage the reduction of smoking among youth, as youth access laws are proven to be effective in reducing consumption of cigarettes among youth.[22] This sends a mixed message to students, as the campus policy does not prohibit smoking inside university buildings, however cigarettes and other tobacco products are sold on campus. Enforcement of tobacco sales to minors must also be enforced. In addition, low costs of single cigarettes and the prevalence of inexpensive cigarettes did not effect students' decisions to smoke. Thus, there is a need to further increase the taxes and price on cigarettes in order to see a decrease of cigarette use among youth. Increasing taxes and prices of tobacco products is the most effective and cost-effective solution to reduce consumption, particularly among youth.[16] Advertising and marketing in magazines, billboards, and in movies/television were not prevalent in South Africa as tobacco marketing of cigarettes is banned. This was a result of the 1999 amendment of the Tobacco Products Control Act in South Africa that banned tobacco advertising.[50]

Implications for Future Research and Public Health Practice

This study has implications for future tobacco control research and practice. A major barrier found in the study was the poor and nearly nonexistent enforcement of existing public and campus policies. The necessity of enforcement of tobacco control policies must be conveyed to government officials, campus officials, and law enforcement as the enactment of policy is not

sufficient. All universities in South Africa are public. Thus, they should all institute public smoke-free policies that are equivalent to those already in place in restaurants, bars, the workplace, and other public places. In addition, public health professionals should focus efforts towards increasing private restriction implementation among smokers to protect themselves as well as nonsmokers that are exposed to secondhand smoke. Future research should further investigate the attitudes of student smokers towards smoke-free policies in order to increase private restrictions among this population. Campus administration must prohibit cigarette sales on campus in order to eliminate easy access to cigarettes for students. Finally, campus-based programs and nationally available resources for smoking cessation should increase their visibility on campus and in the community for students to easily access quitting aids and support.

Limitations

The study has some limitations. First, the study was conducted among college students at the University of Cape Town. This university is a diverse institution; however, it is not completely generalizable to all college students in South Africa, as it is one of the more expensive universities and a very highly ranked university in the country. Thus, it may represent a higher socioeconomic background and higher education levels. There was a small sample size in the study (surveys: n=103, focus groups: n=27). In addition, there was a low response rate in general for the surveys as well as for participation in the focus groups. Completion of the survey was a limitation as many students began the survey but did not complete it in its entirety. Smoking status was assessed using self-report. Because the research was cross-sectional, we cannot determine causality.

Conclusions

In this study, smoking status was influenced by being male, social factors, and substance use (particularly alcohol). Some triggers for smoking and barriers to quit included social environments, alcohol use, stress, varying home restrictions, and the lack of policy enforcement. The desire to quit smoking was mainly due to health concerns. Nonsmokers compared to smokers were more likely to be receptive to public and campus policies and to implement private restrictions in the home compared to smokers. Enforcement of campus and public policies was a significant barrier to the reduction of smoking in Cape Town. Future tobacco control efforts must focus on the enforcement of existing public and campus policies in South Africa.

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RESULT TABLES AND FIGURES

Table 1. Naturalistic Observations

Measures	**Results**
Student Smoking Behaviors	
Prevalence	There was a significant amount of smokers found on campus.
Frequency	Students smoked in morning before classes, in between classes, and at the end of the school day before leaving campus for the day.
Contextual Factors	*Group Smoking:* Students smoked while walking, standing and talking, at the food court, and sitting on the steps. *Smoking Alone:* Students smoked while walking in between classes and sitting around on campus.
Overall Result	***Student smokers are prevalent at UCT.***
University Policies	UCT policy includes no smoking permitted inside university buildings, no distinction of distance to be maintained from entrances of university buildings, and no rules demonstrating proper disposal of cigarette butts.
Overall Result	***University policies are basic and do not incorporate major public policies.***
Student Compliance	Students did not smoke inside university buildings based on campus observations; students did smoke in front of doorways of academic buildings, the food court, and other university buildings.
Overall Result	***Students did comply with basic university policies.***
Policy Enforcement	Cigarettes and hookahs are sold at the snack shop in the food court on campus. Cigarettes and lighters are also sold in the snack shop in the Leslie Social Science academic building.
Overall Result	***The university did not enforce against selling cigarettes on campus.***

Table 2. Survey Participant Characteristics

Variable	**Total N (%) or Mean (SD)**
N	103 (100.0%)
Sociodemographic Variables	
Age (SD)	21.36 (4.48)
Male (%)	55 (53.4%)
International Student (%)	10 (9.7%)
Lives off-campus (%)	78 (75.7%)
White (%)	55 (53.4%)
Smoker living in home (%)	40 (38.8%)
Children in the home (%)	24 (23.3%)
At least one parent smokes (%)	47 (45.6)
Days used alcohol in the past 30 days (SD)	8.32 (7.41)
Used marijuana in the past 30 days (%)	26 (25.2%)
Smoking Variables	
Smoked in the past 30 days (%)	54 (41.5%)
Days smoked in past 30 (SD) [a]	16.09 (12.11)
Average cpd (SD) [a]	7.98 (8.86)
Smoking Motives (SD) [a]	
Social	10.33 (2.56)
Self-confidence	7.30 (2.20)
Boredom	6.58 (1.79)
Affect Regulation	13.23 (3.24)
Ready to quit in next 30 days (%)[a]	8 (18.6%)
Receptivity to Public Policies	
Receptivity to ban in all public places (SD) [b]	2.67 (0.63)
Receptivity to smoke-free workplaces (SD) [b]	2.73 (0.55)
Receptivity to smoke-free restaurants (SD) [b]	2.44 (0.92)
Receptivity to smoke-free bars (SD) [b]	1.84 (1.14)
Receptivity to Campus Policies	

Receptivity to current campus policies (SD) [b]	1.92 (0.70)
Receptivity to complete campus ban (SD) [b]	1.78 (1.16)
Action if complete campus ban implemented	
More likely to attend	11 (10.7%)
Would not affect decision to attend	78 (75.7%)
Less likely to attend	14 (13.6%)
Private Restrictions	
Home smoking restrictions (%)	
No restrictions	12 (11.7)
Some restrictions	22 (21.4)
Complete restrictions	69 (67.0)
Car smoking restrictions (%)	
No restrictions	12 (11.7)
Some restrictions	15 (14.6)
Complete restrictions	76 (73.8)
Attitudes Toward Smoking (SD)	
Interpersonal relationships	20.25 (7.84)
Secondhand smoke	6.03 (4.11)
Laws/restrictions	10.80 (5.89)
Tobacco marketing	11.96 (5.16)

[a] Among smokers.

