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Misguided Optimism Among College Student Smokers: Leveraging Their Quit-Smoking Strategies for Smoking Cessation Campaigns

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Abstract

College student smokers are a unique group who typically plan to quit smoking by the time they graduate, but few succeed and those who do require multiple attempts. This study examines the strategies of college student participants who successfully quit smoking. They tell a story of trial and error in achieving their goal—one that is more likely to end in another failed attempt than a successful effort unless they learn from past mistakes. Their stories not only show misplaced optimism for quitting but also ineffective smoking-cessation efforts.

“I just didn't want to die when I'm fifty-something years old for something as stupid as smoking.

“They say, “I only smoke only when I drink.”... This is crap. If you smoke, you smoke.

... I failed the first few times. I was so confident that I was done with smoking that I thought that I could smoke a cigarette and nothing would happen to me. It doesn't work that way.”

These are some of the comments of college student smokers who successfully quit smoking after several failed attempts. Years of exposure to antismoking messages taught them the health risks and gave them all the right reasons to stop smoking but not the tools for quitting. They misjudged the addictiveness of smoking and wrongly assumed that wanting to quit was enough. The American Legacy Foundation's slogan speaks of their plight: "wouldn't it be great if someone told you how to stop smoking instead of just why?"

As college student smokers typically begin to smoke in high school or earlier (**Jessor 1998**), most have already been habitual smokers for a number of years. Furthermore, most start smoking in the belief that they will quit, usually by the time they graduate from college. Yet, the annual success rate for quitting is less than 5% (**National Institutes of Health 2006**). One study among high school seniors found that 60% of those who smoked 1–5 cigarettes per day believed they would not be smoking in five years; however, five years later only 30% had quit and 44% increased cigarette consumption (**Slovic 2001**). Another five-year study funded by the **Canadian Cancer Society (2008)** found that 70% of teen smokers expressed the desire to quit, but only 19% succeeded for 12 months or more.

Smokers who try to quit often relapse, and the more often they do, the more difficult they perceive it is to quit (**Romer, Jamieson, and Ahern 2001**). This makes it imperative from a public policy perspective to discover why some students succeed and others fail, and what strategies are effective in order to better serve this audience.

As college student smokers approach graduation, they are at a cross-roads in which they either continue smoking—perhaps throughout their entire lifetime—or they attempt to quit. The belief that they are still young enough to quit makes them prime candidates for smoking cessation campaigns; however, the underestimation of their addiction and the lack of insight into effective quit strategies work against their chances for success. One logical path for discovering effective quit-smoking strategies that could be used for cessation campaigns is to gain insights into the experiences of college students who tried to quit and succeeded.

Using a qualitative approach to gain insight into the realities of college-student smoking behavior, this study attempts to understand what drives students to stop smoking and to evaluate the quit strategies they use, in the hope of finding meaningful ways to communicate with this audience. It first considers the problem of smoking, seeks insights from theoretical models, addresses cessation initiatives, and then organizes the data around a set of research questions. Finally, it concludes with leverage points from the student perspective to enhance the effectiveness of smoking cessation campaigns directed at this group.

THE PROBLEM

Tobacco use has been identified as the single largest preventable cause of death and disease in the United States, leading to an estimated 440,000 deaths each year and an annual cost of \$158 billion (**U.S. Department of Health and Human Services 2004**). Of the 44.5 million adult smokers in the United States, more than 70% want to quit and 40% make a serious effort to quit each year, but fewer than 5% succeed in any given year (National Institutes of Health 2006). Furthermore, those who succeed often require 8–11 attempts at quitting (**Institute of Medicine 2007**). The low success rate is blamed on a number of factors including, among others, the addictiveness of the product (**World Health Organization 2003**), the public's underestimation of both the risks and the addictiveness of smoking (**Slovic 2001**), inadequate insights into the needs of audience members (**Rotfeld 1999**), and the lack of access to effective treatment programs (NIH 2006; **Wall Street Journal 2006**). NIH findings show that smoking cessation interventions and treatments such as nicotine replacement therapy (NRT), telephone quit-lines, and counseling are effective, particularly when supported by economic strategies such as increasing the cost of tobacco products and reducing out-of-pocket costs for cessation programs. Yet, smoking

cessation interventions and treatments are underutilized and not always available to people who need them the most (NIH 2006).

The national percentage of people who smoke is 21 (CDC 2007a), which is significantly higher than the Healthy People 2010 goal of 12% by the year 2010 (USDHHS 2000). A dramatic reduction in smoking may be well within reach of states with low smoking rates such as California at 15%, but difficult for states that have high rates such as Kentucky at 29% (CDC 2007b). Utah is the only state that has already reached the goal with a rate of 10%.

Smoking is a health risk for all individuals but can be especially problematic for college students, who are in the age group with the highest smoking rates (24% of 18–24-year-olds smoke compared to 10% of those 65 years or older, according to the CDC 2007a). In part, the high percentage among college students is the result of high smoking rates among adolescents, with adolescent smoking rates peaking in the early to mid 1990s and college student smoking rates peaking at 44.5% in 1999 for those who smoked at least once in the last 12 months. After 1999, the rate for college students steadily decreased to 30.9% in 2006 and has remained at that level ever since (**Johnson et al. 2008**). Two factors work in favor of a continued decline in smoking rate among college students. They generally have lower rates of smoking and other drug usage than their age cohorts who are not in college, and the declining smoking rates among high school students may carry over to their college years (**Johnson et al. 2008**). However, other factors work against a continued decline. Students often turn to cigarettes as a way of reducing the stressful transition to college life, which comes at a time when they have greater freedom from parental control to make their own choices about smoking (**Emmons et al. 1998; Patterson et al. 2004**).

