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Hookah Smoking and Facilitators/Barriers to Lounge Use among Students at a US University

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Abstract

Objective—To examine hookah tobacco use, hookah lounge attendance, and facilitators and barriers to hookah lounge attendance.

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Conflict of Interest Statement

All authors of this article declare they have no conflicts of interest.

Methods—A cross-sectional Web-based survey of a random sample of 1332 undergraduate students (Mean Age = 21.2 years) attending a United States university.

Results—The majority of respondents (72.8%) had ever smoked hookah tobacco, and 28% of those had ever smoked during adolescence. The majority of ever hookah smokers (81.5%) and a portion of never hookah smokers (20%) had ever been to a hookah lounge. The adjusted odds of ever visiting a hookah lounge were 2.1 times higher among participants who reported that the closest hookah lounge to the university was < 5 miles away than those who reported that the closest hookah lounge was ≥ 5 miles away. Facilitators of visiting hookah lounges included friends and close proximity of hookah lounges to campus; barriers included cost of smoking hookah, crowded lounges, and having to be 18 years old.

Conclusion—Youth are vulnerable to experimenting with hookah tobacco smoking. Hookah lounges provide patrons the opportunity to smoke hookah tobacco with smoker and non-smoker friends in entertaining settings. Our findings suggest that zoning laws and anti-hookah smoking legislation may help curb hookah uptake by prohibiting hookah lounges from opening in close proximity to universities, reducing the density of hookah lounges in cities, and raising the admission age for hookah lounges to 21 years.

Keywords

hookah; waterpipe; initiation; lounge; college; university students

The increase in popularity of hookah tobacco smoking (referred to as ‘hookah smoking’ in this paper) has been reported around the world, particularly among college students.¹⁻⁴ In the United States (US), the 2014 US National College Health Assessment II (ACHA - NCHA II) found that of US undergraduate college students, 38.2% of men and 31.4% of women, reported ever using hookah tobacco, and 11.6% of men and 8.3% of women reported current use (past 30 days).⁵ US college-based random sample surveys report higher ever hookah use rates than national surveys ranging from 15.4% to 61%, and current use rates ranging from 6% to 20%.⁶⁻¹⁰ Data from the 2009-2010 ACHA - NCHA II found that 95% of college students who report current hookah use are undergraduates.¹¹ This suggests that US college students, especially undergraduates, are susceptible to experimenting with smoking an emerging form of tobacco manufactured to be used in a device called a hookah.

A hookah (waterpipe) consists of a bowl, a vertical tube that passes into a partially-filled water jar, and a flexible hose with a mouthpiece. Burning charcoal heats the hookah tobacco placed in the bowl, producing the smoke that is drawn from the bowl, and through water upon inhalation by the smoker via the hose.^{3,12} Flavored hookah tobacco is the most popular and typically consists of tobacco fermented with molasses and fruits mixed with glycerin and chemical flavoring substances.^{3,13} Over 250 different hookah tobacco flavors are available.^{14,15} Compared to cigarette smoke, hookah tobacco smoke contains 1000 times higher quantities of artificial flavoring substances that are potentially hazardous to health.¹⁵ The pleasant smell, taste, and variety of hookah tobacco may camouflage the health risk of smoking tobacco and entice hookah smokers, while also encouraging non-smokers to begin experimenting with hookah smoking.^{14,16}

The Family Smoking Prevention and Tobacco Control Act in 2009 authorized the US Food and Drug Administration (FDA) to regulate hookah tobacco to prevent and reduce tobacco use by young people.¹⁷ To date, the FDA has banned cigarettes with characterizing flavors other than menthol or tobacco; however, this ban has not been extended to flavored hookah tobacco.¹⁸ Hookah tobacco flavors and the passing of smoke through water before inhalation may contribute to the false perception among hookah smokers that hookah tobacco smoking is less harmful than smoking cigarettes.²

Hookah smokers are exposed to the addictive drug nicotine, as well as carcinogens and toxicants such as tobacco-specific nitrosamines and benzene, which put them at risk for tobacco-related and charcoal-related preventable acute and chronic illnesses.¹⁹⁻²² Hookah smoking has been associated with increased risk of heart disease, lung cancer, and oral cancers.²³ Hookah smoking is often practiced in social settings such as hookah lounges.^{3,16,22}

A hookah lounge, referred to hereafter as 'a lounge', is a commercial venue that offers patrons an opportunity to smoke hookah tobacco using a hookah, as well as to socialize.²⁴ Patrons are exposed to indoor air quality levels considered hazardous to human health containing toxic and carcinogenic chemicals, such as polycyclic aromatic hydrocarbons, carbon monoxide, nicotine, and ultrafine particles.²⁵ Lounges, also called hookah bars and cafes, have been increasing in the US, possibly due to their exemption from some clean indoor air legislation, lack of regulation of hookah tobacco products by the FDA, perceptions that hookah smoking is safer than cigarettes, and absence of public health interventions to educate youth about the harmful effects of hookah use.^{2,26-29}

In 2006, the American Lung Association estimated that there were 200-300 lounges operating in the US.¹² A 2014 study estimated that there were 175 lounges in California alone.³⁰ Initiation of hookah smoking was reported to have taken place in lounges.^{16,31} Lounges are highly concentrated around universities, and likely, target students.^{7,12,32} Therefore, it is necessary to examine factors influencing lounge attendance to identify points of intervention to reduce attendance and thus reduce the spread of lounges and hookah tobacco smoking.

This study focusing on undergraduate students at a US university examined: (1) ever and past 30 days use of hookah tobacco and cigarettes by sex; (2) hookah use initiation and use behaviors by sex; (3) lounge attendance behaviors and perceived proximity of lounges to university campus and home among never hookah smokers and ever hookah smokers by sex; (d) types of entertainment and lounge physical layouts; and (5) facilitators and barriers to visiting lounges.

METHODS

Participants and Study Design

This cross-sectional study investigated patterns of hookah use and lounge attendance in a random sample of 1332 US undergraduate students (age 18 years) in an urban public university in San Diego County. These students participated in a spring 2007 Web-based

hookah behavior survey. After receiving approval from the University Institutional Review Board, the university Enrollment Services (E.S.) randomly selected 10,000 students from the database of 26,019 undergraduate students with email addresses on file. E.S. safeguarded student privacy by first sending an opt-out email notifying them of a forthcoming email invitation to participate in a web-based survey on hookah tobacco use. A total 191 students were omitted from further contact due to activation of the opt-out feature. The result was a total of 9809 potential student participants.