[b] On a four-point scale, with higher scores indicating greater receptivity.

Table 3. Bivariate analyses examining correlates of current smoking status

Variable	**Smokers N (%) or Mean (SD)**	**Nonsmokers N (%) or Mean (SD)**	***p***
N	43 (41.7%)	60 (58.3%)	--
Sociodemographic Variables			
Age (SD)	21.44 (3.29)	21.30 (5.19)	.88
Female (%)	13 (30.2%)	35 (58.3%)	.005
White (%)	20 (46.5%)	35 (58.3%)	.236
Smoker living in home (%)	19 (44.2%)	21(35.0%)	.346
Children in the home (%)	6 (14.0%)	18 (30.0%)	.057
At least one parent smokes (%)	23 (53.5%)	24 (40.0%)	.175
Number of 5 closest friends that smoke (SD)	3.00 (1.58)	1.50 (2.76)	.729
Days of alcohol use in past 30 days (SD)	11.44 (7.09)	6.08 (6.86)	.481
Receptivity to Public Policies			
Receptivity to ban in all public places (SD) [a]	2.44 (.121)	2.83 (.054)	.001
Receptivity to smoke-free workplaces (SD) [a]	2.49 (.107)	2.90 (.039)	.001
Receptivity to smoke-free restaurants (SD) [a]	2.09 (.16)	2.68 (.09)	.001
Receptivity to smoke-free bars (SD) [a]	1.19 (1.13)	2.32 (.873)	.024
Receptivity to Campus Policies			
Receptivity to current campus policies (SD) [a]	2.21 (.60)	1.72 (.69)	.442
Receptivity to complete campus ban (SD) [a]	.98 (1.10)	2.35 (.820)	.052
Action if campus ban implemented			
Less likely to attend	10 (23.3%)	1 (1.7%)	.001
No influence on decision	33 (76.7%)	45 (75.0%)	.001
More likely to attend	0 (0.0%)	14 (23.3%)	.001
Private Restrictions			
Complete home ban (%)	26 (60.5%)	43 (71.7%)	.233
Complete car ban (%)	24 (55.8%)	52 (86.7%)	.001

[a] On a four-point scale, with higher scores indicating greater receptivity.

Table 4. Multivariate model identifying factors related to current smoking status

	OR	**95% CI**	**p**
Female	0.34	.13, .89	.03
Number of friends that smoke	1.34	1.0, 1.7	.03
Days of consuming alcohol in the past 30 days	1.09	1.0, 1.1	.02
Days of using marijuana in the past 30 days	1.12	.96, 1.3	.15

Table 5. Regression models predicting reactions to smoke-free policies in public, on campus, and in private spaces

Variable	**Coefficient**	**95% CI**	**p**
Receptivity to ban in all public places:			
Constant	2.93	2.76, 3.10	.001
Living with a smoker	-.284	-.52, .-.04	.020
Smoked in the past 30 days	-.36	-.60, -.13	.003
Receptivity to Smoke-free Campus:			
Constant	2.66	2.37, 2.95	.001
Number of friends that smoke	-.08	-.16, -.01	.022
At least one parent smoked	-.45	-.80, -.09	.014
Smoked in the past 30 days	-1.17	-1.55, -.80	.001
	OR	**95% CI**	**p**
Private Policies:			
Smoke-free Home			
Constant	13.94	--	.001
Used alcohol in the past 30 days	.937	.87, 1.00	.053
At least one parent smoked	.325	.12, .86	.024
Lives with smoker	.18	.06, .48	.001
Smoke-free Car			
Constant	65.22	--	.001
Used alcohol in the past 30 days	.89	.83, .95	.002
Living location (on-campus vs off-campus)	.205	.04, .91	.037
Smoked in the past 30 days	.24	.08, .70	.009
Attitudes Towards Smoking Total			
Constant	50.31	36.09, 64.53	.001
Age	-.64	-1.26, -.02	.041
Days used alcohol in the past 30 days	.18	-.21, .59	.35
Number of friends who smoke	1.42	.20, 2.63	.022
Lives with smoker	2.59	-3.52, 8.7	.401
At least one parent smoked	4.07	-1.81, 9.96	.173
Smoked in the past 30 days	12.14	5.94, 18.35	.001

Table 6. Focus group participant characteristics

Variable	**Total N (%) or Mean (SD)**
N	27
Sociodemographic Variables	
Age (SD)	20.37 (1.84)
Male (%)	17 (63.0)
African (%)	16 (59.3)
Smoking Variables	
Days smoked in past 30 days (SD)	20.48 (11.18)
Average cpd (SD)	6.15 (5.44)

Table 7. Reactions to smoking policies in public, on campus, and in private spaces

Topic	Quote
Reactions to public smoke-free policies	
Positive reactions	
	[What if somebody started to smoke in a non-smoking section, would they ask them to move or you think they wouldn't care?] *I think they would definitely. Everyone would say listen this is not a smoking section, please move.*
Negative	
Disapproval of Bans in Restaurants/Bars	*Yes, I can't smoke at restaurants anymore. Yeah, they get really serious about that. You just hate those smoking areas…smoke boxes. What are we prisoners?*
Private Restrictions in Car	
Support for Car Bans	*I would never smoke if there's someone under the age of 12. As a matter of principle.*
Disapproval of Car Bans	*I would smoke if I had my own car.*
Private Restrictions in Home	
Support for Home Bans	*When you invite people over, and it smells like smoke it's not welcoming. Welcome to my house guys, and it smells like smoke.*
Support for Others' Private Restrictions	*Sometimes I won't even ask, I'll actually go outside. It's just respect.*
Reactions to Campus Policies	
Disapproval of potential campus-wide ban	*Obviously we would find some way to smoke. You can never get a 100% smoke-free campus.*
No enforcement of current campus policies	*Well at residences here at UCT you can smoke freely.*
Peer/Familial Influences	
Peer/Familial Influences for Initiation	*I come from a family of smokers. My dad's a serious smoker. My brother picked up smoking. To be honest, I didn't start smoking cigarettes first. I actually tried other things if you get my drift. And then I just tried cigarettes one day, you know just tried to increase my buzz and then I ended up getting addicted because I felt like a significant change. And then from that point on it was one a day, then it became two a day, it just got out of control.*
Peer/Familial Influences for Maintenance	*I find a big problem is that I have a lot of friends who are smokers. So even if I am incredibly sort of determined to quit, it is really hard when you're hanging out with people who smoke. And they're not just smokers. But they're quite heavy smokers…I know at the end of the day it's my*