WHAT WE KNOW FROM THEORY

Tobacco use is considered the leading preventable cause of death and disease in the United States (USDHHS 2004). Yet, smoking is a difficult addiction to overcome. Various risk models have identified key factors needed for behavior change to avert risk. Though they give varying weights to different components, they share many of the same concepts.

Protection Motivation Theory (**Rogers 1975, 1983**), the Health Belief Model (**Rosenstock 1991**), and the Extended Parallel Process Model (**Witte 1994**) are three risk models that address variables needed to persuade at-risk people to change their behavior, including quitting their use of cigarettes. Some variations exist; however, each model argues that people must personally feel vulnerability to the consequences of smoking in order to make a behavior change, whether the consequences are psychological (e.g., social rejection) or physical (e.g., addiction, disease, and death). Further, they must believe that the consequences of smoking are severe, that they are capable of quitting (self-efficacy), and that quitting will effectively remove or lessen the risk (response efficacy). Finally, they must conclude that the benefits of quitting outweigh the costs of smoking and must learn to deal with the barriers to quitting (e.g., they must identify triggers that tempt them to smoke and learn how to address them). On the basis of these models, students will not attempt to quit smoking unless they believe that the consequences of smoking can affect them personally, they are capable of quitting, and quitting removes the danger. If they try, they won't succeed unless they believe they are better off as a nonsmoker and know how to effectively deal with temptations.

Underlying the risk models is the assumption that fear can be an effective motivator. In the case of students, the belief that they are vulnerable to the consequences of smoking must generate some amount of fear in order to motivate change. However, fear has proven to be a troublesome concept. **Rotfeld (1988)** notes that advertising research into the relationship between fear appeals and persuasion has been plagued by three erroneous assumptions: 1) a severe threat consistently produces a high degree of fear, when in fact messages presumed to generate high levels of fear may not have been fearful to subjects at all, 2) persuasion depends upon an “optimum” level of fear, most likely in an inverted-U relationship, and 3) data collected to understand the role of

fear in human behavior is applicable to mass media contexts. He concludes that these false assumptions have misdirected the research, and instead of searching for the optimum level of fear, researchers should ask “how the mere presence of a fear-inducing message influences learning, attitudes and/or consumer decision-making” (Rotfeld 1988, 34). Preston (2009) echoes this thought in his reminder that what is said is not necessarily what is understood because “meanings are in people, not in messages.”

Psychologists caution that any communication strategy directed at changing behavior must avoid messages that are perceived as judgmental or a threat to personal freedom (Brehm 1966; Brehm and Brehm 1981). Otherwise, reactance behavior occurs in which people are likely to rebel and become more entrenched in the undesirable behavior as they attempt to restore their freedom. As college students belong to a group who has recently gained greater freedom from parental control (Emmons et al. 1998; Patterson et al. 2004), they are not likely to give up their new freedom willingly. They are likely to rebel against messages they perceive as attacks on their freedom to smoke.

Psychologists have also identified biasing factors that can affect evaluation of risk perception (Branstrom, Kristjansson, and Ullen 2005). One such factor is optimism bias—a tendency for people to misjudge their own susceptibility to positive/negative events. According to Weinstein (1980, 1987, 1999), people tend to underestimate their vulnerability and think others are more likely to be victims of misfortune than themselves. The more undesirable the event, the stronger the tendency is to underestimate their chances of experiencing it (Weinstein 1980). Similarly, people are overconfident about their chances of experiencing a positive event, and the more desirable the event, the stronger the tendency is for overestimation. Underestimation of risk has been demonstrated in a wide array of age groups and for numerous health-related outcomes including lung cancer, HIV infection, alcoholism, and smoking (Klein and Weinstein 1997; Weinstein 2001), and can lead to maladaptive behavior because one is unlikely to take the necessary precautions against a potentially harmful outcome (Klein 2008).

Smokers of all ages believe they are less likely than peers to become addicted to cigarettes (Cohn et al. 1995), but college students may be particularly prone to optimism bias given the belief that they are “bulletproof” (Wolburg 2001). When rating their chances for developing smoking-related illnesses, smokers thought they were only “a bit higher” than average when in fact their actual risk of developing lung cancer is as much as 10 times that of a nonsmoker (Weinstein 2001). Despite smokers’ acknowledgement of a higher risk for life threatening illnesses, one study found they were as optimistic as nonsmokers that they would live beyond the age of 80 (Grant and Job 2000).

SHORTCOMINGS OF SMOKING CESSATION CAMPAIGNS

Like other social marketing campaigns, smoking cessation initiatives have the common goal of discouraging harmful behavior and encouraging positive behavior (Andreasen 1994). Social marketing campaigns have attempted to solve a wide variety of social problems including drinking (Agostinelli, Brown, and Miller 1995), smoking (Farrelly et al. 2002), drug use (Kelder et al. 2000), obesity (Vranica 2003), and skin cancer prevention (Huncharek and Kupelnick 2002), to name a few. However, the effectiveness of social marketing campaigns sometimes falls short of expectations. Some simply fall flat because they ask people for behavior change that they are unwilling to do despite knowing the risks (Rotfeld 2001). Others have triggered boomerang effects (Ringold 2002), which have largely been attributed to reactance (Brehm and Brehm 1981). Examples of boomerang effects include increased drinking by college students in response to antidrinking campaigns on college campuses (Wechsler et al. 2003) and cigarette smoking as an act of defiance among college student smokers in response to antismoking messages (Wolburg 2006).