The invitation email included a brief description of the study; the anticipated length of time to complete the survey; an opportunity to win one of 5 money orders worth \$50; a unique hyperlink to the survey; survey end date; and study contact information. Two additional reminder emails were sent by the E.S. The first email reminder was sent 72 hours after the initial email invitation and the final email reminder was sent 72 hours later. Participants had a total of 9 days to use the hyperlink to complete the survey. Students were allowed to complete the survey in multiple visits.³³

We developed a hookah questionnaire and checked its content validity by consulting the literature on hookah use and US national surveys on tobacco use.³⁴⁻³⁷ [SurveyMonkey.com](https://www.surveymonkey.com) was used to format the hookah questionnaire and collect data. The survey took approximately 30 minutes to complete. All participants read and electronically signed an informed consent prior to initiating the survey. A total of 1374 students (13.74%) responded to the survey. Because we were focusing on undergraduate university aged students, we excluded data of 42 students whose age ranged from 35-60 years. Final analyses were conducted on 1332 students aged 18-34 years.

Measures

Socio-demographic characteristics—We asked about age, sex, race/ethnicity and country of birth.

Hookah use—Ever hookah smokers were identified by a “Yes” response to “Have you ever tried or smoked a hookah, even a few puffs?” and never hookah smokers by a “No” response. Hookah use assessment included awareness of hookah tobacco, age first tried to smoke hookah, location and who they were with when first tried hookah; ever, past 7 days and past 30 days hookah use; and ever and past 30 days cigarette use. Past 30 days users were considered current users. ‘Ever dual smokers’ was defined as those who ever tried both hookah and a cigarette, and ‘current dual smokers’ as those who reported past 30 days use of both hookah and cigarettes.

Lounge attendance behaviors—We asked about awareness of lounges, ever been to a lounge, how often visited lounges, the length of time usually spent at a lounge, how far they lived and how far their university was from the nearest lounge, and whether they supported opening more lounges.

Facilitators and barriers to attending lounges—We asked open-ended questions about entertainment and physical layouts of lounges, and facilitators and barriers to visiting lounges.

Data Analysis

Data were exported from SurveyMonkey, and analyzed in SPSS version 22 using 2-tailed statistical tests ($\alpha = .05$). Pearson chi-square tests were used for categorical variables and independent sample t-tests for continuous variables to assess differences in hookah smoking and lounge related behaviors by sex and by ever hookah use. A binary logistic regression model was used to assess the relationship of ever visiting a lounge to (1) awareness of lounges, and (2) perceived distance of the nearest lounge from the university, adjusting for age, sex, race/ethnicity, and ever hookah use. For open-ended questions, based on initial reading of responses, an *a priori* codebook was developed by the principal investigator (PI) and reviewed by the study team. Participants' responses were manually grouped independently by 2 coders, the data manager and a hookah smoker graduate university student intern. The PI and the 2 coders discussed discrepancies and made corresponding modifications to coding. The codebook was updated by emerging themes.

RESULTS

Demographic characteristics, ever hookah use, and ever cigarette use are presented in Table 1. The mean (M) age of respondents was 21.2 years ($SD = 2.73$). About half were white, and those who chose the 'Other' option for ethnicity considered themselves bi- or multi-ethnic, or identified themselves by their country of origin, such as Italy or the Philippines, or identified themselves by other ethnicities such as Middle Eastern/Arab ($N = 28$) or Pacific Islander. The majority (87.1%) were born in the US. Those who reported being born in another country ($N = 115$) cited 34 countries: 23 students were born in Mexico, 16 students in the Philippines, and 1-5 students were born in each of the remaining 32 countries.

Students in our sample and the university undergraduate population during our study period were relatively similar: women (66.5% vs 57.8%, respectively) outnumbered men (33.5% vs 42.2%, respectively), the majority were between the ages of 18-24 years (89.5% vs 85%, respectively), and the ethnic make-up was as follows: white – 45.1% vs 45.3%, Hispanics – 22.3% vs 21.5%, and Asians – 17.3% vs 15%, respectively.

The overall prevalence rate of ever hookah use was 72.8%. Ever hookah smokers, compared to never hookah smokers, were younger, more likely to have ever tried cigarettes, and more likely to be current cigarette smokers. Among ever hookah smokers, 71.6% were 'ever dual smokers' who reported ever using both hookah and cigarettes, and 28.4% had never tried cigarettes. The majority of never hookah smokers were aware of hookah tobacco.

Men and women ever hookah smokers did not differ significantly in age or ethnic makeup. More than two-thirds of both men and women reported ever hookah use. Irrespective of sex, the majority of ever hookah smokers (71.6%) were 'ever dual smokers', although 25.3% of men and 30% of women ever hookah users had never tried cigarettes.

Age of Initiation and Hookah Use Behaviors

Table 2 presents hookah use initiation and hookah use behaviors. A total of 28.1% of the participants overall first tried to smoke hookah at an age younger than 18 years, 40.3% at

age 18 years, 29.6% at ages 19-24 years, and only 2% at ages 25-34 years. No significant difference was found between men and women on age first tried to smoke hookah.

When participants first tried to smoke hookah, the majority (97.5%) were with friends, and more than half (59.5%) were at a lounge. A total of 17% reported past 7 days use and 41.8% reported past 30 days use, whom we considered 'current hookah smokers', and 18.1% were 'current dual smokers' who reported past 30 days use of both hookah and cigarettes. The majority (89.4%) of ever hookah smokers had only tried flavored hookah tobacco. Men and women were similar in overall hookah use initiation and use behaviors.

Lounge Awareness, Use and Support

As data in Table 3 show, the majority of both ever and never hookah smokers first became aware of lounges through friends, passing by lounges, or from media advertising. The majority (85.4%) of ever hookah smokers and 21.2% of never hookah smokers had ever been to a lounge. There were no significant differences between men and women in overall lounge attendance behaviors.

Participants reported visiting lounges mostly on Fridays and Saturdays and spent an average of 105.2 minutes on a typical lounge visit. More reported usually visiting the lounges that were near their university than the lounges that were not near their university (50.0% vs 30.6%, respectively). More than half of ever (59.6%) and never (52%) hookah smokers reported that they lived less than 5 miles from the nearest lounge; and the majority of ever (81.4%) and never (78.1%) hookah smokers reported that their university was less than 5 miles from the nearest lounge.

