

## RESEARCH BRIEF

### Summer Employment and Tobacco Use among College Students

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#### ABSTRACT

**Background:** Research has shown that tobacco use among college students is influenced by the social environment, especially among a subset of smokers known as social smokers. Although many college campuses now have tobacco-free policies that could restrict social use of tobacco products, these policies often do not extend to common places of summer employment for college students that have similar social environments. Currently, no recommended tobacco policy exists for such summer programs, and little research has been done to assess their need.

**Methods:** The objective of this study was to examine trends in tobacco use among the college-aged summer employees of a non-profit organization. Participants included the college-aged summer employees of a seasonal non-profit organization based in the Appalachian region from May through August 2015. At the beginning and end of the summer employment period, an online cross-sectional survey was distributed to each eligible staff member to examine trends in tobacco use.

**Results:** Among the 60 follow-up respondents, 22.8% (n=13) reported an overall increase in tobacco use over the summer, while 3.5% (n=2) reported a decrease in tobacco use and 73.7% (n=42) reported no change.

**Conclusions:** These results indicate that college students are at risk of increasing their tobacco use during summer employment. There is a need for further research into the role of summer workplace influences on tobacco use among college students.

**Key words:** tobacco, college students, social smoking, summer employment

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#### INTRODUCTION

Over the past decade, “social smoking” has been identified as a phenomenon among young smokers, especially those in college. Definitions of social smoking vary and include “those who smoke almost exclusively in social situations”<sup>1</sup> and “those who most commonly smoke while partying or socializing”.<sup>2</sup> Using the latter definition, a study of college smokers at a large Midwestern university found that 70% of current smokers in the sample reported social smoking. Additionally, many of the respondents did not self-identify as smokers, despite having recently smoked.<sup>2</sup> Similarly, in a study of eight U.S. colleges, 56.3% of students who reported past 30 day use of cigarettes did not identify as smokers.<sup>3</sup> Social comparison theory suggests such young adults may think of themselves as “social smokers” as a means of mentally distancing themselves from the negative images commonly associated with smokers.<sup>4</sup>

Although social smoking research among young adults is fairly new, tobacco industry marketing documents have discussed this phenomenon for over 30 years.<sup>5</sup> The tobacco industry estimates that social smokers account for 20-25% of all smokers across a wide range of ages, socioeconomic backgrounds, levels of education, and ethnicities, yet much of their marketing efforts target young adults.<sup>5</sup> The industry documents identify young adults aged 18-24 who are undergoing a transition period, such as entering a new workplace or school setting, as a group highly susceptible to changes in tobacco consumption and target their marketing efforts accordingly.<sup>6</sup>

Social smoking poses two main concerns. First, nondaily social smokers are at risk of transitioning into daily smokers. Although the majority of social smokers do not believe they will continue smoking outside of the college environment,<sup>7</sup> studies have found otherwise. A 2005 study that traced smoking behavior

in a cohort of non-frequent college smokers found that after 4 years, 44% had quit smoking, 35% were still smoking on occasion, and 20% had transitioned to daily smoking.<sup>8</sup> Second, even low levels of cigarette smoking are a cause for concern.<sup>9</sup> Studies have shown that nondaily smoking increases the risk of disease, especially cardiovascular disease and lung cancer.<sup>10</sup>

In 2009, the American College Health Association officially recommended that all colleges and universities strive for a 100% tobacco-free environment.<sup>11</sup> As of 2015, at least 1,130 American college campuses had 100% tobacco-free policies in place.<sup>12</sup> These tobacco-free policies, however, often do not extend to common places of summer employment for college students. Each year, the youth labor force peaks during the months of April to July, especially for seasonal industries like recreational and summer camps.<sup>13,14</sup> The American Camp Association reports that 76% of camp staff are between the ages of 18 and 25, an age range that aligns closely with the age of most college students.<sup>15</sup> Although these summer programs usually do not take place on college campuses, they may create a similar social environment in which employees of similar ages work and live together.

While existing research outlines social trends in tobacco use among college students, little research has focused on tobacco use during summer employment. Like in college, the environment of summer programs may encourage social smoking and the social use of other tobacco products. This may be especially likely in areas of the country where tobacco use is common. Appalachian Ohio, for example, has marked rates of cigarette use.<sup>16</sup> Furthermore, the tobacco policies of these summer programs and camps vary widely, and no recommended tobacco policy exists. As such, the objective of this study was to examine trends in tobacco use among college-aged summer employees based in Appalachia in an effort to guide future policies for similar summer programs.

## METHODS

### Setting:

The study population consisted of the college-aged summer staff of a non-profit organization based in Appalachia during the summer of 2015. During the initial training period and the post-summer wrap-up period, all staff were housed in the same facility. For the remainder of the summer, staff were assigned to 30 different facilities throughout 5 states.

