ROLE OF TOBACCO PROMOTIONS ON SMOKING

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Abstract

The major goal of the study was to examine the impact of tobacco promotions on smoking among African American college students. The study was conducted among undergraduate students (N=257) and incoming freshmen (N=287) in a Historically Black University. The variables in this study include gender, membership in athletic teams; membership in Greek organizations; staying in residence halls; tobacco promotion, cigarette smoking among family members; and cigarette smoking among close friends. Results of the logistic regression analyses indicate that predictors vary with the status of the students (undergraduates versus incoming freshmen) and nature of smoking (lifetime versus current smoking). The results of this study show that tobacco promotion is a statistically significant predictor of smoking among African American college students and that tobacco promotion has a more pronounced impact on current smoking than lifetime smoking.

Key Words: smoking; African American; historically black colleges and universities; tobacco promotions

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Role of Tobacco Promotions on Smoking among African-American College Students

Cigarette smoking is a major public health problem and continues to be the leading cause of death in the U.S. (CDC, 2009). About 1 in 5 deaths in the U.S is from tobacco use (American Lung Association, 2009). A significant segment of the U.S population uses tobacco in spite of its health consequences. For example, it is estimated that in 2008, 46 million (20.6%) of U.S. adults were current cigarette smokers; which is nearly one in every five people, of these 79.8% (36.7 million) smoked every day (CDC, 2008). The CDC report shows that the cigarette smoking trend for U.S. adults had declined from 24.1% to 19.8% for the period 1998 to 2007. However, this decade-long decrease has leveled off in recent years (CDC, 2009).

Prevalence of smoking varies by socio-demographic factors. In 2008, smoking prevalence was lowest for adults aged >65 (9.3%). Smoking prevalence did not vary significantly for adults aged 18-24 years (21.4%), 25-44 years (23.7%), and 45-64 years (22.6%). Significantly higher proportion of men were current smokers (23.1%) than females (18.3%). The prevalence of current smoking was highest among non-Hispanic American Indians/Alaskan Natives (32.4%), followed by non-Hispanic whites (22%), non-Hispanic blacks (21.3%) and Hispanics (15.8%). Asians had the lowest rate of 9.9% (CDC, 2009). The National Survey on Drug Use and Health (SAMHSA, 2007) based on combined data from 2005 and 2006 reported that “nearly one fourth of blacks aged 12 or older were current smokers (i.e., used cigarettes in the past month).” Certain subgroups of the population have higher prevalence rates. For example, a recent community based study found a high prevalence of cigarette smoking among low-income African Americans (Delva, et. al, 2005).

A CDC report on “African Americans and Tobacco Use” shows that approximately 45,000 African Americans die annually from preventable smoking related diseases (CDC, 1998). Further, research attributes smoking as the major reason for 87% of lung cancer incidence and studies also show that African American men are more likely to develop lung cancer than their white counterparts (American Cancer Society, 2001; CDC, 1998). Similarly, smoking significantly increases the risk for stroke, and it is documented that cardiovascular disease is one of the leading causes of death among African Americans (CDC, 1998; American Lung Association, 2008; 2009; blackhealthcare.com, 2008).

Studies show that African Americans start smoking at a later age compared to whites. Although the average age for initiation to smoking is higher for African Americans compared to Whites, they are more likely to be diagnosed with and die from lung cancer (CDC, 2005). One of the explanations for this disparity is genetic, it has been reported that African Americans are genetically predisposed to lung cancer because they tend to absorb more of the nicotine and other toxins in cigarettes than do whites (Perez-Stable, Herrera, and Benowitz, 1998).

Cigarette smoking among college students is a major concern for researchers, public health officials and university administrators. Because of the greater freedom associated
with college life, many students who never smoked while in high school may experiment with cigarette smoking. Further, intensive tobacco marketing aimed at this population may also increase the likelihood of smoking (Connolly, 2007; Balbach, Gasior, and Barbeau, 2003; Sepe, Ling, and Glantz, 2002). In 2005, 16.8 percent of African American high school students smoked some form of tobacco. However, African American high school students were significantly less likely than white and Hispanic students to report current smoking (CDC, 2006).

Previous studies indicate that African American college students have the lowest rates of smoking compared to any other racial and ethnic group (Johnston, O’Malley, and Bachman, 2001; American Lung Association, 2008). However, some studies predict that African-Americans in the age category of 18-24, will have higher smoking rates in the coming years (Patterson, Lerman, and Kaufmann, 2004). For example, the Harvard College Alcohol Study reports show that African American college students had a 42.7% increase in smoking between 1993 and 1999 which is the largest increase in smoking compared to white, Hispanic and Asian-Pacific Islander students (Patterson, Lerman, and Kaufmann, 2004).