	problem if I do it. But it definitely does make it more difficult.
Triggers for smoking	
Stress	*I started smoking first year of university during exam period. It was definitely the biggest stress relief.*
Social Influences	*The outside influences. Like every time I'll be fine, but every time I see someone on the television who smokes, or one of my friends, then I can't resist. Like I have to smoke.*
Alcohol Consumption	*Me personally, I only smoke when I'm drinking. And that's if someone I'm drinking with is smoking. If no one is smoking while I'm drinking, I'm not going to smoke.*
Boredom	*Also when you're bored. Like when I have to sit and wait for the Jammie [bus]. Like it's going to be15 minutes and I have nothing to do, I'll smoke. It's like when you're lonely or it's company, you've got something to do. You don't just sit there.*
Environmental Influences on Smoking	
More smoking at school vs. home/Differing restrictions	*… I mean when you're in that environment, you're pretty much forced not to smoke, then it's not that difficult. But then again you come back here and you just crave.*
Barriers to enforcement of Public policies	*Yeah it's definitely a situation where bar, pubs, and clubs, they'll have the no smoking sign up there because the are required to have it. But they'll have ashtrays out and everyone will smoke. They won't come and enforce it.*

Figure 1. Number of days smoked among college student smokers

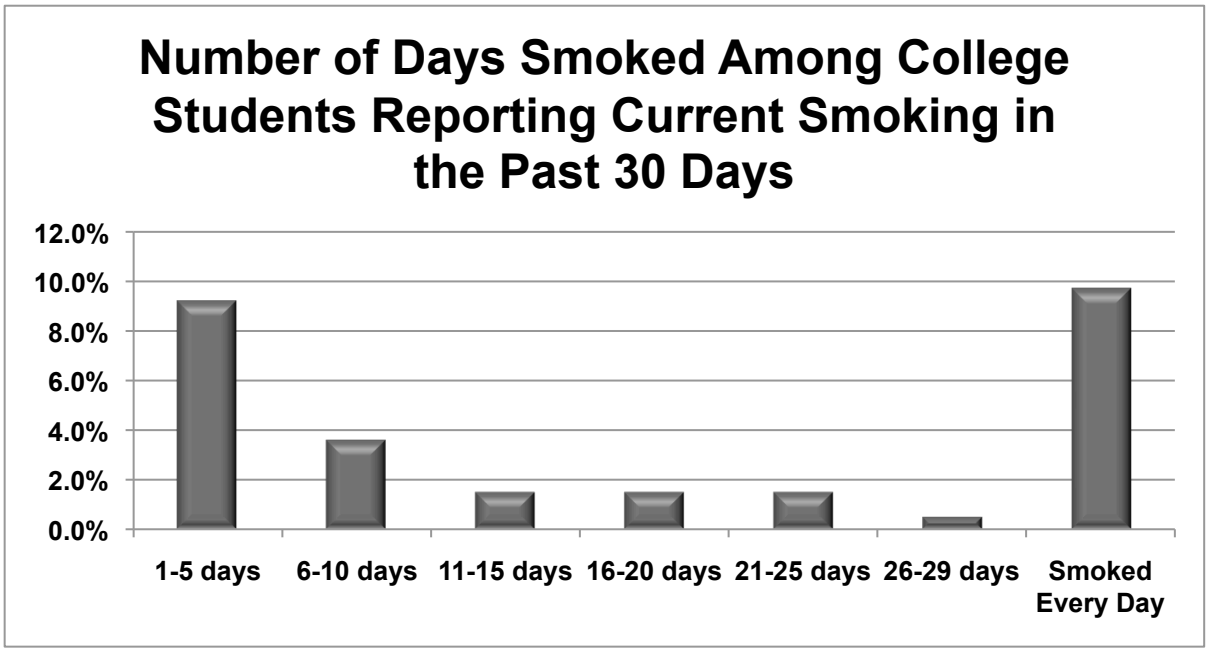
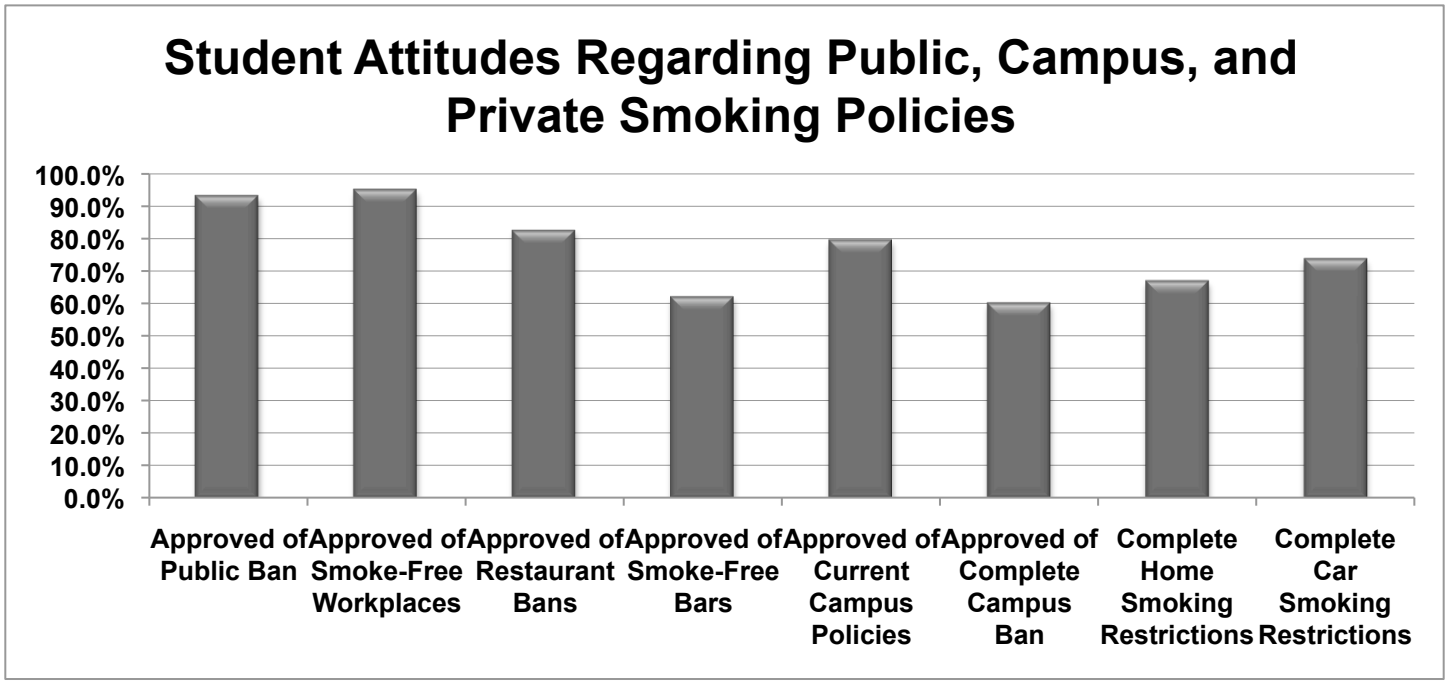