Antismoking campaigns in the United States have informed audience members that smoking over a lifetime carries a great health risk and that quitting minimizes that risk. On the surface, two of the necessary factors for behavior change (knowledge of severity and belief in response efficacy) are already in place. However, this may not be the case as research shows many inconsistencies in smokers' understanding of the severity of the risk. Many are not aware of the addictiveness of smoking (**Lundborg 2007**), nor do they realize that young smokers can show evidence of dependence within days or weeks of smoking (**DiFranza et al. 2000**). Further, without the belief in personal vulnerability and self-efficacy, smokers are unlikely to succeed in quitting. College students are unlikely to feel personally vulnerable to the effects of an addictive substance (**Weinstein 2001**), and without that belief, self-efficacy is likely to be an irrelevant concept because students will believe that quitting is easy.

Some antismoking messages have emphasized the severity of the consequences but neglected the other factors, as though the barriers to quitting are minimal and the perceived benefits of quitting automatically outweigh the costs, even though smokers find many benefits to smoking, particularly stress relief. Also, when messages arouse fear without bolstering self-efficacy, smokers are likely to resort to ineffective means such as denial of the problem (**Witte 1994**).

Most explanations for the low success rates for cessation programs have included the belief among teens that adverse health consequences are simply too far in the future (**World Bank 1999**). However, **Lundborg (2007)** suggests that another compelling explanation is smokers' underestimation of the addictiveness of cigarettes, which increases their likelihood of initiating smoking. Cigarette smoking takes place one cigarette at a time, and although young smokers know that years of smoking carries a high health risk, they believe that they can "get away with some lesser amount of smoking before the risk takes hold" (**Slovic 2001, 109**). Young smokers believe that smoking for only a few years poses a negligible risk; in fact, they are more likely to believe in the safety of short-term smoking than nonsmokers in their age group, and they perceive occasional smoking as much lower in risk than drug and alcohol use (**Romer, Jamieson, and Ahern 2001**).

Also, the role of emotion is not thoroughly understood when evaluating one's perception of risk. **Viscusi (1992)** argues that young smokers are well informed about the risks of smoking and are able to operate rationally on the information they have. However, **Slovic (2001, 109)** argues that a shift to affect-based, experiential thinking can turn "rational actors" into "rational fools." When young smokers make decisions based on feelings, they use an "affect heuristic," which leads to an inverse relationship between perception of risk and benefits (**Fischhoff et al. 1978**). Those who see little to no benefits of smoking are likely to regard it as risky; however, those who have positive associations with smoking experience more positive affect, which, in turn, diminishes their perception of risk (**Fischhoff et al. 1978**).

Ironically, product advertising for cigarettes can associate positive emotions with smoking, but antismoking campaigns have had little effect on countering those emotions. Antismoking campaigns have been shown to "increase the perception of risk, but because imagery and feelings [from cigarette advertising] contribute more heavily to smoking initiation than does perception or risk, this effect is too small to have much impact on its own" (**Romer and Jamieson 2001, 129**).

WHAT ONLINE AND OFFLINE CESSATION PROGRAMS OFFER

Many colleges and universities have developed both offline and online smoking cessation programs for student smokers. According to a survey of health directors at 393 four-year universities across the United States, 40% of schools offered some type of smoking cessation program (**Wechsler, Lee, and Rigotti 2001**).

Typical offline approaches for many schools include establishing smoke-free residence halls and offering programs through student health facilities where students who want to quit smoking can initiate the process. At the university associated with this study, when students are seen for any health-related visit, they are asked

whether or not they smoke as part of a general screening, which is followed by a question that asks smokers if they want to quit. Answering “yes” prompts further questions about whether they want to receive information about quitting, how they want to be contacted, whether they are interested in using nicotine replacements, etc. Students who want to quit have various options, such as meeting with a physician's assistant on a regular basis or downloading information on quitting. The available online resources utilize existing material from outside programs rather than uniquely designed materials for the university. They include the American Lung Association Smoking Cessation Support, the American Cancer Society Guide to Quit Smoking, the Wisconsin Center for Tobacco Research & Intervention (which is housed at the University of Wisconsin-Madison but serves the entire state of Wisconsin), the Tobacco Control Resource Center for Wisconsin, the Quit Line (1-800-QUIT NOW) and Tobacco Free U.

Many other universities use a similar approach by combining services available on campus with online cessation programs that originate from multiple sources. These programs communicate information differently across sites, making some more user-friendly than others. Sources of online cessation programs include nonprofit organizations, government organizations, health organizations, treatment centers, pharmaceutical companies, sites that sell NRT products, and tobacco companies. To date, only Philip Morris has its own online cessation program; other tobacco companies refer visitors to government websites or online programs supported by health organizations.

Most online sites offer detailed statistical evidence of the health risks associated with smoking but may not offer strategies that resonate with college students. Finding the right leverage point is important, such as the need among older smokers to protect their children (**Netermeyer, Andrews, and Burton 2005**). Likewise, finding the right leverage point for college students is important to the success of cessation strategies for them.

METHOD

With this knowledge base, a qualitative study was designed to investigate the strategies used by college students who successfully quit smoking. The first two research questions probe for an understanding of how they decided to quit and what strategies worked/failed to work. Formally it asked the following questions:

“RQ1: How do college students who successfully quit smoking arrive at the decision to quit?

RQ2: Which strategies do they find effective in their efforts to quit? Ineffective?

Because various resources are devoted to creating advertising messages for antismoking initiatives and smoking cessation campaigns, the next research question probes for an understanding of the role these messages play from the perspective of college student smokers. The study asks the following:”

“RQ3: To what extent do students attribute their success in quitting to antismoking or smoking cessation messages in the media?