TOBACCO PROMOTIONS

Age is an important factor in tobacco advertising and promotions. Young adults aged 18 to 24 years are the youngest legal targets of the tobacco industry, therefore, the tobacco industry advertises in magazines with high youth readership. Other strategies include sponsoring college social events conducted by fraternities and sororities (American Cancer Society, 2001; blackhealth care.com; Rigotti, Moran and Wechsler, 2005) and social events at bars and nightclubs where free samples of tobacco products are distributed (Sepe, Ling, and Glantz, 2002; Rigotti, Moran and Wechsler, 2005).

Studies show that young adults have the highest spontaneous quitting rates. Therefore the tobacco industry invests time and money to study their smoking patterns. Tobacco marketers also concentrate on recapturing the young quitters. Their goal is to get quitters back in the market place. So this group is often targeted for tobacco promotions and advertising (American Lung Association, 2007; Ling and Galantz, 2004).

In a recent Senate hearing, Connolly (2007) indicated that after the Master Settlement Agreement (MSA), tobacco advertising has been targeted to high-risk groups, including low income women and African Americans. This report indicates that during the period 1998-2005, on average, every youth in the United States was exposed to 559 tobacco ads and every adult female to 617 ads. During the same time, every African adult was exposed to 892 ads and every Hispanic adult to 605 ads. This is further evidence that African American communities have been aggressively targeted by the tobacco industry for their advertising and promotional campaigns.

Gilpin, White, Messer and Pierce (2007) examined the effects of receptivity to tobacco advertising and promotions in two longitudinal cohorts of adolescents over a period of six
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years. They found that adolescents who were willing to use a tobacco promotional item or had a favorite advertisement had higher odds of being an established future smoker. This study showed that there is a relationship between receptivity to tobacco advertising/promotions during adolescence and status as a current smoker six years later as a young adult.

Rigotti, Moran and Wechsler (2005) examined the relationship between students’ exposure to tobacco promotions at bars, nightclubs, campus social events and their smoking behavior. The sample for this study consisted of students from 119 colleges across the U.S. The results showed that exposure to tobacco promotions was greater in colleges in urban areas, in the South, and in major tobacco-producing states. Students who were exposed to tobacco promotions at a bar, nightclub or campus social event were more likely than unexposed students to be current smokers. The exposed students were also more likely than unexposed students to have smoked cigarettes or used a tobacco product in the past year.

In November, 1998, the attorneys general of multiple states signed a Master Settlement Agreement (MSA) with the four largest tobacco companies in the United States. The agreement states that cigarette companies may not target youth in the advertising, promotion or marketing of tobacco products (National Association of Attorneys General, 2000). King and Seigel, (2001) studied the trends in expenditure for advertisement of 15 brands of cigarettes and the exposure of youth to cigarette advertising in 38 magazines between 1995 and 2000. They found that overall spending decreased from 1995 to 1998, increased in 1999 and returned to pre-settlement levels in 2000. Similarly, Hamilton, Turner-Bowker, Celebucki and Connolly (2002) found that in the 19 magazines that were analyzed by them, the average monthly spending increased from 1998 to 2000. However following public pressure in 2000, the average spending decreased from 2000 to 2002. So, the MSA seemed to have had little effect on cigarette advertising in magazines with youth readership.

PREDICTORS OF SMOKING

Several researchers have tried to identify the predictors of smoking among youth (Horn, et. al, 2000; Morrell, Cohen, and Bacchi, 2005; Von Ah, et. al., 2005). Horn, Gao, Dino and Kamal-Bahl (2000) found the predictors of smoking and smokeless tobacco among adolescents to be gender (i.e., being male) and having friends who used tobacco.

Powe, Ross and Cooper (2007) examined the attitudes and beliefs about smoking and predictors of life-time smoking among African American college students. They found age, emotional benefits of smoking, having friends who smoked, and not being a member of a Greek organization to be significant predictors of life-time smoking for these students. Waters et al. (2006) found that social smoking was common among college smokers. In their sample which consisted of almost 93 percent Caucasian college students, lower physical and psychological dependence and higher social support are important predictors of social smoking among college students. Studies also found that gender is a predictor for smoking among college students. In a study on smoking in
HBCUs, it was observed that among college women, traditional African American cultural practices was associated with abstinence from smoking cigarettes (Laws, et. al, 2006). Residence, parental, and peer smoking were found to be additional factors for African Americans becoming lifetime smokers (Hestick, Perrino, Rhodes, & Sydnor, 2001).