Figure 2. Percent of students reporting reactions to public policies, campus policies, and private policies



APPENDICES

Appendix A:

Tobacco Products Control Act and Amendments of South Africa[50]

YEAR	POLICIES
1993	-Standards for manufacturing, importing and exporting tobacco -No smoking in public places -No sales to children under age 16 -Minister has power to make regulations -Regulations on advertising
1999	-No tobacco advertising, including sponsoring events -No distribution of free tobacco products -Reduce maximum yields of tar, nicotine and other ingredients in tobacco products -Increase fines -No smoking in workplaces and other public places
2003	-Introduce pictorial health warnings -Ban misleading descriptors ex: mild, light, low tar -Ban the sale of "duty-free" and "tax-free" tobacco products -Ban smoking in certain outdoor public places and within five meters of doorways and entrances
2005	-SA signed and ratified the WHO's Framework Convention on Tobacco Control
2007	-Further regulate smoking in public Places and outdoor places -Establish manufacturing standards for tobacco products -Increase fines
2008	-New requirements for packaging and labeling of products -No sale of tobacco to persons under 18 -Vending machines selling tobacco products must be in places where persons under 18 are not present -Minister may make regulations -Increase fines
2009	Laws from 2007 and 2008 were operationalized

Appendix B:

Percentage changes in smoking indicators in South Africa (1993 to 2007)[21]

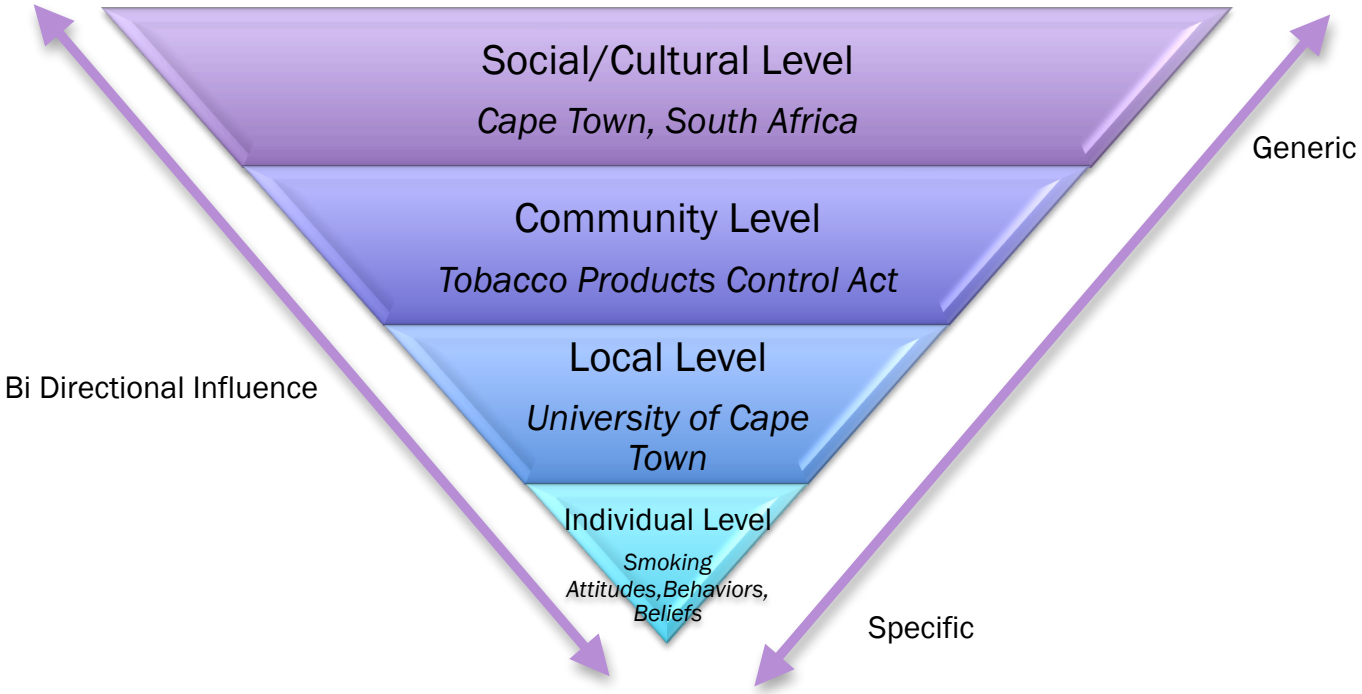
INDICATOR	CHANGE
Real price per pack	148.2%
Aggregate consumption	-31.9%
Per capita consumption	-37.7%
Smoking prevalence	-25.5%
Number of smokers	-2.1%
Average consumption per smoker	-30.4%

Appendix C:

Main provisions of the WHO FCTC[6]	
Regulation of:	• Contents, packaging, and labeling of tobacco products • Sales to and by minors • Illicit trade in tobacco products • Smoking at work and public places
Reduction in consumer demand by:	• Price and tax measures • Comprehensive ban on tobacco advertising, promotion, • and sponsorship • Education, training, raising public awareness, and • assistance with quitting
Protection of the environment and health of tobacco workers:	• Support for economically viable alternative activities • Research, surveillance, and exchange of information • Support for legislative action to deal with liability

Appendix D:

Behavioral Ecological Model Schematic[7]



Appendix E:

UNIVERSITY STUDENT SMOKING SURVEY-SUMMER 2010 (UCT)