Given the different perspectives from risk models and psychological theories, it is necessary to know whether the participants’ comments lend support to these perspectives. Formally, it asks the following question:”

“RQ4: How do the students’ decision processes and quit strategies fit with theoretical models in risk communication and psychology?

Finally, given the need for effective advertising messages within cessation campaigns, it is important to understand whether cessation programs are currently incorporating messages that are relevant to students’ needs. Therefore, the study asks the question:”

“RQ5: How well do the students’ strategies for success compare with those offered through online cessation programs?”

Participants were students at a private, Midwestern university who answered a call for former smokers from fliers posted on campus. They were offered \$10 for a one-hour, depth interview with the researcher, which was tape recorded and later transcribed by a graduate research assistant. Participants were screened to include only those who formerly smoked at least a pack of cigarettes per day and had quit for more than one month. They also met the criteria used by the CDC's National Center for Chronic Disease Prevention and Health Promotion (CDC 2007c), which classifies former smokers as those who had smoked more than 100 total cigarettes in their life and do not currently smoke.

A discussion guide of broad topics (**Morrison et al. 2002**) was prepared by the researcher, and participants were first asked to think about the time when they began smoking in order to provide a broad starting point for the interview (**McCracken 1988**). After the participants elaborated on their early smoking behavior, they were encouraged to talk about their decision to quit. Moving from the general to the specific, the interview addressed quit strategies—ones that were successful and ones that were not. Last, they were asked what role, if any, antismoking messages had in shaping their decisions to quit or in adding support through the quitting process. Though the interviews generally proceeded in this order, participants were given as much freedom as possible to make their own connections and to cover the topics in the order that was meaningful to them (**Morrison et al. 2002**). Fifteen participants completed the in-depth interviews.

Analytic induction and the constant comparative method were used to analyze data and generate common themes (**Glaser and Strauss 1967**). Highly consistent themes emerged early in the interviews, suggesting that the behavior patterns described were credible and dependable for this time and place (**Lincoln and Guba 1985**) and that they were sufficient to reach the point of redundancy (**Taylor 1994**).

In order to examine other forms of evidence that might offer insights (**Lindloff 1995**), three online cessation programs were examined for their quit strategies: 1) "Become an Ex" from the National Alliance for Tobacco Cessation—an alliance of 24 organizations including the Mayo Clinic and the American Legacy Foundation, 2) "Quit Assist" from Philip Morris, and 3) "Clearing the Air: Quit Smoking Today" from the Tobacco Control Research Branch of the National Cancer Institute, which also partners with the Centers for Disease Control and other government organizations. These three programs represent efforts from a nonprofit alliance, a tobacco company, and the U.S. Government.

FINDINGS

The Decision to Quit

RQ1 asked how students who are former smokers arrived at the decision to quit. The students' responses varied; however, all had some personal experience that reflected their feelings of vulnerability and their fear that the consequences would be severe if they didn't quit, which are two of the key elements identified in the risk models. For these students, fear was an effective motivator.

I'm afraid that I'm no longer in control. For one international student, the realization that he was addicted to cigarettes created such fear and anxiety that he vowed to quit. Smoking two packs per day made him feel so dependent upon cigarettes that he had to have a pack with him to sleep at night.

"It was very scary. I was sleeping with the cigarettes at my head sometimes... I would skip lunch and have a box of cigarettes with me... I would go to the library and couldn't stay focused for like an hour... I was controlled by smoking. It was really that bad. It was hindering my intellectual capabilities because I couldn't sit in a chair and read something without thinking about cigarettes (Raphael)."

Feeling out of control was evidence of addiction to others as well. Several could barely get through a class without a cigarette, and one was very bothered by the fact that she had to avoid spending time with her parents

because she couldn't make it through an evening without a cigarette. Like most students in the sample, she hid her smoking behavior from her parents.

I'm scared that my health is at risk. Although not all college students experience ill effects from smoking, most of these participants quit after a health scare. One student quit after receiving the news that a friend had been diagnosed with emphysema. Others didn't have severe symptoms but noticed certain limitations when biking, climbing stairs, etc.

“I couldn't ride my bike as much. I couldn't go hiking as much as I wanted to. Everything I wanted to do, I was feeling the physical effects of smoking and I decided that's enough (Matt).”

One of the heaviest smokers was diagnosed with asthma. She quit temporarily but gradually began smoking again, only to have the asthma symptoms become more severe than before. In retrospect, “that's the scariest feeling ever, to not be able to breathe.”

Time is running out. Compounding the fear and the sense of vulnerability to an addictive substance is the feeling that there is a narrow window of opportunity for quitting. The participants feared that if they didn't quit then, they might never succeed. Their vulnerability to serious health consequences including death would only increase over time.

“I was a senior in college and I was about to make a transition into the real world—into the adult working world. I thought if I didn't quit now, maybe I'd be a smoker for the whole rest of my life (Lee).”

“I just didn't want to die when I'm fifty-something years old for something as stupid as smoking (Jessica).”

Several other factors were important including feelings of exploitation, lack of identification with smokers, and the expense. Although they were not the primary reasons for quitting, they added to the disadvantages of smoking in any cost/benefit analysis.

I don't want to feel exploited by tobacco companies. For one student, the feeling that time was running out became a nagging worry, especially as he was still smoking at age 23 despite his expectation that he would quit by the time he was 21. The frustration was compounded by the belief that he was being exploited by tobacco companies, which eventually became intolerable.

“I don't want to be the target of marketing campaigns to get me to spend money on things I shouldn't. The cool factor just isn't worth it (Kyle).”