The present study examines the predictors of life-time and current smoking among African American students. The major focus of this research is to examine the role of tobacco promotions on smoking among African American college students. The study also examines the smoking behaviors of college students and incoming freshmen (who just completed high school).

METHOD

The present study was conducted in a four year educational institution in rural Georgia. This institution is classified as an Historically Black College and University (HBCU). Sixty-eight percent of the student population at this institution is female and 91 percent are African-Americans. A majority of the students are in the age group 18-22 and about 45 percent of the students live in campus housing.

DATA COLLECTION

The study is based on data collected from undergraduate and incoming freshmen students. The data from undergraduate students was collected in the second and third weeks of April 2007. Classrooms were randomly picked from the Spring 2007 semester schedule which represents all majors. A student research assistant contacted the respective instructors in advance and administered the survey in a classroom setting (N=257). The Office of Student Affairs included a survey in the incoming freshmen orientation package. During a specified time slot on June 16, 2007, student research assistants went to the orientation, explained the objectives of the survey, and administered the survey in a group setting (N=286).

The undergraduate students were asked about their use of tobacco, alcohol, and marijuana; attitudes toward smoking; tobacco awareness; onset of drug use; tobacco promotions; and role of advertisement on smoking. A slightly modified version of the survey was administered to students during freshmen orientation for Fall 2007. Sample questions are: (1) Do you think that tobacco companies target the African American community? (2) Have you received tobacco promotions through the mail? (3) Do you think tobacco advertising, promotion, and marketing influences people to use tobacco products? (4) To what extent do you pay attention to cigarette ads and promotions in magazines? (5) How familiar are you with specific brands of cigarettes, such as Camel or Marlboro?
MEASURES

The following variables are included as predictor variables in this study: gender, membership in athletic teams; membership in Greek organizations; staying in residence halls; tobacco promotion, cigarette smoking among family members; and cigarette smoking among close friends. The tobacco promotion variable was measured using the question “Have you received tobacco promotions through the mail?” All of the above variables are measured using a dichotomous format. Incoming freshmen were not asked about their membership in Greek organizations and whether they stay in the residence halls because these questions are not applicable to them. An additional question was asked of incoming freshmen which was not included for college students: “how often do you attend religious services?”

The dependent variables (for college students and incoming freshmen) are “current smoking” (in the past 30 days) and “lifetime smoking.” “Life-time smoking” and “current smoking” were measured using the following questions: “Have you ever tried at least one puff of a cigarette?” “Did you smoke cigarettes in the past 30 days?” Both dependent variables are measured using a dichotomous format: “Yes” and “No.” Therefore, logistic regression was used to identify the predictors of smoking.

RESULTS

All the respondents in this study are African Americans. The results show that about 44 percent of college students and 31 percent of freshmen are female. Seventeen percent of college students are members of Greek organizations and 55 percent stay in residence halls. Twenty eight percent of college respondents reported that they are members of college athletic teams; while 63 percent of incoming freshmen reported that they were part of an athletic team in high school. The modal age group for college students is 20 to 21 years (41.3%) whereas the modal age category for incoming freshmen is 18 to 19 years (96.3%).

Fifty-nine percent of college students reported lifetime cigarette use, while 31 percent of incoming freshmen reported lifetime cigarette use. Fourteen percent of college students reported smoking in the past 30 days and eight percent of incoming freshmen reported smoking in the past 30 days. About 12 percent of college students reported daily smoking and less than one percent of incoming freshmen reported smoking on a daily basis. About 12 percent of college students reported using smokeless tobacco in their lifetime. Cigar smoking is more popular compared to smokeless tobacco; for example 26 percent of college students reported lifetime cigar use and a little over 7 percent reported cigar use in the past 30 days. Among incoming freshmen 9% and 3% reported lifetime cigar use and past 30 day cigar use respectively. However, less than one percent of incoming freshmen reported use of smokeless tobacco.