Ever hookah smokers were more likely than never hookah smokers to support opening more lounges in San Diego. About one-fourth of respondents who specified reasons for not supporting opening lounges stated that there was no need for more lounges. When asked: "How would you feel if lounges were to shut down?" 42% of ever hookah smokers respondents said "Angry, Sad, or Unfair." Also, ever hookah smokers were less likely than never smokers to support anti-hookah advertisements or laws prohibiting smoking hookah in public places. Among never hookah smokers, 31.6% were concerned that they were expected to smoke if they were around friends who smoke hookah; and 71.9% were bothered when someone smoked hookah around them.

Friends and Proximity of Lounges to the University

Table 4 shows results of a logistic regression of ever visiting a lounge on awareness of lounges, and distance of the nearest lounge from the university. The adjusted odds of ever visiting a lounge was 4.4 times higher among those who became aware of lounges through friends than those who became aware of lounges through other means. The adjusted odds were 2.1 times higher among participants who reported that the closest lounge to the university was less than 5 miles away than among those who reported that the closest lounge was 5 or more miles away.

Entertainment and Physical Layout of Lounges

Table 5 presents responses to the 2 open-ended questions: 'In the hookah lounge that you usually visit, what type of entertainment is usually presented?' and 'To your recollection describe the interior layout'. Entertainment in lounges was mostly music with a Middle Eastern flare ranging from recorded surround sound music to live bands. Belly dancing on some days, movies and sports television, food, drinks and games such as chess and pool tables were also noted. The interior layout of lounges ranged from a large open space accommodating many patrons to a small 2-room venue. There were counters displaying tea, drinks, pastries, hookahs and hookah tobacco for sale. Comfortable seating was reported ranging from fancy long cushioned couches and pillows to small close tables and chairs. Lounges provided tables dedicated for computer use, thus offering a place to study, smoke hookah, and 'hang out' until the early morning hours. The decorations were exotic ranging from alluring dark colors to bright rich colors with drapes and candles. The ambience ranged from dimly lit and cozy 'like a living room in a house' to being loud and crowded.

Facilitators to Visiting Lounges

Tables 6 presents responses to the 2 open-ended questions: "What do you enjoy most about visiting a hookah lounge?" and "What are the things that make it easy for you to visit a hookah lounge?" Respondents most enjoyed the relaxed and fun atmosphere where they could socialize with friends and meet people while smoking a variety of hookah tobacco flavors for long periods of time. What made it easy for them to visit a lounge was mainly having friends wanting to go or offering to pay for the hookah, as well as the many lounges in close proximity to campus or home.

Barriers to Visiting Lounges

Tables 7 presents responses to the 2 open-ended questions: "What bothers you the most about visiting a hookah lounge?" and "What are some of the barriers to visiting a hookah lounge?" Respondents were bothered the most with the smoke, followed by other patrons who were either annoying or became annoying because they became high. Barriers to visiting lounges included the cost of smoking hookah, waiting in line due to crowded lounges, the age limit of 18 years to enter a lounge, and driving to lounges.

DISCUSSION

This study adds important findings on hookah use behaviors and factors influencing hookah lounge attendance among undergraduate students at a US university.

Hookah Initiation and Use

Irrespective of the respondents' sex, more than one-fourth (28.1%) first tried to smoke hookah tobacco at an age younger than 18 years. The 2014 US Surgeon General's report found that nicotine use by youths in any form is unsafe.³⁸ However, national surveys revealed that adolescents are experimenting with hookah tobacco.³⁹⁻⁴¹ The 2013 US National Youth Tobacco Survey showed that 15.1% of boys and 13.5% of girls in high schools reported ever hookah use,⁴⁰ and between 2011 and 2014 high school students' current use of cigarettes decreased from 15.8% to 9.2%, whereas current hookah use

doubled from 4.1% to 9.4%. This resulted in an overall estimated total of 1.6 million hookah youth users in 2014.⁴¹ The Centers for Disease Control and Prevention (CDC) reports that exposure to the addictive drug nicotine during adolescence, regardless of mode of delivery, might have lasting adverse consequences for brain development,³⁷ causes addiction,⁴² and might lead to sustained tobacco use.^{38,40} The CDC's conclusions are based on cigarette use, so specific research is needed to demonstrate their applicability to hookah tobacco use. Meanwhile, continuous surveillance of hookah tobacco use by youths is crucial, and including hookah use in ongoing tobacco control strategies in high schools is warranted.

Ever hookah use was reported by 72.8% of the participants, and current hookah use by 41.8% of ever hookah users. Our findings were higher than rates reported in random samples of college students, 61%-15.4% ever use and 20%-6% current use,⁶⁻¹⁰ perhaps because the university was required to name the emailed survey 'hookah survey', which may have inclined respondents' response rate to be higher among ever than never hookah smokers. Furthermore, during the time period the survey was administered there were at least 2 lounges across the street from the university.

Dual tobacco products use among the youths is emerging in the US.^{7,11,43} We found that 71.6% of ever hookah users were also 'ever dual tobacco users' who also reported ever cigarette use. Also, 18.1% of current hookah smokers were 'current dual tobacco users' who reported current cigarette use. Current dual tobacco use was also reported in 2 studies among university students in North Carolina and Florida that found that 55.4% and 35.2% of current hookah users, respectively, were also current cigarette users.^{7,43} Nationally, the 2009-2010 US ACHA-NCHA II found that 56.6% of current hookah users reported non-daily cigarette use, and 12.7% reported daily cigarette use.¹¹

Never cigarette smokers are becoming at risk of experimenting with hookah tobacco.^{3,7,16,43} Hookah tobacco could be the first and only form of tobacco used.^{3,7,16,43} We found that 28.4% of ever hookah users never tried cigarettes. Similarly, 28.8% and 22% of current hookah users in university students in Florida and North Carolina, respectively, had never tried a cigarette.^{7,43} Nationally, the 2009-2010 US ACHA-NCHA II found that 30.8% of current hookah users never smoked a cigarette.¹¹ This suggests the need to include exclusive hookah use and dual hookah and cigarette use in ongoing national monitoring and tobacco control measures, particularly among undergraduate college students.