Topic	**Number of items**
HEALTH STATUS AND BEHAVIORS	**11 items**
SOCIODEMOGRAPHICS	**5 items**
ATTITUDES ABOUT SMOKE FREE POLICIES Tobacco Products Control Act (4 items) Tobacco company free products (2 items) Campus smoke-free campaigns (5 items) Rules about smoking in private spaces (3 items)	**14 items**
DEPRESSION	**2 items**
STRESS	**4 items**
SMOKING Social aspects of smoking (3 items) Harm of smoking (2 items) Alcohol and smoking (2 items)	**7 items**
SMOKING ATTITUDES SCALE	**16 items**
SMOKED IN LAST 30 DAYS	**1 item**
SMOKERS ONLY	
Smoking Behavior	**3 items**
Nicotine Dependence	**1 item**
Quit Attempts and Readiness to Quit	**2 items**
Effect of the Act on Smoking	**2 items**
Use of Assistance	**1 item**
Smoking Motives	**15 items**
Smoker Self-Concept	**9 items**

Total items for NONSMOKERS: 60; Total items for SMOKERS: 93

Health Status and Behaviors

Have you ever used cigarettes/alcohol/marijuana in your lifetime? (check all that apply)

Cigarettes___
Alcohol___
Marijuana___

On how many days have you smoked cigarettes in the past 30 days?
____days

On how many days have you used alcohol in the past 30 days?
____days

On how many days did you drink 5 or more drinks on one occasion in the past 30 days?
___days

On how many days have you used marijuana in the past 30 days?

Have you ever smoked hookah?

Yes
No

On how many days have you smoked hookah in the past 30 days?
_____days

Have you ever used other forms of tobacco (check all that apply)
Bidis, snuff/chewing tobacco, cigars, snus

How do you most often purchase your cigarettes?
In amounts of : 30, 20, 10, singles

Where do you most often purchase your cigarettes?
Supermarket, convenient store, street vendor, vending machine

Out of your 5 closest friends, how many of them smoke? (You can consider co-workers or relatives your closest friends.)

Demographics

What is your gender?
Male
Female

How old are you?

What is your ethnicity?

White
African
Coloured
Indian

Are you an international student?
Yes
No

Where do you live when you are attending school?
On-campus
Off-campus

Attitudes about Smoke-Free Policies

The Tobacco Products Control Act was initiated in 1993, and has been amended in 1999, 2003, 2007, and 2008. The most recent acts (2007 and 2008) went into effect in August, 2009.

How do you feel about the law prohibiting smoking in all public buildings ?
Approve strongly
Approve somewhat
Disapprove somewhat
Disapprove strongly
How do you feel about the law prohibiting smoking in all workplaces?
Approve strongly
Approve somewhat
Disapprove somewhat
Disapprove strongly

How do you feel about the law prohibiting smoking in all restaurants?
Approve strongly
Approve somewhat
Disapprove somewhat
Disapprove strongly

How do you feel about smoking being prohibited in bars?
Approve strongly
Approve somewhat
Disapprove somewhat
Disapprove strongly

Have you ever been offered free tobacco related products from a tobacco company representative despite the ban on this practice? (if yes, go to question 23 If no, skip to question 24)

Yes
No

Have you ever been offered free cigarettes?
Yes
No

Campus Smoke-free Campaigns

How would you feel about a policy making this campus completely smoke-free…please check one

Strongly Support	Support	Not Support	Strongly Disapprove

If this campus implemented a policy making it completely smoke-free, would that influence your decision to attend?

No, it would not influence my decision in any way
Yes, I would be more likely to attend
Yes, I would be less likely to attend

How do you feel about the current smoking policies on campus?

Approve strongly
Approve somewhat
Disapprove somewhat
Disapprove strongly

Does your school require you to take a class that covers health and discusses the harms of smoking?

Yes
No
Do not know

Does your campus have resources to help students quit smoking?

Yes
No
Do not know

Rules about Smoking in Private Spaces

Which statement best describes the rules about smoking inside your home? Do not include decks, garages, or porches.

Smoking is not allowed anywhere inside your home
Smoking is allowed in some places or at some times

Smoking is allowed anywhere inside the home

Which statement best describes the rules about smoking inside your car?
Smoking is not allowed anywhere inside your car
Smoking is allowed in my car some times
Smoking is allowed in my car

Does smoking occur in your car when a minor is present?
Yes
No

Depression

During the past month have you often been bothered by feeling down, depressed, or hopeless?
Yes
No
During the past month have you often been bothered by little interest or pleasure in doing things?
Yes
No

Stress

In the last month, how often have you felt that you were unable to control the important things in your life?

___0=never ___1=almost never ___2=sometimes ___3=fairly often ___4=very often

In the last month, how often have you felt confident about your ability to handle your personal problems?
___0=never ___1=almost never ___2=sometimes ___3=fairly often ___4=very often

In the last month, how often have you felt that things were going your way?
___0=never ___1=almost never ___2=sometimes ___3=fairly often ___4=very often

In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
___0=never ___1=almost never ___2=sometimes ___3=fairly often ___4=very often

Smoking

Social Aspects of Smoking

Do you live with anyone who smokes cigarettes?
Yes

No

Are there children living in your household?
Yes
No

Did/does at least one of your parents smoke?
Yes
No

Harm of Smoking

Do you believe there is any harm in having an occasional cigarette?
No
Yes

Do you think that breathing smoke from other people's cigarettes is…
Not at all harmful to one's health
Not very harmful to one's health
Somewhat harmful to one's health
Very harmful to one's health

Alcohol and Smoking

How often do you smoke cigarettes while drinking alcoholic beverages?
Never
Rarely
Sometimes
Always

When you are consuming alcohol, what best describes your smoking level?
Less than usual
Slightly less than usual
About the same
Slightly more than usual
More than usual

Smoking Attitudes Scale

Please rate these statements using the following scale: (1=Strongly disagree to 7=Strongly agree)

I would not date a person who smokes.
I would marry a person who smokes.
I would object to living with a smoker.
I prefer not to spend a lot of time with people who smoke.

I would be willing to form a close friendship with a smoker.
Restricting smoking in public places is unfair to smokers.
Laws restricting smoking in the workplace are unfair to smokers.
People should have the right to smoke where and when they want.
Smoking should not be restricted by law in any way.
Nonsmokers should learn to be more tolerant of smokers.
People have a basic right to breathe smoke-free air.
Secondhand smoke is a legitimate health risk.
Employers should be required to provide a smoke-free work environment for their employees.
All forms of cigarette advertising should be illegal.
Cigarette companies should be permitted to advertise their products in any way they wish.
The sale of cigarettes should be outlawed altogether.