I don't identify with smokers anymore. One student saw a change in the way he viewed smokers. When he first began to smoke he saw smokers as “cool,” but over time he noticed that people who held positions he aspired to were nonsmokers. Others characterized smokers as weak people who couldn't handle stress. These students developed such a negative attitude that they lost respect for smokers and could no longer identify with them.

“There's almost an image just being out in the professional world. When I think of a smoker I think of someone... who has this crutch, this bad habit that they have to fall back on. Whatever's stressful, whatever's going on, they have this little weakness. They have to turn to cigarettes. I think it sends a negative perception. I didn't want to be labeled a smoker and have people think any less of me (Lee).”

It's not how I want to spend my money. Finally, students recognized the expense of smoking, despite the fact that few quit for that reason alone. They believed that a heavy smoker would always find the money; however, when coupled with other negative factors, it becomes significant.

“I figured it out. I am spending too much money on it. I was spending almost a half of month's rent to smoke (Matt).”

Failed Efforts

RQ2 asked what specific strategies proved effective versus ineffective. Despite their awareness of personal vulnerability and the fear that they would suffer serious consequences, none of the participants were successful in their initial efforts and required three or more attempts before succeeding. The fact that they attempted to quit before speaks of their belief in response efficacy and their belief that they are capable of quitting. However, the risk models predict that success will be elusive without an understanding of the barriers to quitting and a cost/benefit analysis that favors quitting.

I didn't want to quit badly enough. The lack of motivation and commitment proved to be a fundamental problem. Intellectually and rationally, they knew they should quit, but they didn't expect to miss the pleasures of smoking so greatly. They found an emotional attachment to smoking that made the benefits and pleasures of smoking so intense that they exceeded the benefits of quitting.

“... quitting smoking is one of those things that you really have to want to do first, and a lot of people who fail for the first few times and go back to smoking (me included) really didn't want to in their head. Yeah, they know it's bad for them, but they didn't really want it that badly (Matt).”

I underestimated the difficulty. Students didn't expect the barriers to be so great and that quitting would take multiple attempts. A strong recurring theme through all accounts was optimism bias (**Weinstein 2001**), given that most students underestimated the addictiveness of smoking as well as the difficulty of the task of quitting. One of the most common reasons that quitting the first time didn't work was that students thought that they could get away with taking some minor risks—that it was safe to have an occasional cigarette.

“That's how I failed the first few times. I was so confident that I was done with smoking that I thought that I could smoke a cigarette and nothing would happen to me. It doesn't work that way (Raphael).”

Resuming smoking after a period of abstinence also changed their perception of themselves and challenged their thinking that smoking was a process of one cigarette at a time (**Slovic 2001**). The single act of smoking one cigarette was enough to transform the way they saw themselves; they went from being a nonsmoker to a smoker again.

I thought I could quit on impulse. Virtually all of the failed efforts lacked sufficient planning and were impulsive, spur-of-the-moment acts that were not well thought out. Because students lacked a plan, there was no anticipation of times or places that would trigger the desire to smoke.

“A lot of people get so frustrated with their smoking and say, “this is my last pack of cigarettes. I'm not going to smoke tomorrow. Whatever.” Well that's probably not the best approach. It certainly didn't work for me and I don't know anyone it has worked for (Lee).”

I was lying to myself. Others lived in a state of denial and didn't acknowledge they were smoking again until they purchased their own cigarettes.

“... first, it was only every other day and it was only bumming. Three weeks later, four weeks later, I bummed from everybody all the time. Then I decided to buy a pack, and leave it where I work—or somewhere I can only get it when I am here. And then I started carrying it around. I was telling myself I'm not starting smoking again, but really I was (Jessica).”

Another form of optimism bias came with the denial that they were smokers if they only smoke at certain times and places, such as at bar.

... they say, "I only smoke only when I drink." I've heard that a billion times since I came to college, and I think this is crap. If you smoke, you smoke (Matt).

I was overconfident and didn't make things happen. The students' underestimation of the difficulties played out in a number of ways. One of the most common problems was their lack of action. For example, none of the participants expected to be lifelong smokers, so they all started smoking in the belief that they would only smoke for a limited time. They were confident that they would no longer smoke by the time they graduated from college—certainly by the time they got their first job after college, got married, had children, etc. Specific markers for quitting included their next birthday, New Year's Day, spring break, Christmas break, and summer vacation. However, without a firm quit date, the plan to stop smoking was simply an idea that lacked definition and commitment. On their first attempt most students did little to make it happen and saw the day come and go without any lasting change in their behavior. Seeing another year go by as a smoker was a source of frustration for many that could potentially decrease feelings of self-efficacy by lowering confidence in their ability to quit.

"One thing that helps more than anything is to set a date far enough in advance. If you want to quit, if you say you want to quit today, next week—good luck. Because you've only had a week to prepare for that. You need to give yourself more time (Angela)."

Setting a quit date establishes a firm goal, but choosing the optimal date requires an understanding of rituals at different times of the year. One student noted that that nearly all his friends at home smoked, but very few of his friends at school did. Thus, he recognized that his original plan to quit over the summer was doomed and that he would encounter less peer pressure if he waited until classes started.

I didn't realize what times and places tempted me the most. Most of the failed efforts also revealed the inability to anticipate the power of certain situations to trigger the desire to smoke. Several participants commented on the ease with which smokers in residence halls or work situations could approach each other on breaks, even if they were strangers, because smoking was an instant bond that they shared. Losing the camaraderie and sense of community that come with the smoking ritual can be a powerful trigger to smoke again. But by far the most problematic situation for students was the bar scene. Not only were they surrounded by other smokers, but also many expressed such a close association between drinking and smoking that merely entering a bar would trigger a desire to smoke. Many of these participants had to quit going to bars in order to quit smoking.