Lounges Attendance Behaviors

We found that 59.5% of ever hookah smokers first tried hookah at a lounge, and the majority (85.4%) have ever been to one. Participants reported spending about 2 hours during their typical lounge visit, and smokers smoked for an average of one hour on the day they smoked. Hookah smokers may smoke less frequently per day than cigarette smokers, but they smoke for longer periods with deeper inhalations, and therefore, are in jeopardy of intense exposure to hookah tobacco smoke.⁴⁴ The average inhalation volumes were reported at about 530 ml for single hookah puffs versus about 35-60 ml for single cigarette puffs indicating that hookah smoking sessions generate lots of smoke.^{44,45} Smoke was most frequently reported by our participants as what bothered them the most about visiting a lounge.

A portion (21.2%) of never hookah smokers in our study had been to a lounge. Patrons of lounges, both those who smoke and those who do not smoke, are at risk for exposure to secondhand smoke (SHS), an indoor toxic air contaminant, from both tobacco smoke and emissions from hookah charcoal combustion.⁴⁴⁻⁴⁶ For example, uptake of benzene (a toxic constituent of hookah tobacco and charcoal), increased significantly in hookah smokers following smoking in lounges.^{22,47}

California was the first state to prohibit smoking on trains, planes, buses, public buildings, workplaces, restaurants and bars.⁴⁸ However, California and many states in the US with smoke-free workplace laws continue to have some exemptions that enable lounges to allow smoking inside their establishments by operating as businesses qualified as tobacco retail stores, tobacco bars, private clubs, or owner-operated businesses.^{49,50} These commercial venues have been operating throughout the US, providing opportunities for non-smokers to initiate smoking hookah tobacco.^{16,51,52} It is urgent that states and local jurisdictions reconsider exempting lounges from clean indoor air legislations in order to reduce the proliferation of these venues that offer easy and enticing access to smoking tobacco using attractive devices, and exposing patrons as well as employees of lounges to tobacco and charcoal-related toxicants.⁴⁹

Facilitators to Attending Lounges

Friends facilitating lounges attendance—We found that the majority of ever hookah smokers were with friends when first tried to smoke hookah, and more than two-thirds first become aware of lounges through friends. Ever hookah smokers also reported that socializing with friends was what they enjoyed most about visiting a lounge, and friends made it easy for them to visit a lounge by either driving them to a lounge or paying for cost of visiting a lounge. Studies of college students show that ‘socializing with friends’ is a strong predictor of hookah use.^{2,32} California's successful tobacco control efforts have worked to change the social norms around the use of tobacco to create an environment in which tobacco is less acceptable.⁵³ It is important that such tobacco control strategies include efforts to change social norms to make hookah tobacco less acceptable, particularly because hookah smokers believe that smoking hookah is less harmful than cigarettes.²

Proximity of lounges to colleges—Our findings suggest that having lounges close to a university makes it more likely that students will visit lounges. We also found that the majority of ever and never hookah users reported a lounge within 5 miles of the university, and half usually visited a lounge near the university. Respondents felt that there were many lounges around the university, and the close proximity of lounges to the university made it easy for them to visit.

A study of college students from 8 North Carolina universities found that current hookah use was associated with having a lounge within a 10-mile radius of the campus, and that the 3 schools with the highest hookah use rates had at least one lounge in the community near campus.⁷ Another study comparing 2 college campuses found that the campus with the higher hookah use rate had several establishments that serve hookah near the college campus.⁵² Efforts to reduce easy access to hookah tobacco by youth should include reducing

the number of lounges per city, and enacting regulations prohibiting issuing business licenses to open lounges within close proximity to universities.

Lounge marketing and media—Our participants reported that they became aware of lounges from the media including free print media, the internet and movies.

Free print media—Free print media include ads in the university newspaper and in student coupon booklets. The university newspaper is distributed free in locations throughout the campus. Also, each quarter, 15,000 paper copies of student coupon booklets are printed and distributed free of charge and directly into the hands of university students.⁵⁴ Students also can download these ads from their website.⁵⁴ On several visits to the campus where this study was conducted we picked up the university newspaper and found lounge ads advertising close proximity to the university with discount coupons to visit a lounge. We also were handed student coupon booklets as we were walking towards the entrance of the university campus and found lounge ads and discount coupons. Influential boards of universities should make efforts to ban lounge advertisements in university newspapers and coupon booklets distributed on campus.

Social media—The social media on the Internet constitutes an increasing proportion of our social ecology, and especially that of youth, who are the most ready adopters of the new modes of communication, and the most heavily targeted by hookah promotions and inducements.⁵⁵ Social media include social networks such as Facebook or Twitter to connect and interact with friends and share videos. Compared to cigarette-related *YouTube* videos, hookah-related videos are more likely to portray tobacco smoking as positive, and less likely to depict adverse health effects of smoking, anti-smoking messages or cessation techniques.⁵⁶ One study showed that hookah users had references to hookah on their social media profiles, and were exposed to content about hookah tobacco products posted by friends in their social media network.⁵⁷ Including social media in the design and evaluation of anti-smoking campaigns for hookah is needed.

Broadcast media—California's tobacco control program has been partnering with all of the major motion picture studios to place California's anti-smoking television commercials on millions of youth-rated DVD movies that contain images of smoking.⁵³ It is urgent that California and other states include anti-smoking commercials for hookah in this effort.

Entertainment and other attractive features of lounges—To appeal to varied interests, and thus, maintain patronage, lounge atmospheres range from calm days to loud, lively music and dancing days, with music selections spanning none, soft, rap, and 'crazy belly dancing music'. Lounges are catering to students by providing tables dedicated for computer use to do school work while smoking hookah until the early morning hours.

Lounges were concurrently offering food, alcohol, tea and coffee. This was consistent with findings indicating that owners of lounges often advertise via the Internet that they offer food, alcohol, free Internet access, dancing, and live music, and allude to an atmosphere that is pleasurable, relaxed and entertaining.⁵⁰

In Middle Eastern countries, allowing hookah smoking in restaurants and cafes that serve food and drinks had contributed to an increase in hookah use.^{50,58} Efforts to control the US lounges should include not allowing lounges additional attractive features, such as food and alcohol, that may help prompt experimentation and sustain continued use.

Barriers to Attending Lounges

Cost of smoking hookah—Our participants tried to save money by having friends drive them and/or pay for hookah tobacco. The cost of smoking hookah made it difficult for some participants to visit a lounge. Such perceived barriers suggest raising excise taxes on hookah tobacco products to increase the burden of smoking hookah tobacco, and reduce its use by youths. Studies on cigarettes showed adolescents and young adults were likely to reduce tobacco use when prices increase.^{59,60}

Crowded lounges—It is alarming that respondents felt that lounges were crowded and participants had to wait in line to enter a lounge. Limiting the number of lounges per city, thereby reducing the density of lounges within certain geographic areas, may strengthen this barrier to visiting lounges.⁵⁹ Zoning ordinance regulators are encouraged to address the phenomena of the high density of lounges within their cities as an approach to reducing the spread of lounges.