BRANCH FOR SMOKERS:

Smoking Behavior

Where do you smoke when you are in public?
- I smoke in a designated smoking area
- I smoke wherever I want

Which days of the week do you tend to smoke the most? (check all that apply)
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

On the days that you smoke, how many cigarettes do you smoke on average?

In the past 30 days, do you smoke:
- mainly when you are with people
- mainly when you are alone
- as often by yourself as with others
- not at all in the past 30 days

Nicotine Dependence

How soon after you first wake up do you smoke your first cigarette?
- Within 5 minutes
- 6-30 minutes
- 31-60 minutes

After 60 minutes

Quit Attempts and Readiness to Quit

On a scale of 0 to 10 with 0 being "not at all confident" and 10 being "extremely confident," assuming you want to, how confident are you that you can quit smoking (or not start if you don't smoke), starting this week and continue for at least one month?

On a scale of 0 to 10 with 0 being "I don't want to at all" and 10 being "I really want to," how much do you want to quit smoking cigarettes (or not start if you don't smoke)

During the past 12 months how many times have you stopped smoking for one day or longer because you were trying to quit smoking?

I have not tried to quit
Number of times (please state your best estimate)

What best describes your intentions regarding quitting? Would you say you…

Never expect to quit
May quit in the future, but not in the next 6 months
Will quit in the next 6 months
Will quit in the next month

Use of Assistance

Have you ever used any of the following methods to help you quit smoking? (Check all that apply)

I have never tried to quit smoking
I quit on my own, did not use anything
Nicotine patch
Nicotine gum
Nicotine lozenge
Other medications containing nicotine (inhaler, nasal spray)
Zyban/Wellbutrin/Bupropion
Chantix/Varenicline
Snus
E-cigarettes
Talk to a doctor or nurse for help with quitting
Talk to a counselor
Attended a class or group program
Telephone counseling
An Internet or online program
Other (Please describe: _____)

Smoking Motives Scale

Here are some things that people have said about smoking cigarettes or drinking alcohol (beer or wine). Circle a number (from 1 to 5) to show what you think.

Response points: (1) Not At All True, (2) A Little True, (3) Somewhat True, (4) Pretty True, (5) Very True.

Smoking helps you fit in with other people.
Smoking makes it easier to be sociable with others.
Smoking helps you enjoy a party.
Smoking makes social gatherings more fun.
Smoking makes you feel more energetic.
Smoking helps you concentrate on things.
Smoking makes you feel more self-confident.
Smoking makes you feel more sure of yourself.
You can smoke when there's nothing better to do.
Smoking is something to do when you're bored.
Smoking helps you forget about worries.
Smoking helps you calm down when you're feeling tense and nervous.
Smoking helps you when you're feeling angry.
Smoking makes you feel more relaxed.
Smoking cheers you up when you're in a bad mood.

Smoker Self-Concept

Response points 1=strongly disagree, 10= strongly agree

Smoking is a part of my self-image
Smoking is a part of "who I am"
Smoking is a part of my personality
Smoking is a large part of my daily life
Others view smoking as a part of my personality

Thank you for completing this survey!

Appendix F:

FOCUS GROUP MODERATOR'S GUIDE
University of Cape Town

I. INTRODUCTION

Good afternoon/evening and welcome to our session. Thank you for taking the time to join our discussion today about smoking. My name is Shana Narula and I am with the Rollins School of Public Health at Emory University.

You have been invited here today because you are enrolled at the University of Cape Town and because you agreed to participate in this focus group based on your interest in the study through flyers and my announcement in your classroom that has been surveyed. We are in the process of conducting research at UCT to inform our research to better understand smoking among young adults. We want to understand more fully (1) your patterns of smoking, attitudes towards smoking, motives for smoking, perceived consequences related to smoking, and barriers to cessation, (2) to understand the implications of the Tobacco Products Control Act and its amendments on your behaviors, patterns and attitudes on smoking.

First, we will begin by asking you to complete a survey and a questionnaire. Then, we will begin the discussion by asking you some questions and giving everyone a chance to respond. We need your honest opinions, so don't hold back! As far as we are concerned, there are no right or wrong answers – just different points of view. Please feel free to share your own point of view, even if it is different from what others in the group have already said. We would like to hear your opinions and encourage you to comment on things that other people

in the group say. This should be more of a discussion among you all than each of you just responding to my questions. It is important that we stay on topic though. That's my job here – to guide the discussion and keep everyone on track.

Before we start, I want to go over some GROUND RULES. We'll be on a first name basis today. We are also audio and video recording each focus group. The recordings will be transcribed and everything that is said in these groups will be typed out. We tape the group so we can come back later and remind ourselves what all of you said. We want to make sure that we get it right! Please speak loudly and clearly so that the microphone will pick up your voice. When we write up our report, we won't use your name or any other information that could identify you. No one will hear the recordings except the me involved with this project.

Next, only one person should talk at a time. Please try not to have separate conversations with your neighbor because it might be distracting and make it hard to hear whoever is talking.

Now, let's also talk about the importance of privacy. It is very important that we each respect one another and keep all that is said here confidential. This means that we are asking you not to tell anyone about anything that anyone says in this group. Although we cannot guarantee that everything will be kept confidential, we strongly encouraging you to respect the privacy of one another.

Our session will last about one hour with a short break if we need it.

Pause for questions.

II. CONSENT FORM

Okay, let's start by taking a few minutes to read more about this research. This is called a consent form. You should have two in front of you.

Hold one up.

The consent form describes the research that we are doing in detail and says that you volunteered to participate. There are no direct benefits for your participation except that you will be served lunch/dinner for your time and participation today. The risks of participating are minimal. The consent form also protects your privacy and lets you know that it is our intention that all information shared here today remains confidential. If you have any questions about the consent form, please raise your hand and I will be glad to answer them or help in any way. Also notice that there are some contact numbers listed on the consent form in the event that you have any questions in the future.

If, after reading the form, you decide not to participate, you'll be allowed to leave. If you agree and still want to participate, sign both forms at the end where it says "Participant's signature". I will pick up one copy and the other one will be yours to keep. I am going to take a minute to highlight some of the major points on the consent form right now.

Briefly review other main points aloud. Allow a few minutes to read and sign. Then collect all forms.

III. SURVEY COMPLETION

Now I need everyone to complete a brief survey. Please raise your hand if you have any questions regarding the survey, and I will assist you.

Pass out surveys. Be sure subject ID is listed on form.