"When I would go out with friends on weekends, I would be in the bars and there's a lot of smoking around you, a lot of temptations. And there were a few nights when I was not having fun because I wanted to smoke so bad. I just didn't want to be around the temptation so I told my friends that I had to leave. I would just go home and be by myself for a few weekends, but hey, that's what I had to do to quit smoking. I really, really wanted to quit at that point (Lee)."

Successful Strategies

RQ2 also asked what strategies the students found effective. The overriding strategy was learning from past mistakes, which essentially meant becoming more realistic and less likely to operate under a misguided optimism. In order to prepare for the next quit attempt, students had to gain some initial insights into their own behavior, renew their commitment to quitting, and develop a plan. They offered these strategies.

This time I thought about what I was doing and had a plan. One of the initial requirements for success was to understand the reasons for smoking in the first place, which ultimately led to a cost/benefit analysis. Most likely

the process described below allowed the student to conclude that the benefits of quitting outweighed the benefits of smoking.

“If you really want to quit something that is a habitual—an addiction—you really have to think about all the reasons why you want to quit, all the reasons you started it, all the reasons you want to get rid of this, things that you can do in place of this behavior... You really have to think through all the things (Angela).”

This time I got professional help. Quitting usually meant careful planning by setting a quit date, getting rid of any cigarettes, and readjusting one's mental attitude. Seeing a smoking cessation counselor helped by providing a sense of accountability.

“Finally, I decided to quit by my 22nd birthday in October, and I really, really set my mind to it. I thought about all the other times that I tried to quit smoking before, made a list of all the reasons I want to quit smoking, actually went to student health services, and the physician's assistant became my support system. Once a week, I would go see this guy and it gave me a sense of accountability. I knew that if I smoked, I would have to tell him. Not only would I disappoint myself, but I would disappoint him. So on the day of my 22nd birthday when I woke up, I knew that was it. I didn't have any more cigarettes and I wasn't going to go and buy another pack (Lee).”

I got support from family and friends. Although only two participants sought professional help, the others found support from significant others. Telling others their intent to quit is potentially a double-edged sword because other smokers may not want to lose a fellow member of their community of smokers. However, most of the participants' friends and family were very strong “cheerleaders,” whether or not they smoked themselves. Nearly all of the participants believed they owed much of their success to the support of others, who not only kept their motivation high but held them accountable.

“I was telling everybody and that's something that helped me. What am I going to tell everybody if I started smoking again? (Raphael).”

One student, who relapsed after getting a cigarette from strangers, believed that if she had been with friends, she wouldn't have been able to bum that cigarette.

“I never wanted to start again. I never wanted to. I had that one cigarette that got me smoking again from someone who didn't know I quit... If I had been around any of my friends, they would have said “no way” (Jessica).”

A very influential supporter was a boyfriend/girlfriend. Some were nonsmokers whereas others were smokers who suggested they would quit together.

“Though the great support of my girlfriend, I was able to quit, even at a very difficult time. In the face of mid-terms, paper deadlines, I was under great stress. But thankfully I had people there to support me, even my friends who are smokers supported me, which for some reason I did not think they would (Andy).”

I got rid of temptations. Aside from gaining broad insights, having a plan and developing support systems, students needed specific tips. Identifying the temptations and getting rid of them was a simple but an essential step.

“The first time I quit smoking, I still kept extras (cigarettes, ashtrays, etc.) in my house for company. The second time I knew no one was going to smoke in my house. I went outside and I threw all the extras away—everything related to smoking. I didn't want any of it (Jessica).”

I planned whether or not to quit “cold turkey.” The participants also had to decide whether to quit all at once or to quit gradually, and whether to quit with or without NRT. Most of the participants decided to quit all at once and without NRT for a variety of reasons. Several regarded quitting on their own as a badge of honor and felt it was a sign of strength.

“... I did it myself cold turkey. No call service. No alternative. No nothing. I determined it myself, and I did it (Tom).”

Only one of the participants effectively used NRT, but he strongly endorsed it and attributed his success to it.

“The gum was the best thing ever. That was the key. It just made it a lot easier, so it wasn't a big temptation... I don't know how to describe it, but just you had enough nicotine that it's not appealing at all. Sometimes it's kind of disgusting. You don't want a cigarette at all... After dinner, after a meal, you have a piece of gum. And it works. I couldn't have done it without the gum (Ryan).”

I got more exercise. Several common-sense tips emerged including having candy or sunflower seeds to put in their mouth. Another was getting enough exercise. Several participants found that exercise helped get past difficult cravings, provided an activity to substitute for smoking, and also helped to prevent weight gain.

“... when I was studying in the library and getting really edgy and antsy, I would just get up and take a real quick walk around campus and blow off steam, avert that urge to go across the street and buy cigarettes (Lee).”

I enjoyed my success. Finally, the participants found simple pleasures in the benefits of quitting. Some focused on the money they saved while others concentrated on the health benefits or their regained senses of taste and smell. All of the participants were extremely proud of the accomplishment of quitting, but one spoke of the new feeling of power, which affected other areas of his life.

“Maybe it is just an incident in my life and it may sound stupid, but after I gave up smoking, some other things in my life became really successful in terms of my academic stuff. Quitting gave me so much power and a feeling that I can do a lot more. It may be just a coincidence... but I really associate it with quitting smoking (Raphael).”