Legal age to enter a lounge—In California, the legal age to enter a lounge is 18 years, and to enter a bar is 21 years.^{61,62} Attending lounges until late hours was appealing to some of our participants, ages 18 to 21 years, because they cannot visit bars due to age restrictions. This suggests raising the legal age to purchase hookah tobacco and enter a lounge from 18 years to 21 years. States and counties should also promote establishments where college aged adults can meet and socialize in smoke-free environments.

Limitations

We employed a cross-sectional design for this study which limits our ability to establish causality. The response rate of 13.4% was low, potentially compromising the external validity of the results; however, this is typical of Web-based surveys.⁶³ Due to skip patterns in the questionnaire, valuable information about never hookah smokers may have been omitted. Future studies should include a larger sample size of never hookah smokers to identify points of intervention to curb hookah initiation and lounge attendance. Length of time needed to complete the survey (30 minutes) may have resulted in missing data. Because hookah use is emerging in the US, we developed our own hookah questionnaire; therefore, conducting validation studies of hookah use questionnaires to be used in US populations is encouraged. Many of the recommendations in the discussion section to control the spread of lounges were based on small sample sizes from open-ended questions in Tables 5-7; we suggest that future research collect quantitative data on larger samples informed by our qualitative results. Because hookah use is emerging and changing rapidly in the US, the time elapsed since the collection of these data is another limitation. However, our findings fill a gap in knowledge about lounge attendance, thereby informing points of intervention to reduce the spread of lounges and hookah tobacco smoking. Moreover, due to the lack of

change in laws and regulations governing hookah lounges, since this study was conducted, its implications remain relevant.

Conclusion and Implications

Adolescents and young adults are susceptible to experimenting with hookah tobacco. Continuous monitoring of hookah use at the national level among all age groups, particularly adolescents and young adults, is warranted. Meanwhile, there is sufficient evidence about the harmful effects of hookah use to warrant designing, implementing, and evaluating high school and college-based national public health anti-hookah tobacco education campaigns to include peer education, and the social, print and broadcast media.

Hookah lounges provide their patrons hookah tobacco to smoke in comfortable exotic settings with food and drinks accompanied by entertainment, or a relaxing place to study with friends while smoking hookah. To reduce the spread and popularity of lounges, states and local jurisdictions are encouraged to include lounges in clean indoor air legislation, ban hookah tobacco flavors, not allow lounges additional attractive services such as food and alcohol, prohibit lounges from opening in close proximity to universities, reduce the density of lounges in cities via zoning ordinances, increase taxes on hookah tobacco, and raise the age of admission for lounges to 21 years.

Human Subjects Statement

The study was approved by the Institutional Review Board of San Diego State University. Electronic informed consent for all study procedures was obtained before data collection.

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Figure 1.

Age First Tried Hookah Tobacco Smoking among Undergraduate Students at a University in San Diego, CA

Table 1
Demographics and Ever Hookah Use among Undergraduate Students at a University in San Diego, CA (N = 1332)

	All Participants						Ever Hookah Smokers									
	Total N = 1332			Ever Hookah Smokers N = 970			Never Hookah Smokers N = 362			Men N = 344			Women N = 626			
	N	(%)		N	(%)		N	(%)		N	(%)		N	(%)	^a p	
Age (years)																
18-20	628	(47.1)		466	(48.0)		162	(44.8)		153	(44.5)		313	(50.0)		
21-24	565	(42.4)		423	(43.6)		142	(39.2)		160	(46.5)		263	(42.0)		
25-34	139	(10.4)		81	(8.4)		58	(16.0)		31	(9.0)		50	(8.0)		
Mean (SD) ^b	21.2	(2.73)		21	(2.42)		21.7	(3.37)		<.001	21.2	(2.49)		20.9	(2.38)	.257
Median (Min-Max) ^c	21	(18-34)		21	(18-34)		21	(18-34)			21	(18-32)		20.5	(18-34)	
Sex																
Men	446	(33.5)		344	(35.5)		102	(28.2)			-	-		-	-	
Women	886	(66.5)		626	(64.5)		260	(71.8)		.012	-	-		-	-	
Ethnicity																
White	601	(45.1)		479	(49.4)		122	(33.7)			168	(48.8)		311	(49.7)	
Hispanic	297	(22.3)		193	(19.9)		104	(28.7)			73	(21.2)		120	(19.2)	
Asian	231	(17.3)		157	(16.2)		74	(20.4)			56	(16.3)		101	(16.1)	
African American	47	(3.5)		26	(2.7)		21	(5.8)			12	(3.5)		14	(2.2)	
Other	156	(11.7)		115	(11.9)		41	(11.3)		<.001	35	(10.2)		80	(12.8)	.546
Where were you born?																
US	776	(87.1)		543	(88.6)		233	(83.8)			185	(87.7)		358	(89.1)	
Another country	115	(12.9)		70	(11.4)		45	(16.2)		.049	26	(12.3)		44	(10.9)	.611
Are you aware of hookah tobacco?																
Yes	1239	(96.3)		947	(100)		292	(85.9)			335	(100)		612	(100)	
No	48	(3.7)		0	(0)		48	(14.1)		<.001	0	(0)		0	(0)	.899
Have you ever tried or smoked a hookah, even a few puffs? ^d																
Yes	970	(72.8)		970	(100)		0	(0)			344	(77.1)		626	(70.7)	
No	362	(27.2)		0	(0)		362	(100)			102	(22.9)		240	(29.3)	.012

.012

.546

.611

.899

.012

	All Participants						Ever Hookah Smokers			
	Total N = 1332			Ever Hookah Smokers N = 970			Men N = 344			Women N = 626
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Have you ever tried cigarettes?										^a p
Yes	669	(58.9)	566	(71.6) ^e	103	(29.8)	204	(74.7)	362	(70.0)
No	467	(41.1)	224	(28.4)	243	(70.2)	69	(25.3)	155	(30.0)
Did you smoke cigarettes during the past 30 days?										^a p
Yes	134	(11.8)	117	(14.8)	17	(4.9)	52	(19.0)	65	(12.6)
No	1003	(88.2)	673	(85.2)	330	(95.1)	221	(81.0)	452	(87.4)
										.015

Note.