Afterward, review the surveys to make sure they are complete in order to clarify with participants while they are still present.

IV. FOCUS GROUP DISCUSSION (60 minutes total)

LIFESTYLE AND SMOKING (5 minutes)

-How do you define a nonsmoker vs. a smoker?

-What about people who only smoke on occasion, like not every day?

-How do you categorize a smoker? Social smoker, occasional smoker?

-At what point do you consider someone to have "become a smoker?"

INTERVENTION STRATEGIES (20 minutes):

First, tell me a little about how you started smoking.

BARRIERS TO CESSATION

-What are some of your triggers for smoking?

-What are some things that make you concerned about quitting smoking or that get in the way?

MOTIVATORS FOR CESSATION

-What are some reasons that you might want to quit smoking?

QUITTING SMOKING

-Have you ever tried to quit smoking? If so, can you tell us about the experience?

-What prompted you to quit or try quitting?

-What is it like to try to quit smoking?

GENERAL INTERVENTION STRATEGIES

-What are the resources come to mind when you think about trying to get help with quitting?

SMOKE-FREE POLICIES (30 minutes):

PUBLIC BAN

-What do you know about the Tobacco Products Control Act that was initiated in 1993 and amended several times after in 1999, 2003, 2007, 2008?
(*Provide education to ensure understanding.)*

YEAR	POLICIES
1993	-Standards for manufacturing, importing and exporting tobacco -No smoking in public places -No sales to children under age 16 -Minister has power to make regulations -Regulations on advertising
1999	-No tobacco advertising, including sponsoring events -No distribution of free tobacco products -Reduce maximum yields of tar, nicotine and other ingredients in tobacco products -Increase fines -No smoking in workplaces and other public places
2003	-Introduce pictorial health warnings -Ban misleading descriptors ex: mild, light, low tar -Ban the sale of “duty-free” and “tax-free” tobacco products -Ban smoking in certain outdoor public places and within five meters of doorways and entrances
2007	-Further regulate smoking in public Places and outdoor places -Establish manufacturing standards for tobacco products -Increase fines
2008	-New requirements for packaging and labeling of products -No sale of tobacco to persons under 18 -Vending machines selling tobacco products must be in places where persons under 18 are not present -Minister may make regulations -Increase fines

2009	Laws from 2007 and 2008 were operationalized

-What do you think of the policies that went into effect?

-How has it affected your life? Where you go out? What you do? Your smoking?

-How harmful do you think secondhand smoke is?

-How concerned are you about exposing others to secondhand smoke?

CAMPUS POLICIES

-What are the rules here about smoking on your campus?
-What do you know about them?

-How do you feel about the current rules on campus?

-Would having a campus-wide smoking ban effect your decision to attend school here?
-Would you be more or less likely, or would it not matter?

-What campus-based programs are helpful in controlling tobacco use?

-Does your school have resources to help students quit smoking, if so can you tell me about them?

MEDIA/ADVERTISING

-How often do you see tobacco company advertising in magazines, billboards, and other print ads?

-Do you see more cigarette smoking in movies/TV or in actual print advertising?

-Have you ever been approached by a tobacco company representative and offered free products?
-If so, what have they offered you? Did you accept?

PRIVATE RESTRICTIONS

-How have the public restrictions impacted the rules in your home and car?

-How did you decide to implement restrictions in your home or car?

-What factors made you decide to implement these restrictions?

-How do you let others know about your rules?

-How strictly do you adhere to these rules?

-How do others respond to your rules?

-How do you respond to others asking you not to smoke?
-How does it change your smoking?

-How do smoking restrictions in others' homes impact you visiting them?

ENDING QUESTIONS: (5 minutes)

-Is there anything else that we did not mention today that you think are important for us to know?

Appendix G:

Focus Group Questionnaire

Date: ___ ___ / ___ ___ / 2 0 ___ ___
M M D D Y Y

1. What is your current age?
→Enter Age: [_][_]

2. What is your gender?
1 □ Male
2 □ Female

3. In the past 30 days, on how many of those days did you:

a. Drink alcohol:
→Enter # days: [_][_]

b. Drink more than 5 alcoholic drinks on one occasion:
→Enter # days: [_][_]

c. Smoke a cigarette (even a puff):
→Enter # days: [_][_]

d. Use some other form of tobacco, such as cigars or other smoking tobacco products (not including cigarettes):
→Enter # days: [_][_]

e. Use smokeless tobacco:
→Enter # days: [_][_]

4. On the days that you smoked cigarettes, how many cigarettes did you smoke on average?
→Enter # cigarettes: [_][_]

5. How soon after you first wake up do you smoke your first cigarette?
1 □ Within 5 minutes
2 □ 6-30 minutes

3 □ 31-60 minutes
4 □ After 60 minutes
5 □ Haven't smoked in past 30 days

6. IN THE LAST 12 MONTHS, how many times have you tried to quit smoking and were able to stay off cigarettes for at least 24 hours?

Enter #: [_][_]

7. Thinking about your entire LIFETIME, when you tried to quit smoking, what was the longest time you were able to stay off cigarettes, not having even a single puff?

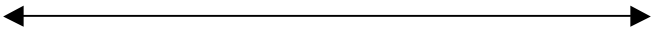
0 □ Never tried to quit smoking
1 □ Less than 24 hours
2 □ 1 - 7 days
3 □ 8 - 30 days
4 □ 1 month - less than 6 months
5 □ 6 months – less than one year
6 □ One year or more

8. What best describes your intentions regarding quitting?

1 □ Never expect to quit
2 □ May quit in the future, but not in the next 6 months
3 □ Will quit in the next 6 months
4 □ Will quit in the next 30 days
5 □ Haven't smoked in the past 30 days

9. So, using a scale of 0 to 10, where 0 is not at all important and 10 is extremely important, how <u>important</u> is it
to you that you quit smoking completely?

0 1 2 3 4 5 6 7 8 9 10

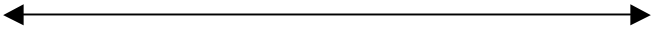


Not at all important **Extremely important F**

→CIRCLE **ONE** NUMBER.

10. Using a scale of 0 to 10, where 0 is not at all confident and 10 is extremely confident, how <u>confident</u> are you that you could quit smoking completely if you wanted to?

0 1 2 3 4 5 6 7 8 9 10



Not at all confident **Extremely confident**

→CIRCLE **ONE** NUMBER.