Students' Take on Antismoking Campaigns

RQ3 asked to what extent students attributed their success to antismoking messages or smoking cessation messages in the media. Students were well aware of antismoking messages, and some found them attention getting but very few attributed a noticeable impact on their behavior. Though the participants' comments cannot confirm or deny **Romer and Jamieson's (2001)** conclusions about antismoking campaigns, they offer some support that antismoking messages fail to counteract the positive imagery and feelings created over years of exposure to cigarette advertising.

Regardless of the degree of accuracy the participants had in evaluating the role of these campaigns, it was of interest to see how they reconciled their behavior with the messages. Most acknowledged the obvious that as they were former smokers, the messages didn't prevent them from starting to smoke. Therefore, antismoking messages don't work. Interestingly, they didn't carry their logic any further because as they eventually quit, the messages might have had an effect after all. Instead, many reported a third person effect (e.g., that the campaigns had value in preventing others from starting to smoke but didn't influence them personally).

“Obviously the messages didn't do any good for me because I started to smoke. I think that maybe they do deter some kids from smoking, but far more effective than public service ads is how much more strict they've gotten about selling cigarettes to kids. You can't really walk into a convenience store as a 15 year

old and buy a pack of cigarettes, and granted, kids can only steal so many cigarettes from their parents without the parents saying, “hey, where are my cigarettes?” (Karen).”

One student believed that his participation in a smoking prevention program eventually influenced his decision to quit. As part of the Bodyguard Program in junior high school, he and other young teens talked about the dangers of smoking to children in kindergarten through 6th grade. Although his smoking didn't prevent him from participating in the program, he eventually couldn't reconcile his behavior as a smoker with that of a smoking prevention advocate, which fitted with literature on the presentation of self to others (**Goffman, 1959**) and cognitive dissonance (**Festinger 1957**).

“I was well educated in the ingredients and all the negative side effects of smoking, so that was one thing that really got me when I came to the realization to stop. I was in Bodyguard, so how do I let myself do this for, you know, two and half years? (Ryan).”

The strongest endorsement for antismoking messages came from a student who acknowledged that over a period of time, the ads made him confront what he was doing to himself through smoking.

“They're why I finally decided to finally quit smoking. It was kind of like this is a stupid thing. Smokers are dumb. I don't know a better way to put it. You just know you are basically killing yourself. The ads just push you to keep thinking about it (Ryan).”

Fitting Theory with Reality

RQ4 addressed the fit between participants' experience and the behavior predicted by risk models and psychological theories. Although their experiences generally supported the prevailing theories, their accounts provided additional insights into the ways the theories worked. For example, the participants' initial reasons for quitting identified two essential components of the risk models considered necessary for behavior change—the participants' fear of consequences from smoking and the realization that they were personally vulnerable. Thus, fear played an essential role; however, what most students feared most was not death but loss of control. Although they also feared disease and social rejection, death was far enough in the future (age fifty-something) that it was not an immediate cause for alarm. This supports **Rotfeld's (1988)** conclusion that it is essential to know what people genuinely fear rather than making assumptions about what constitutes high and low levels of fear for a given stimulus.

Students' early quit attempts also implied an underlying belief that quitting would remove the risks of smoking and that they were personally capable of quitting; these are the two efficacy factors identified by risk models. Over time they consistently maintained their belief that quitting would remove the risk, but with each additional failure, they began to doubt their ability to quit. It wasn't until they had several unsuccessful attempts that they initiated a plan.

Until they experienced the negative effects of smoking, students also lacked a favorable ratio for costs/benefits of smoking. As long as they found more benefits to being a smoker than a nonsmoker, they lacked the emotional engagement for quitting. Further, without insights into barriers, they were unequipped for dealing with temptations. Without these components in place, the participants continued to engage in various half-hearted, trial and error approaches.

The risk models serve well as a way of organizing the data provided by the participants. However, it is the psychological construct of optimism bias that provides the added insight into their behavior. Students' underestimation of the addictiveness of smoking and the time frame for becoming addicted explains not only their lack of fear of the consequences (**Rotfeld 1988**), but also their belief that they could be short-term smokers and quit by the time they graduate. Their overestimation of their ability to quit also accounts for their belief that

it was safe to smoke. In order to get serious about quitting, they had to lose their optimism that quitting was easy and come up with a plan that would fit the realities of the situation.

From the participants' accounts, those who succeeded in quitting had all the risk factors working in their favor and something to fear if they continued to smoke. They also lost their misguided optimism about the ease in quitting

Why Students Need Programs Tailored to Them

RQ5 asked how the cessation strategies offered by students compared with those promoted through various online sources—**“Become an Ex” (2007)** from the nonprofit alliance, **“Quit Assist” (2008)** from the tobacco industry, and **“Clearing the Air” (2008)** from the U.S. government. All online programs had extensive print materials that could be mailed, viewed online, or downloaded and printed. Further, they were highly consistent in their use of broad strategies—all included the need to plan carefully, get support of friends/family, seek professional help, set a quit date, identify triggers, discard tobacco and ashtrays, get exercise, and analyze costs/benefits. On the surface, they all had the potential to be an effective tool for the college student audience; yet, they lacked the specifics for resonating with them, particularly college student spokespersons. The level of interactivity of the sites, the type of engagement, the tone, and the ease in navigation also varied greatly across sites.

None offered programs specifically tailored to college students, despite the fact that one program offered targeted materials to other groups including smokers over the age of 50, recent quitters, African-American smokers, and Hispanic smokers. Most online sources featured testimonials of people who appeared older than students and had been smoking for a longer time. Many were in their late 20s and 30s, but also included were people in their 40s and 50s, perhaps in the belief that they could effectively be all-inclusive. Explanations for the lack of targeting of college students are admittedly speculative; however, the lack of tailored programs is most likely due to limited resources for multiple programs and the assumption that smoking cessation strategies can effectively cut across groups regardless of age and education.