Some cells with expected count of less than 5 violated the assumptions of the chi-square test.

Due to missing values, some variables do not total the sample size 1332.

^a p - value from Pearson's chi-square test or t-test, as appropriate, for significance at $p < .05$. Statistically significant p values are bolded.

^b SD = Standard Deviation.

^c Min-Max = Minimum - Maximum.

^d 'Hookah' was referred to in the questionnaire as 'hookah tobacco'.

^e 71.6% were 'Ever dual smokers' = ever use of both hookah and cigarettes.

Table 2

Hookah Use Initiation and Hookah Use Behaviors among Ever Hookah Smoker Undergraduate Students at a University in San Diego, CA (N = 970)

	Ever Hookah Smokers N = 970		Ever Hookah Smokers				p ^a
			Men N = 344		Women N = 626		
	N	(%)	N	(%)	N	(%)	
About how old were you when you first tried to smoke hookah? (years)^{b, c}							
<18	252	(28.1)	97	(30.7)	155	(26.7)	
18	361	(40.3)	116	(36.7)	245	(42.2)	
19-24	265	(29.6)	97	(30.7)	168	(29.0)	
25-34	18	(2.0)	6	(1.9)	12	(2.1)	.401
Mean (SD) ^d	18.3	(2.10)	18.3	(2.30)	18.3	(1.98)	.960
Median (Min-Max) ^e	18	(11-30)	18	(11-30)	18	(11-30)	
The first time you tried to smoke hookah were you:^f							
with friends	869	(97.5)	312	(99.4)	557	(96.5)	
with family	22	(2.5)	2	(0.6)	20	(3.5)	.009
The first time you tried to smoke hookah were you:							
in a hookah lounge	453	(59.5)	138	(53.1)	315	(62.9)	
at friend's home	228	(30.0)	95	(36.5)	133	(26.5)	
at home	33	(4.3)	5	(1.9)	28	(5.6)	
at school/college	47	(6.2)	22	(8.5)	25	(5.0)	.001
Did you smoke hookah during the past 7 days?							
Yes	104	(17.0)	45	(18.5)	59	(15.9)	
No	509	(83.0)	198	(81.5)	311	(84.1)	.406
Did you smoke hookah during the past 30 days?^g							
Yes	255	(41.8)	98	(40.7)	157	(42.5)	
No	355	(58.2)	143	(59.3)	212	(57.5)	.645
Do you currently smoke hookah daily, weekly, monthly, occasionally or not at all?^h							
Daily	7	(0.8)	6	(1.9)	1	(0.2)	
Weekly	46	(5.2)	24	(7.8)	22	(3.8)	
Monthly	120	(13.6)	56	(18.2)	64	(11.2)	
Occasionally	447	(50.8)	161	(52.3)	286	(50.0)	
Not at all	260	(29.5)	61	(19.8)	199	(34.8)	<.001
If yes current hookah smoker, did you smoke cigarettes during the past 30 days?							
Yes	97	(18.1) ⁱ	47	(22.1)	50	(15.4)	
No	440	(81.9)	166	(77.9)	274	(84.6)	.051
What type of hookah tobacco have you ever tried?							

	Ever Hookah Smokers						<i>p^a</i>
	Ever Hookah Smokers N = 970		Men N = 344		Women N = 626		
	N	(%)	N	(%)	N	(%)	
Only flavored	708	(89.4)	230	(74.6)	478	(91.9)	.003
Only unflavored	41	(5.2)	18	(6.6)	23	(4.4)	
Both flavored/unflavored	43	(5.4)	24	(8.8)	19	(3.7)	
How many hookah heads do you usually smoke on the day you smoke?^j							
Mean (SD)	1.40	(0.76)	1.53	(0.82)	1.31	(0.70)	.009
Median (Min-Max)	1	(.25-7)	1	(.50-5)	1	(.25-7)	
How long do you usually smoke hookah on the day you smoke? (minutes)							
Mean (SD)	67.1	(42.47)	65.6	(37.52)	65.1	(45.35)	.512
Median (Min-Max)	60	(2-240)	60	(10-180)	60	(2-240)	

Note.

Some cells with expected count of less than 5 violated the assumptions of the chi-square test.

Due to missing values, some variables do not total the ever hookah users sample N = 970.

^a *p* - value from Pearson's chi-square test or t-test, as appropriate, for significance at *p* < .05. Statistically significant *p* values are bolded.

^b 'Hookah' was referred to in the questionnaire as 'hookah tobacco'.

^c Age 18 years is the age at which one is legally considered an adult in the US, and the minimum age at which individuals can purchase tobacco legally.

^d SD = Standard Deviation.

^e Min-Max = Minimum - Maximum.

^f Other category not in Table: Alone (N = 1), with strangers (N = 2).

^g Past 30 day use was coded "yes" if the response to past 7 day use was "yes".

^h Daily = at least once each day, Weekly = at least once each week but less than daily, Monthly = at least once a month but less than weekly, and Occasionally = at least once a year but less than monthly.

ⁱ 18.1% were 'current dual smokers' = past 30 days use of both hookah and cigarettes.

^j A hookah head' was defined in the questionnaire as '10 grams of hookah tobacco'.

Table 3

Hookah Lounge Awareness, Use, and Support among Undergraduate Students at a University in San Diego, CA (N = 1332)