When college students were asked “my smoking habit increased since I started college,” about 17 percent responded “True”. Similarly, when college students were asked “what is the most popular drug of choice among your peers,” 10.5% identified tobacco products;
40.1% identified marijuana and 49.4% picked alcohol as the drug of choice among their peers. Slightly modified versions of the same questions were asked of incoming freshmen. For example they were asked “what is the most popular drug of choice among African American students?” About 5.3% reported tobacco products, 72.6% identified marijuana, and 22.1% reported alcohol as the drug of choice among African American students.

Almost two thirds (64%) of college students and incoming freshmen reported that tobacco companies target the African American community. Twenty nine percent of college students reported that they received tobacco promotions through the mail. One in ten incoming freshmen reported the same. Three fourths of respondents (76.3%) believe that tobacco advertising, promotion and marketing influences students’ use of tobacco products. A majority of respondents (76.2% vs. 89.4%) from both groups (college students and incoming freshmen) reported that they do not pay much attention to cigarette “ads” and promotions in magazines. More college students (32.4%) than incoming freshmen (24.7%) reported that they are very familiar with specific brand names of cigarettes. Finally, a slightly higher proportion of college students (56.5%) are aware of anti-smoking advertisements compared to incoming freshmen (47.3%).

The next question was whether tobacco promotion has any impact on smoking among students. Cross tabular analyses indicate that there is a statistically significant difference in smoking among college students but no relationship between tobacco promotion and smoking among incoming freshmen. Lifetime smoking among college students depends on whether they had received any tobacco promotions ($X^2 = 12.45$, df =1; $p< 0.001$). For example, among college students who received tobacco promotions, 38% reported lifetime smoking. The same relationship was also evident between tobacco promotions and cigarette smoking within the past 30 days ($X^2 = 47.92$, df =1; $p< 0.001$). Among college students who received tobacco promotions about 80% reported smoking cigarettes in the past 30 days. Further analyses also indicate that familiarity with specific brands of cigarettes is related to smoking for college students and incoming freshmen.

**PREDICTORS OF SMOKING FOR COLLEGE STUDENTS**

The dependent variables, lifetime smoking and smoking in the past 30 days, are dichotomous variables so logistic regression analysis was used to identify the predictors of smoking among college students and incoming freshmen. Table 1 shows the results of the logistic regression of predictors on lifetime smoking and smoking in the past 30 days among African American college students. Membership in Greek organizations; friends’ smoking; tobacco promotions; membership in athletic teams; and being male increases the chances of lifetime smoking among college students. For example, a respondent with membership in Greek organization (Odds Ratio (OR) = 4.13) is four times more likely to report lifetime smoking. Similarly having friends with history of smoking increases the chance of lifetime smoking by four times (OR=4.05). However, the respondents’ smoking in the past 30 days depends mainly on three factors, namely, tobacco promotions, friends with history of smoking and membership in Greek organizations.
Table 1 shows that respondents who received tobacco promotions are almost ten times (OR=9.95) more likely to smoke in the past 30 days than a respondent who did not receive tobacco promotions. Similarly, a respondent with friends who smoke cigarettes are eight times (OR=8.07) more likely to smoke in the past 30 days than a respondent who does not have friends with a history of smoking. Finally, respondents with membership in Greek organizations are six times (OR=6.22) more likely to smoke in the past 30 days than students without a membership in Greek organizations.

Table 1

Results of logistic regression analyses predicting lifetime and current cigarette smoking among African American college students

<table>
<thead>
<tr>
<th>Variable Smoking</th>
<th>Lifetime Smoking</th>
<th></th>
<th></th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>Exp (B)</td>
<td>B</td>
</tr>
<tr>
<td>Tobacco Promotion</td>
<td>0.77</td>
<td>0.35</td>
<td>2.15</td>
<td>2.30</td>
</tr>
<tr>
<td>Male</td>
<td>0.67</td>
<td>0.31</td>
<td>1.95</td>
<td>0.02</td>
</tr>
<tr>
<td>Athletic Team</td>
<td>0.92</td>
<td>0.37</td>
<td>2.52</td>
<td>-0.52</td>
</tr>
<tr>
<td>Greek Organization</td>
<td>1.42</td>
<td>0.50</td>
<td>4.13</td>
<td>1.83</td>
</tr>
<tr>
<td>Residence Hall</td>
<td>0.26</td>
<td>0.31</td>
<td>1.29</td>
<td>0.73</td>
</tr>
<tr>
<td>Family Member Smoking</td>
<td>0.33</td>
<td>0.41</td>
<td>1.40</td>
<td>0.11</td>
</tr>
<tr>
<td>Close Friend Smoking</td>
<td>1.40</td>
<td>0.38</td>
<td>4.05</td>
<td>2.09</td>
</tr>
</tbody>
</table>

