

Misestimation of Peer Tobacco Use: Understanding Disparities in Tobacco Use

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Blacks experience disproportionately elevated rates of tobacco-related morbidity and mortality. Blacks experience delayed smoking initiation relative to other racial/ethnic groups, highlighting the importance of examining smoking correlates occurring in late adolescence/early adulthood.

The current study reports data collected as part of an ongoing collaborative effort to assess alcohol and drug use on the campuses of historically black colleges and universities (HBCUs). Two-thousand, two-hundred, seventy-seven African-American subjects, aged 20.3 ± 3.9 (range 18–53), completed the CORE Alcohol and Drug survey and a brief demographic questionnaire.

Results indicated that 90% of all subjects overestimated the rate of smoking among their peers. Overestimating was associated with a >80% increase in the risk of smoking.

These data highlight the need to correct misinformation regarding smoking norms among students at some HBCUs.

Key words: tobacco ■ health disparities ■ African Americans ■ knowledge, attitudes & beliefs ■ historically black colleges and universities

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INTRODUCTION

Social norms for smoking, including peer smoking patterns and perceived tobacco use acceptability, have been shown to be strong predictors of adolescent and young-adult smoking behaviors.¹⁻¹¹ Evidence suggests that some racial/ethnic minorities may be more influenced to smoke by strong social norms. Dornelas et al.¹² observed in a sample of adolescents that blacks were twice as likely as whites to report smoking as a mechanism to bond to a social group and to increase functioning in a social environment. These and other findings¹³⁻¹⁵ suggest that efforts to understand the influence of social norms on tobacco use may be particularly useful in gaining insight into patterns of smoking and related disparities in smoking-related morbidities among young blacks.

Compared to both whites and Hispanics, blacks exhibit higher rates of smoking initiation but lower rates of transition to regular smoking.^{7,16} Despite lower rates of regular smoking and fewer cigarettes per day, blacks extract more nicotine per cigarette/smoked, potentially offsetting any potential gains associated with lower smoking frequency.¹⁷

The college years may be critically important in the development of smoking habits in students who are experiencing the transition from adolescence to adulthood.^{18,19} College students may experiment with smoking during this time, and those who have previously experimented may increase their smoking frequency.²⁰ Because tobacco use among college students is thought to be associated with other problems, including alcohol use, lowered sense of well-being, depression and life dissatisfaction, understanding smoking patterns during this period can be difficult.²⁰

Some studies of other health behaviors (e.g., problem drinking), have reported that increased alcohol consumption may be influenced by college students' perceptions that their peers are engaging in drinking behaviors (descriptive norms), perhaps as a function of the student's perceptions that the behaviors are approved by

their peers (injunctive norms).^{21,22} Other studies have evaluated such perceptions as correlates of tobacco use in diverse populations.^{11,23,24} An often large discrepancy between perceived peer tobacco use (descriptive norms) and actual tobacco peer use has also been shown among college students.^{10,25} Lastly, there is evidence that risk of tobacco use varies as a function of ethnicity and race, particularly among adolescents.²⁶⁻²⁸

To date, we are unaware of other studies that have explored the influence of perceived peer tobacco use on risk of tobacco use in blacks. Further, little is known about the tobacco use patterns of black students attending a historically black college or university (HBCU). The current study evaluated tobacco use patterns and risk of tobacco use among black college students as a function of their perception of campus tobacco use norms.

METHODS

Data Collection

The current study was part of a larger cross-sectional investigation designed to evaluate substance use and health behavior patterns among black full-time undergraduate students at 11 HBCUs in the southeastern United States. Of 11 HBCUs that were invited to participate, eight were ultimately enrolled in the study. The three remaining institutions cited concerns about their limited research infrastructure (e.g., human subject's committees, administrative support for research) as reasons for their nonparticipation.

Students were recruited for participation through campus seminars and other university-based activities. After providing informed consent, participants completed the Core Alcohol and Drug Survey,²⁹ an anonymous self-report questionnaire battery that targeted demographic characteristics, psychosocial functioning and tobacco use behaviors used as part of the larger investigation. Of 2,321 students completing the survey, we excluded 36 who did not answer either of the smoking use outcome questions, leaving 2,285 students [864 male (38%), 1,421 female (62%)] from eight institutions, with an average age of 20.3 ± 4.0 (range 17–53). The sample characteristics are consistent with state and

national HBCU enrollment data (College Foundation of North Carolina. Comparative View—My CFNC. In: Xap Corp. Available at <http://secure.ncmentor.org/CompareView/default.asp>; 2004.).

MEASURES

Tobacco Use

Participants were asked to report the number of days during which they had used tobacco (specified as “smoke, chew or snuff”) over the previous 30-day period. Seven possible response options were provided, ranging from “0” to “all 30 days.” Individuals reporting tobacco use in all of the past 30 days were assigned to the “daily tobacco use” category. They were compared to participants who used tobacco on: 1) <30 days or 2) not at all in the last 30 days. Those who reported tobacco use in any of the last 30 days were assigned to an “any frequency of use” group. These participants were compared to subjects who had not used tobacco products in any of the last 30 days. Participants were asked how often they believed the “average student on campus uses tobacco.” Response options included: did not use, once/year, six times/year, once/month, twice/month, once/week, three times/week, five times/week and every day.

We used generalized estimating equation regression models with a binary distribution to account for the clustering of participants within universities. This approach handles the nonindependence of students within universities better than standard adjusting for university approaches. Analyses were conducted using SAS[®] version 9.0 (SAS Institute Inc., Cary, NC).