	All participants				Ever Hookah Smokers			
	Total N = 1332		Ever Hookah Smokers N = 970		Men N = 344		Women N = 626	
	N	(%)	N	(%)	N	(%)	N	(%)
How did you first become aware of hookah lounges?^{a,b}								
Friends	643	(69.7)	495	(77.8)	148	(51.7)	339	(80.7)
Passing by one	132	(14.3)	79	(12.4)	53	(18.5)	47	(11.2)
Media ^c	88	(9.5)	44	(6.9)	24	(11.1)	20	(4.8)
Not aware	35	(3.8)	4	(0.6)	2	(0.9)	2	(0.5)
Family	24	(2.6)	14	(2.2)	10	(3.5)	12	(2.9)
								.007
Have you ever been to a hookah lounge?								
Yes	663	(66.1)	599	(85.4)	64	(21.2)	401	(87.0)
No	340	(33.9)	102	(14.6)	238	(78.8)	60	(13.0)
								.110
How often do you visit hookah lounges?^d								
At least Weekly	14	(2.2)	11	(1.9)	3	(4.7)	8	(2.1)
At least Monthly	39	(6.1)	38	(6.6)	1	(1.6)	23	(6.0)
Occasionally	398	(62.6)	372	(65.0)	30	(46.9)	247	(64.5)
Not at all	185	(29.1)	151	(26.4)	34	(53.1)	105	(27.4)
								.744
On a typical hookah lounge visit, how long do you stay in a hookah lounge? (Minutes)								
<60	16	(4.5)	16	(4.7)	0	(0.0)	12	(5.1)
60	91	(25.6)	87	(25.4)	4	(30.8)	59	(25.0)
90	56	(15.8)	56	(16.4)	0	(0.0)	32	(13.6)
120	131	(36.9)	124	(36.3)	7	(53.8)	86	(36.4)
>120	61	(17.2)	59	(17.3)	2	(15.4)	47	(19.9)
Mean (SD) ^e	105.2	(42.5)	105.1	(42.7)	108.5	(37.8)	107.8	(45.7)
								.047
Median (Min-Max) ^f	120	(15-240)	120	(15-240)	120	(60-180)	120	(15-240)
								.777
Which days of the week do you usually visit a hookah lounge? (Select all that apply)								
Monday-Thursday (Yes)	64	(9.5)	62	(9.2)	2	(0.3)	43	(7.4)
								.046
								.663

	All participants						Ever Hookah Smokers		
	Total N = 1332			Ever Hookah Smokers N = 970			Men N = 344		
	N	(%)	N	(%)	N	(%)	N	(%)	N
Fridays (Yes)	285	(42.3)	274	(42.2)	11	(1.6)	99	(16.7)	175
Saturdays (Yes)	279	(41.5)	269	(41.4)	10	(1.5)	94	(15.9)	175
Sundays (Yes)	45	(6.7)	45	(6.9)	0	(0.0)	18	(3.0)	27
Which hookah lounge do you usually visit?									
Near my university	213	(50.5)	202	(51.0)	11	(42.3)	74	(57.8)	128
Not near my university	129	(30.6)	118	(29.8)	11	(42.3)	38	(29.7)	80
Both equally	80	(19.0)	76	(19.2)	4	(15.4)	16	(12.5)	60
How far do you live from the nearest hookah lounge?^g									
< 5 miles	455	(58.0)	365	(59.6)	90	(52.0)	145	(66.2)	220
5 - 10 miles	232	(29.6)	177	(28.9)	55	(31.8)	51	(23.3)	126
> 10 miles	98	(12.5)	70	(11.4)	28	(16.2)	23	(10.5)	47
How far your university is to the nearest hookah lounge?									
< 5 miles	617	(80.7)	485	(81.4)	132	(78.1)	179	(82.5)	306
5 - 10 miles	119	(15.6)	92	(15.4)	27	(16.0)	31	(14.3)	61
> 10 miles	29	(3.8)	19	(3.2)	10	(5.9)	7	(3.2)	12
Would you support opening more hookah lounges in San Diego?									
Yes	205	(35.0)	202	(50.8)	4	(1.6)	75	(52.1)	127
No	380	(65.0)	196	(49.2)	184	(98.4)	69	(47.9)	127
If Yes, Specify reasons:^h									
Why not?	35	(29.4)	35	(30.4)	0	(0.0)	15	(33.3)	20
Fun/Social	35	(29.4)	35	(30.4)	0	(0.0)	9	(20.0)	26
Freedom	26	(21.8)	22	(19.1)	4	(100)	8	(17.8)	14
More variety	23	(19.3)	23	(20.0)	0	(0.0)	13	(28.9)	10
If No, Specify reasons:^h									
Don't need anymore	69	(25.5)	49	(33.8)	20	(15.9)	10	(21.3)	39
Don't care	66	(24.4)	43	(29.7)	23	(18.3)	15	(31.9)	28
Don't like hookah	69	(25.5)	30	(20.7)	39	(31.0)	16	(34.0)	14

	All participants						Ever Hookah Smokers								
	Total N = 1332			Ever Hookah Smokers N = 970			Never Hookah Smokers N = 362			Men N = 344			Women N = 626		
	N	(%)		N	(%)		N	(%)		N	(%)		N	(%)	^a p
Unhealthy/gross	46	(17.0)		17	(11.7)		29	(23.0)		5	(10.6)		12	(12.2)	
Promotes underage smoking	21	(7.7)		6	(4.1)		15	(11.9)		<.001	1	(2.1)	5	(5.1)	.039
How would you feel if hookah lounges were to shut down?															
Don't care	288	(51.9)		188	(49.2)		100	(57.8)			64	(48.1)	124	(49.8)	
Happy/fine	95	(17.1)		34	(8.9)		61	(35.3)			11	(8.3)	23	(9.2)	
Sad/disappointed	66	(11.9)		64	(16.8)		2	(1.2)			23	(17.3)	41	(16.5)	
Angry/upset	55	(9.9)		53	(13.9)		2	(1.2)			19	(14.3)	34	(13.7)	
Unfair/unnecessary	51	(9.2)		43	(11.3)		8	(4.6)		<.001	16	(12.0)	27	(10.8)	.989
Would you support anti-hookah tobacco advertisements?															
Yes	289	(46.7)		139	(32.3)		150	(79.4)			40	(24.5)	99	(37.1)	
No	330	(53.3)		291	(67.7)		39	(20.6)		<.001	123	(75.5)	168	(62.9)	.007
Would you support laws prohibiting smoking hookahs in public places such as parks and restaurants?															
Yes	399	(55.2)		197	(39.7)		202	(89.0)			58	(32.2)	139	(44.0)	
No	324	(44.8)		299	(60.3)		25	(11.0)		<.001	122	(67.8)	177	(56.0)	.010
If you are around friends who smoke hookah, are you concerned they will expect you to smoke?															
Very/Somewhat concerned	189	(19.7)		102	(14.9)		87	(31.6)			44	(18.9)	58	(12.9)	
Not at all concerned	770	(80.3)		582	(85.1)		188	(68.4)		<.001	189	(81.1)	393	(87.1)	.036
How bothered do you feel when someone smokes hookah around you?															
Very/Somewhat bothered	301	(32.3)		122	(17.8)		179	(71.9)			38	(15.9)	84	(18.9)	
Not at all bothered	632	(67.7)		562	(82.2)		70	(28.1)		<.001	201	(84.1)	361	(81.1)	.332

Note.