PREDICTORS OF SMOKING FOR INCOMING FRESHMEN

Table 2 shows the results of the logistic regression analysis predicting life-time and current cigarette smoking among incoming freshmen. The predictors of lifetime smoking for the incoming freshmen were quite different from the predictors for college students. Friends’ smoking was the only significant predictor of lifetime smoking. Among incoming freshmen, respondents who had friends’ with a history of smoking are almost nine times (OR = 8.68) more likely to report lifetime smoking. Further analysis shows that two variables were significant predictors of “past 30 day” cigarette use. Males were twice (OR = 1.91) as likely as females to report smoking in the past 30 days.
Respondents who had friends with a history of smoking were three times (OR = 2.98) more likely to report smoking in the past 30 days.

Table 2

Results of logistic regression analyses predicting lifetime and current cigarette smoking among African American incoming freshmen

<table>
<thead>
<tr>
<th>Variable</th>
<th>Lifetime Smoking</th>
<th>Current Smoking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
</tr>
<tr>
<td>Tobacco Promotion</td>
<td>0.21</td>
<td>0.46</td>
</tr>
<tr>
<td>Male</td>
<td>0.65</td>
<td>0.31</td>
</tr>
<tr>
<td>Athletic Team</td>
<td>0.23</td>
<td>0.30</td>
</tr>
<tr>
<td>Attend Religious Activities</td>
<td>0.02</td>
<td>0.07</td>
</tr>
<tr>
<td>Family Member Smoking</td>
<td>-0.55</td>
<td>0.39</td>
</tr>
<tr>
<td>Close Friend Smoking</td>
<td>1.09</td>
<td>0.36</td>
</tr>
</tbody>
</table>

DISCUSSION

The current study examines the predictors of smoking among African American college students and incoming freshmen. Results indicate that predictors of smoking vary with the status of the students (college students versus incoming freshmen) and nature of smoking (lifetime versus current smoking). For example; the study shows that predictors of lifetime smoking are different from the predictors of current smoking. The most significant finding of this study is the role of tobacco promotions on smoking among college students.

The effect of tobacco promotions on smoking among African American college students has not been addressed in previous studies. The results of this study show that tobacco promotion is a predictor of smoking among African American college students and that tobacco promotion has a more pronounced impact on current smoking than life-time smoking.
The present study shows that there is a relationship between tobacco promotions and smoking among African American college students. This finding supports previous research which showed that the tobacco industry targets the college population through various promotional strategies to attract them to smoking (American Cancer Society, 2001; Sepe, Ling, and Glantz, 2002; King and Seigel, 2001). Tobacco companies advertise heavily in minority populations, especially in the African American communities (Connolly, 2007). There have not been adequate programs to counteract the effect of tobacco advertisement, especially on college campuses. For example, in a Congressional Black Caucus Foundation study, 70% of respondents from HBCUs reported that they had never seen an anti-smoking message on campus (Bediako and Toldson, 2007). Research also clearly shows that African Americans suffer heavily from cancer and other cardiovascular diseases due to tobacco smoking (American Cancer Society, 2001; 2009; CDC, 1998). Therefore the finding that African American students who received tobacco promotions are about 10 times more likely to report current smoking (in the past 30 days) than students who did not receive tobacco promotions has implications for the health status of African Americans.

Consistent with previous studies, friends’ smoking and membership in Greek organizations are significant predictors of African American college students’ smoking. The findings of this study show that it is important to organize assertive training programs to help students resist peer pressures. Tobacco industries are eager to sponsor events in minority communities and institutions (CDC, 1998; American Lung Association, 2008; blackhealthcare.com; 2000), especially in Historically Black Colleges and Universities (HBCU). Therefore HBCUs need to weigh the benefits of such sponsorships with the health status of the community. Another interesting finding is that smoking of close family member(s) did not have statistically significant effects on respondents’ smoking for college students and incoming freshmen. This finding is consistent with other studies on smoking in HBCUs (Horn, et al., 2000; Laws et al., 2006). It is natural to argue that when students are in college the influence of family decreases and peers play an important role. In the present study, even for the younger cohort (incoming freshmen) smoking among close family members was not a significant predictor of smoking. Traditionally, family and religion play an important role in adolescence, especially among African Americans. Future studies should address the comparative role of family and friends on the smoking behaviors of African American college students.

References