11. What would you say best represents your race or ethnicity?

1 □ White
2 □ African
3 □ Coloured
4 □ Indian
5 □ Other; Please specify:
6 □ Prefer not to answer

Thank you for completing this survey!

Appendix H:

Survey Consent Form:

UCT Smoking Survey Consent Information: (Posted on first page of online survey)

Title:
Effect of the Tobacco Products Control Act on Smoking Attitudes, Behaviors, and Patterns of University Students in Cape Town, South Africa

Principal Investigator:
This study is being conducted by Shana K. Narula, BS, MPHc, Department of Behavioral Sciences and Health Education, Emory University School of Public Health.

Introduction:
You are being asked to be in a research study. This form is designed to tell you everything you need to think about before you decide to consent (agree) to be in the study or not to be in the study. It is entirely your choice. If you decide to take part, you can change your mind later on and withdraw from the research study. The decision to join or not join the research study will not cause you to lose any benefits.

You are invited to be in a research study to understand university students in relation to their smoking, attitudes about smoking, and tobacco policies in South Africa. You were selected as a possible participant because of your enrollment as a student at the University of Cape Town. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

Purpose:
The scientific purpose of this study is to understand university students' smoking patterns, motives, and attitudes about smoking in relation to the tobacco policies in South Africa.

Procedures:
If you agree to be in this study, we would ask you to do the following things:
(1) complete a 10-minute survey assessing various lifestyle characteristics and attitudes about smoking and smoking restrictions.

Risks and Discomforts:
There are minimal risks associated with participating in the study. The time commitment required to complete the questionnaire is a concern. We have mitigated this concern by limiting the length of the survey.
There are no anticipated benefits to participation.

Compensation:
There will be no compensation given for the completion of this survey.

Confidentiality:

People other than those doing the study may not look at study records. Agencies that make rules and policy about how research is done have the right to review the study records. So do agencies that pay for the study. Those with the right to look at your study records include Emory University Institutional Review Board. Records can also be opened by court order. We will keep your records private to the extent allowed by law. We will do this even if outside review occurs. We plan to submit the results for publication and present them at research and educational conferences.

Withdrawal from the Study:
Your participation in this study is completely voluntary and you have the right to refuse to be in this study. You can stop at any time after giving your consent.

Questions:
Contact Shana Narula at uct.smoking@gmail.com:
• if you have any questions about this study or your part in it,
• if you feel you have had a research-related injury, or
• if you have questions, concerns or complaints about the research

If you have questions about your rights as a research subject or if you have questions, concerns or complaints about the research, you may contact the Emory Institutional Review Board at 404-712-0720 or irb@emory.edu.

Focus Groups
If you would like to be a part of a focus group that will investigate university students' smoking patterns, motives, and attitudes about smoking in relation to the tobacco policies in South Africa please contact:
Shana Narula at uct.smoking@gmail.com
A meal will be provided for the 1-hour focus group participants.

Focus groups will be held on the following dates in the Leslie Social Science Building room 6E:

THURSDAY, AUG. 5TH, 4PM
TUESDAY, AUG. 10TH, 12:30PM
THURSDAY, AUG. 12TH, 4PM

Consent:
If you would like a copy of this information, please print the first page for your records.
If you're willing to volunteer for this research, please sign below.

Appendix I:

Focus Group Consent Form:

Emory University School of Public Health
Consent to be a Research Subject

Title:
Effect of the Tobacco Products Control Act on Smoking Attitudes, Behaviors, and Patterns of University Students in Cape Town, South Africa

Principal Investigator:
This study is being conducted by Shana K. Narula, BS, MPHc, Department of Behavioral Sciences and Health Education, Emory University School of Public Health.

Introduction

You are being asked to be in a research study. This form is designed to tell you everything you need to think about before you decide to consent (agree) to be in the study or not to be in the study. It is entirely your choice. If you decide to take part, you can change your mind later on and withdraw from the research study. The decision to join or not join the research study will not cause you to lose any benefits.

You are invited to be in a research study to understand university students in relation to their smoking, attitudes about smoking, and tobacco policies in South Africa. You were selected as a possible participant because of your enrollment as a student at the University of Cape Town. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

Purpose

The scientific purpose of this study is to understand university students' smoking patterns, motives, and attitudes about smoking in relation to the tobacco policies in South Africa.

Procedures

If you agree to be in this study, we would ask you to do the following things:
(1) complete a brief survey; and (2) participate in a focus group interview with approximately 9 other university students discussing various aspects of university life and smoking. You will be audio recorded to aid in coding responses after the focus groups.

Risks and Discomforts

There are minimal risks associated with participating in this study. First, loss of privacy and confidentiality of the information obtained is a concern. However, participants will be assigned a study ID number, assuring that no personal identifying information will be linked directly with the survey data. A separate key linking survey ID to personal identifying information will be encrypted and stored off-line, and focus group data will be stored in a locked folder on a secure server accessible only to project staff. We will also discuss the need

for confidentiality among focus group participants in order to ensure that information shared during the focus groups is not shared outside of the interview. Second, the time commitment required to complete the questionnaire and the focus group is a concern. We have mitigated this concern by limiting the length of the survey and by restricting the length of the focus groups to 1 hour.

There are no anticipated benefits to participation

Compensation

You will receive a meal for participating in this study.

Confidentiality

Agencies and Emory departments that make rules and policy about how research is done have the right to review study records. In addition, records can be opened by court order or produced in response to a subpoena or a request for production of documents. We will keep any records that we produce private to the extent we are required to do so by law. We will use a study number rather than your name on study records where we can. Your name and other facts that might identify will not appear when we present this study or publish its results. The transcripts of the audio recordings will be kept locked in a protected folder until all of the focus groups have been transcribed into notes. A backup of the audio files will be kept until the end of the study and will be destroyed upon completion of the study.

Withdrawal from the Study

Your participation in this study is completely voluntary and you have the right to refuse to be in this study. You can stop at any time after giving your consent.

Questions

Contact Shana Narula at shanaknarula@gmail.com:

- if you have any questions about this study or your part in it,
- if you feel you have had a research-related injury, or
- if you have questions, concerns or complaints about the research

If you have questions about your rights as a research subject or if you have questions, concerns or complaints about the research, you may contact the Emory Institutional Review Board at 00-1-404-712-0720 or irb@emory.edu.

Consent

We will give you a copy of this consent form to keep.

If you're willing to volunteer for this research, please sign below.

_____

Name of Subject

_____ _____

Signature of Subject Date
Time