### Design:

Pre-summer and post-summer questionnaires were developed through Qualtrics software. The two questionnaires were identical, except for 3 follow-up questions only included on the post-summer questionnaire. As these questionnaires did not collect identifying information, pre-summer and post-summer responses were not individually linked. Instead, the two questionnaires were independent cross-sectional surveys.

### Participants:

Staff were identified from a list provided by the organization, which included the names and email addresses of 135 staff. Nine of these individuals were year-round employees and were excluded from this study. Two other individuals refused employment prior to the start of the summer and were also excluded. The remaining 124 summer staff were contacted via email by a study investigator.

### Procedures:

Each eligible summer staff member received a total of 4 emails from a study investigator. During May 2015, a recruitment email was sent that briefly described the study and included a link to the online questionnaire. A reminder email was sent several weeks later. During August 2015, the link to a similar post-summer questionnaire was again sent, along with a final reminder email several weeks later. The study methods and questionnaires were approved by the Institutional Review Board at The Ohio State University.

### Measures/outcomes:

The questionnaires assessed basic demographics, including age, race, sex, highest level of education to date, college major, and position within the organization (e.g., first year staff, center director). Tobacco-use items were based on well-validated items commonly used in the field.<sup>17-18</sup> Ever-use of cigarettes, e-cigarettes, cigars/cigarillos, hookah, and smokeless tobacco (SLT) were each assessed with an item asking about using even one or two times (e.g., "Have you ever tried cigarette smoking, even one or two puffs?"). Participants were also asked about age at first cigarette. Only those reporting smoking at least 100 cigarettes were asked about current use, defined as smoking every day or some days. For the remaining tobacco products, only those reporting ever-use of a product were asked about current use. Two questions assessed participants' perceptions of their own smoking behavior ("Do you consider yourself a smoker?" "People who smoke more commonly in social situations are sometimes referred to as social smokers. Do you consider yourself a social smoker?"). In the post-summer questionnaire, participants were asked "In general, how did your level of tobacco use change this summer?" (Increased, Decreased, or Stayed the same).

### Statistical analysis:

STATA was used to calculate descriptive statistics. Frequency distributions were performed separately for each pre-summer and post-summer variable.

## RESULTS

A total of 63 participants responded to the pre-summer questionnaire, yielding a response rate of 50.8%. In the post-summer survey, there were 60 responses for a response rate of 48.4%. For both questionnaires, the age of respondents ranged from 18 to 26, and the average age of the sample was 20.5 (Table 1). Both samples were also primarily female (63.5%, 68.9%) and white (96.8%, 95.1%), which is representative of the broader population of employees at this organization.

At baseline, 46.8% of respondents reported ever-use of cigarettes, 14.5% reported ever-use of e-cigarettes, 40.3% reported ever-use of cigars or cigarillos, 37.1% reported ever-use of hookah, and 16.1% reported ever-use of SLT. In the post-summer questionnaire, 48.3% were ever-users of cigarettes, 18.6% were ever-users of e-cigarettes, 52.5% were ever-users of cigars or cigarillos, 39.0% were ever-users of hookah, and 13.6% were ever-users of SLT. Current use of tobacco was low in this sample, ranging from 0% for e-cigarettes to 4.8% for cigars or cigarillos at pre-summer, and 1.7% for e-cigarettes and 16.7% for cigars or cigarillos at post-summer. The average age at first cigarette was 18.1 at pre-summer and 18.6 at post-summer.

In the post-summer survey, 22.8% of respondents reported an overall increase in tobacco use over the summer, whereas 3.5% reported a decrease in tobacco use and 73.7% reported no change. Additionally, of the 9 respondents who reported smoking a cigarette in the past 6 months at baseline, 0% self-identified as a smoker. However, 69.2% of these individuals identified as social smokers under the definition "smoking more commonly in social situations."

Table 1: Demographics of Young Adult Workers, 2015

	Pre-Summer, Mean (SD) or n (%)	Post-Summer, Mean (SD) or n (%)
Respondents, N (Response Rate)	63 (50.8%)	60 (48.4%)
Age	20.5 (1.6)	20.5 (1.5)
Sex		
Male	23 (36.5%)	19 (31.2%)
Female	40 (63.5%)	42 (68.9%)
Race		
White/Caucasian	61 (96.8%)	58 (95.1%)
Mixed Race/Multiple Categories	1 (1.6%)	2 (3.3%)
Other	1 (1.6%)	1 (1.6%)
Hispanic		
Yes	1 (1.6%)	2 (3.3%)
No	62 (98.4%)	59 (96.7%)
Position		
First Year	30 (48.4%)	31 (51.7%)
Returner	15 (24.2%)	11 (18.3%)
Center Director	13 (21.0%)	14 (23.3%)
Support Staff	4 (6.5%)	4 (6.7%)
Educational Status		
Rising freshman or sophomore in college	13 (21.0%)	13 (21.7%)
Rising junior in college	20 (32.3%)	19 (31.7%)
Rising senior in college	18 (29.0%)	19 (31.7%)
College graduate	9 (14.5%)	8 (13.3%)
Other	2 (3.2%)	1 (1.7%)
College GPA		
>3.5	31 (51.7%)	37 (61.7%)
3.0-3.5	19 (31.7%)	16 (26.7%)
<3.0	10 (16.7%)	7 (11.7%)
Annual Household Income		
<\$70,000	11 (22.4%)	12 (26.1%)
\$70,000 to \$99,999	8 (16.3%)	6 (13.0%)
\$100,000 to \$149,999	16 (32.7%)	14 (30.4%)
\$150,000 or more	11 (22.4%)	12 (26.1%)
Prefer not to respond	3 (6.1%)	2 (4.3%)