RESULTS

Eighty-three percent of the sample reported that they had not used tobacco in the past month (n=1,864). Given that <30% of students reported tobacco use on any campus in the study, the “average student on campus” does not use tobacco for each institution. As such, any participant reporting that the average student uses tobacco with any frequency (use “once/year” to “every day”) would overestimate tobacco use on campus and was classified as an overestimator. Participants reporting the average

Table 1. Odds of tobacco use by accuracy in estimating tobacco use on campus

	OR (95% Confidence Interval)
Tobacco Use in Last Year	
Accurate (crude)	6.49 (4.05–10.39)
Accurate (age and gender adjustment)	6.42 (3.78–10.90)
Tobacco Use in Last 30 Days	
Accurate (crude)	5.64 (3.46–9.21)
Accurate (age and gender adjustment)	5.47 (3.22–9.29)

student on campus does not use tobacco were thus classified as an accurate estimator. Given the distribution of the tobacco use data, students could not underestimate tobacco use on campus.

Ten percent of the sample accurately estimated the rate of tobacco use on their campus ($n=222$), while 90% overestimated the rates of tobacco use on campus ($n=2004$). Males and females (10.6% vs. 9.5%, respectively) were similarly accurate in estimating the rates of tobacco.

Subjects who overestimated the rates of tobacco use on their campuses were nearly 6.5 times more likely (OR=6.49, 95% CI: 4.50–10.39) to have smoked in the past year and >5.5 times more likely (OR=5.64, 95% CI: 3.46–9.21) to have smoked in the past 30 days. In an age- and gender-adjusted model, subjects who overestimated the rates of tobacco use were >6 times more likely (OR=6.42, 95% CI: 3.78–10.90) to have smoked in the past year and >5 times more likely (OR=5.47, 95% CI: 3.22–9.29) to have smoked in the past 30 days (Table 1).

DISCUSSION

There is growing literature that addresses the tendency of many college students to perceive that others are engaging in the use of both legal and illegal substances (descriptive norms) as a function of their perception that the substances are approved by their peers (injunctive norms).³⁰ To our knowledge, the current study is the first to apply the principle of injunctive norms, or evaluating the degree to which a behavior is perceived to be socially accepted by peers, to understanding tobacco use patterns among black college students. Our findings demonstrated that: 1) the vast majority of African-American students overestimated tobacco use rates among their peers; and 2) overestimating the rates of peer tobacco use was associated with a substantially greater risk (>70%) for tobacco use in the past month and year. Risk of tobacco use remained elevated after adjustment for participant age and gender. Based on the current results, we concluded that the propensity of African-American college students to view “everyone else as tobacco users” may contribute to their own tobacco use and elevated rates of adult tobacco-related morbidities.

Cigarette smoking remains a major preventable cause of premature morbidity among blacks.^{31,32} However, accurate information, which is thought to be the mechanism for changes in perceptions of the risks of smoking, has seemingly not filtered effectively to young adults and college students of diverse cultures and backgrounds.³³ Advanced education-based strategies for reducing the incidence of smoking and general substance use among adolescents and young adults have focused primarily on offering information on smoking morbidity and related mortality but, at best, have been mildly effective.^{7,34,35} Often lagging behind advances in tobacco marketing, advances in prevention education

have yielded only semi-effective systems through which information on the ills of smoking can be delivered.

It is possible that the tendency for such a large number of subjects to overestimate campus tobacco use rates may facilitate the perception that tobacco use is a pervasive, normalized behavior. Based on our findings, educational content utilized in tobacco use prevention programs may benefit from communicating more accurately the “true” prevalence of tobacco use in the target population or setting. Particularly among college students, we believe that disseminating contextually relevant tobacco use prevalence data may assist students to more accurately estimate how many of their peers use tobacco.

The cross-sectional nature of our data do not allow for study of the mechanisms through which perception of campus norms for tobacco use influence tobacco use behavior. However, several potential mechanisms may be at work. Students who are experimenting with tobacco and believe that its use is highly prevalent may also be using tobacco as a vehicle to “fit in” or connect socially with other students. Students who are regular smokers and are contemplating quitting may not be getting the necessary cessation support, perhaps because they believe that their peers are also smoking.

LIMITATIONS

We note several potential limitations to generalizability of the current findings to other college populations. These data were collected on blacks attending college at HBCUs. We believe that this may limit our ability to generalize from these results to blacks who do not attend college, those who attend a historically white institution or majority populations. We believe, however, that the generalizability of this study can be evaluated indirectly by considering the prevalence of tobacco use among other college student populations. The 15.8% 30-day rate of tobacco use found among participants in this study is comparable to that found in similar investigations. Rigotti et al.,³⁶ for example, reported a 15.9% prevalence of 30-day tobacco use among black college students in 1999, although it should be noted that these participants were primarily sampled from majority institutions.

As we noted in a previous study using similar data,³⁷ these data were collected using cross-sectional methodology. We believe that this limitation is adequately balanced by their ability to yield an understanding of relevant factors that influence tobacco use among blacks attending a HBCU. To our knowledge, this investigation constituted the largest studied sample of African-American young-adult HBCU students. While notable, it is unfortunate that the HBCU context and its population of >228,000 have been largely overlooked in the investigation of factors related to tobacco use and other health behavior practices among African Americans. Given the delayed initiation, recent resurgence in tobacco use

prevalence and widely disparate rates of tobacco-related mortality among African Americans, our findings highlight not only a potentially important correlate but also uncover a virtually untapped context for the implementation of intervention and prevention efforts.

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