Even though many of the strategies apply to college students, the social events and academic calendar that drive college students' schedules change the meaning of certain dates. Holidays such as Halloween and St. Patrick's Day are heavy drinking occasions on college campuses, and with heavy drinking comes heavy smoking. This is especially true for bars, which are favorite hangouts for students and are among the few public places where smoking is still permitted in many states.

For example, the Great American Smoke-out is a national event supported by the American Cancer Society that traditionally takes place on the third Thursday in November, one week before Thanksgiving. The timing of this event may be effective for the general population, but it is not well-suited for college students, whose weekends typically start on Thursdays and often include socializing at bars. Furthermore, students leave campus for the Thanksgiving break soon after the Great American Smoke-out and usually cope with a different set of triggers/temptations than that on campus.

Most online sources promoted NRT as part of the overall plan to quit smoking, which was not the method of choice for students in this sample. Without positioning NRT as an acceptable strategy for college students using spokespersons in their age range to deliver the message, students may reject this strategy.

Certain innovations may work well with college-age students. The “Quit Assist” program provided engaging videos of successful quitters who told their own stories, and “Become an Ex” offered a social network for people trying to quit. However, none of the participants in this study relied on any online sources, which might be the result of a lack of awareness, ineffectiveness in message strategy, inability to identify with those profiled, or some combination of the three. The lack of a targeted program to college students reveals a need that continues

to go unmet. However, it also means that an opportunity exists for creating a program that can improve the success rate of college student who want to quit smoking.

CONCLUSIONS

Life experiences and knowledge of the long-term risks of smoking gave these college student smokers the reasons to quit but not the drive, the knowledge of how to quit, the mental preparation, or a plan of action. Participants also lacked insights into the addictiveness of smoking, which left them unprepared for their lack of success in the early attempts. Very few participants acknowledged any influence from antismoking messages they encountered in the media, and most quit on their own without help from smoking cessation programs or NRT. Instead, they resorted to a process of trial and error that failed them in the early attempts and made their eventual success seem all the more remarkable.

This study adds to the existing literature by highlighting how clueless most college student smokers are about quitting, despite the availability of cessation programs and the fact that tobacco use is considered the single largest preventable cause of death and disease in the United States (**U.S. Department of Health and Human Services 2004**). Students experiment with various quit strategies in a random fashion with limited chances of success, given the addictiveness of the product.

This study also adds to the literature by identifying ways in which cessation campaigns can better serve this group of consumers with programs tailored to them. Cessation campaigns must not only be strategically placed to reach college students but use messages that resonate with them. No single social marketing message can communicate all elements, but cessation campaigns can deliver multiple messages over time to counter misguided optimism and to more realistically address the addictive nature of smoking. Tactics that incorporate humor can avoid judgmental tones, and storytelling by peers can sidestep negative perceptions of authoritarian, top-down communication that might elicit reactance. Messages should address the following points:

- Messages must counter false optimism by communicating the addictive nature of the product and the speed at which people become addicted. Messages from students who have already suffered the consequences of smoking may alert others to their own vulnerability and motivate them to quit now. However, communicating the addictive properties of cigarettes has paradoxical implications for policy. If young teens know that quitting will be hard, it may discourage them from starting to smoke, but it may also discourage smokers from trying to quit because they believe it is too difficult. **Romer, Jamieson, and Ahern (2001, 226)** suggest framing a message to accommodate both groups by saying: "Each cigarette makes it harder to quit, so don't start, and if you do smoke, stop now."
- Students need to believe in response efficacy and self-efficacy. Messages should use the quit strategies of students who succeeded in order to bring greater realism to the issue and to position quitting as possible.
- Students also need to believe that quitting benefits them more than smoking. Many find smoking very pleasurable, but messages from other students who can address the costs/benefits in a meaningful way can help shift the balance in favor of quitting. For example, many students anticipate entering careers in which they perceive smoking as socially unacceptable. Messages could tap into this belief that being a nonsmoker enhances their chances for success in their chosen careers. Images of people who are stressed out and no longer in control of their addiction can help to undermine the advertised images of smokers as "cool" and "relaxed."
- The majority of college student smokers plan to quit by the time they graduate. Campaign messages on campus should encourage all smokers, but especially seniors, to quit. One tactic is a campus-wide Smoke-out on a strategically chosen date that avoids school holidays, weekends, and heavy drinking occasions, (e.g. a Monday early in the fall semester). The date could be promoted using campus media

with stories of students who successfully quit. Tips for quitting told through storytelling should be a prominent part of the campaign.

- Most students are reluctant to use NRT or to seek outside help from professionals. In an individualistic society such as the United States, it is common to expect one's efforts to be successful, and discovering this is not the case can be perceived as a sign of failure. For many, a failed attempt is a sign of weakness, a belief that makes them reluctant to seek help. Messages should communicate that quitting is the goal regardless of how it is achieved and should also position seeking help as a sign of strength.
- Finally, behavior change requires insights into barriers. One mental barrier that students experience is the misguided optimism that they are not addicted if they smoke only in social situations. Physical barriers include places that trigger the desire to smoke. As the bar scene is the single most difficult place for students to quit, messages should encourage students to think of bars as off limits while they are trying to quit.

College student smokers are in transition to the next phase of their lives and are prime candidates for smoking cessation. Programs that incorporate the real stories and experiences of those who failed but didn't give up offer hope to a group of people who may be among the best candidates for quitting.

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