## DISCUSSION

While numerous studies have examined the role of social smoking among college students, this study extends the research by looking at college-aged youth in a summer employment setting. Findings indicated that 22.8% of our follow-up sample reported that they increased their tobacco use during their summer employment. In terms of ever-use, the most common tobacco products were cigarettes and cigars, followed by hookah, e-cigarettes, and SLT. In terms of smoker identification, while none of the participants self-identified as a smoker, about 70% of recent smokers identified as social smokers.

Compared to previous studies that assessed tobacco use among college students, a higher percentage of respondents in the present sample reported ever-use of cigarettes, while a smaller percentage reported current use.<sup>19</sup> The prevalence estimates for ever and current use of cigars and cigarillos were much higher in the sample than in other studies, while percentages were lower than expected for e-cigarette and SLT use.<sup>9,20</sup> Although cigars are traditionally viewed as a product used primarily by older men,<sup>8</sup> cigar or cigarillo use was the second highest category for ever-use in the pre-summer survey and the most common in the post-summer survey. These results align with several other studies that note the growing popularity of cigars and cigarillos among young adults.<sup>9,21</sup>

This study also contributes to the existing literature on social smoking, with the remarkable contrast between those who identify as “smokers” vs. “social smokers.” Our results are consistent with findings of other studies<sup>2,3</sup> and have important implications for future interventions targeted towards young adults. For example, many basic tobacco screening questions asked by healthcare providers do not include a category for nondaily social smokers who do not classify themselves as traditional “smokers.” As a result, this subgroup may miss the opportunity to receive cessation counseling or interventions. Given the prevalence of alternative tobacco use, especially cigars and cigarillos, among the sample, the term “social smoking” itself may be too narrow. Social influences on tobacco consumption appear to not be limited to cigarettes alone and instead could also affect the use of products such as e-cigarettes, cigars, cigarillos, hookah, and SLT.

Another finding of importance is the average age at first cigarette among the study sample, which was 18 for both the pre- and post-summer questionnaires. Data from the Adult Tobacco Survey from 2003 to 2007 found that the average age at first cigarette ranged from 14.8 to 16.<sup>4,22</sup> which is much lower than the age of initiation in the present sample. Furthermore, 77.8% of ever-cigarette users in the sample reported an age at first cigarette between the ages of 18 and 22, an age range that encompasses the majority of college students. These findings corroborate the idea that young adults, particularly those undergoing a transition in school or work, are susceptible to changes in tobacco consumption—a concept that often guides marketing strategies of tobacco companies.<sup>5,6</sup> Summer programs and industries that hire young adults should consider implementing and evaluating tobacco-free policies similar to those used on college campuses, in order to protect the health of their employees.

The primary limitation of this study lies in its cross-sectional study design. Individual participants were not traced from the beginning of employment to the end of employment, so we were unable to specifically assess how each respondent’s tobacco use changed. To remedy this, a longitudinal study would be helpful in clarifying the results. The participants of this study were the summer employees of one specific organization, so the ability to generalize the results of this study is limited. Additional studies conducted in other summer employment settings with more diverse study populations are needed to fully understand the role of summer employment in tobacco use patterns among college students.

## PUBLIC HEALTH IMPLICATIONS

This study was among the first to look at changes in young adult tobacco use during summer employment. Results aligned with previous studies of tobacco use among college students, especially in terms of the increased prevalence of cigar use and social smoker self-identification. Among our novel findings, we observed that over 1 in 5 individuals in the post-summer sample reported an increase in overall tobacco use during their summer employment.

Findings are of critical relevance to the public health of Ohio, where the adult smoking rate of 22.5% is well above the national average of 15.5%.<sup>23-24</sup> Prevalence is even higher among Ohio’s college-aged students, at around 24%.<sup>25</sup> As more than 600,000 students are enrolled in higher-education in Ohio,<sup>26</sup> much more research is needed to better understand the role of summer employment on college students’ tobacco use. Overall, evidence-based tobacco prevention and cessation efforts, including regulatory policies, should be targeted towards this unique and susceptible population.

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