Some cells with expected count of less than 5 violated the assumptions of the chi-square test.

Due to missing values, some variables do not total the ever hookah users sample N = 970.

^a p - value from Pearson's chi-square test or t-test, as appropriate, for significance at p < .05. Statistically significant p values are bolded.

^b A hookah lounge was explained to participants to include other names such as hookah cafés and hookah bars.

^c Media included the following responses: university newspaper, coupon booklet, internet, movies.

^d At least Weekly: at least once each week but less than daily, At least Monthly: at least once a month but less than weekly, and Occasionally: at least once a year but less than monthly.

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f_e SD = Standard Deviation.
 f_f Min-Max = Minimum - Maximum.
 f_g Respondents were instructed to answer this question based on their permanent home address.
 f_h An open-ended question.

Table 4

Binary Logistic Regression to Predict Ever Hookah Lounge Attendance^a among Undergraduate Students at a University in San Diego, CA

	Unadjusted OR ^b	95% CI	p ^c	Adjusted OR ^d	95% CI	p
Became aware of hookah lounges^e						
By friends	4.450	3.294 - 6.011	<.001	4.428	2.733 - 7.176	<.001
Other	reference			reference		
Distance of nearest hookah lounge to the university^f						
< 5 miles	1.677	1.133 - 2.484	.010	2.109	1.211 - 3.672	.008
5 miles	reference			reference		

Note.

Hosmer and Lemeshow Goodness-of-Fit Test (p = .502); Nagelkerke R² = .479; N = 639.

^aDependent variable: Ever attended a hookah lounge; 'Yes' coded '1' and 'No' coded '0'.

^bOR = Odds Ratio.

^cStatistically significant p values are bolded.

^dAdjusted for age, sex, race/ethnicity, and ever hookah use.

^eHow did you first become aware of hookah lounges? All response categories before collapsing are found in Table 3.

^fHow far your university is to the nearest hookah lounge? Response categories "5 - 10 miles" and "> 10 miles" were collapsed into the single category "< 5 miles".

Table 5

Entertainment and Layout of Hookah Lounges by Ever Hookah Smokers who Ever Attended a Lounge (N = 599)

	N	(%)	Quotes
A. In the hookah lounge that you usually visit, what type of entertainment is usually presented?			
Music	162	(62.3)	'Middle Eastern music, crazy belly dancing music, music over the speakers, surround sound music, music on the televisions, lots of music, light music, loud music, rap music, music videos, stereo music, dancing music, jukebox, DJ, live music, music playlist, live bands, open mic night, singer/song writers'
Belly Dancing /Dancing	31	(11.9)	'belly dancers on weekends, belly dancing on some days, dance floor, dancing'
Movies /Television	24	(9.2)	'movies, cd player, some Televisions, Sports Television, plasma Televisions'
Games	15	(5.8)	'board games, playing cards, chess, pool table'
None	13	(5.0)	'None, usually nothing, nothing we just sat there, just friends'
Other	15	(5.8)	'snacks, smoothies, food, drinks, alcohol, full bar, hookah, Arabic comics, poetry reading, I don't go for entertainment'
B. In the hookah lounge that you usually visit, to your recollection describe the interior layout?			
Seating	55	(35.5)	'a lot of comfortable seating, lots of long cushioned couches and lots of comfy pillows, lots of pillows on the ground, window seats with cushions, low cushioned benches, bar stools, lots of small close tables with chairs or booths around them, lots of tables and heat lamps on patio, funky furniture, ottomans, not too fancy just tables and cheap chairs, plastic chairs'
Layout	37	(23.9)	'big open space with seats lining the walls, coffee house-ish, cafe setting, indoor area with a dance floor, VIP section, it is mostly an open air huge patio, it's pretty small, tightly spaced, it is tiny with two main rooms and two patios, a small two-room place, just like a restaurant, pizza place with pool tables, it has some tables for computers to sit at and study and eat, there is a counter to order hookah and drinks and there is another room with couches and tables for studying or hanging out, there is a bar, a counter for coffee and teas and pastries, next to the cashier is a display case of hookahs and tobacco for sale to smoke at home'
Decoration	32	(20.6)	'Middle Eastern decoration, Arabian, Egyptian décor, Southeast Asia theme, Indian motif with dark jewel tones and rich fabrics and lots of gold accents, red curtains, drape-y things, very bohemian, exotic decorations, very artsy, bamboo walls, paintings, artworks, orange walls, red walls with black draping, dark and brick walls, candles, interesting lamps, dark colors with bright accents, bright colors, mirrors, bead curtains, Turkish carpets, they had a glass bar and a snake in it'
Ambience	17	(11.0)	'colorful with dim lighting, dark, smoky, beautiful, casual, mellow, pretty, laid back, soft and plush, very chill and cozy, warm and comfortable, like a living room in a house, lively, very hippie, lights everywhere, crowded, loud, loud music, loud foreign music'

Due to missing values, variables do not total the sample size 599.

Table 6

Facilitators to Attending Hookah Lounges by Ever Hookah Smokers who Ever Attended a Lounge (N = 599)

	N	(%)	Quotes
A. What do you enjoy most about visiting a hookah lounge?			
Atmosphere	110	(34.2)	'ambiance, unique, very mellow, relaxed environment, chill environment, laid-back atmosphere, atmosphere is comfortable, calm atmosphere for socializing, everyone is friendly, the atmosphere is inviting, fun atmosphere, good atmosphere, enjoying the atmosphere, party atmosphere'
Socializing with friends	82	(25.3)	'bonding time with friends, get together with friends, chillin' with friends, un-wind with friends all in a circle, sharing the experience with friends, something to do with friends, good place to spend time with friends, spending time with amigos'
Socializing with people	44	(13.7)	'social outing, socialize with strangers, the intimate social scene, girls, women, easy to meet people, diverse crowd, people watching'
Hanging out / Relaxing	43	(13.4)	'chilling, it is relaxing, a nice place to hang out, nice way to spend a night, do something different, it's something to do when you are bored, getting out of the house, being able to get off campus, somewhere to go, being somewhere other than a bar, since I can't go to bars, able to stay for a long time and relax, you don't have to be 21 and you can hang out until late (2am),'
Smoking Hookah / Flavors	27	(8.4)	'smoking hookah of course, flavors of tobacco, variety of flavors, lots of different flavors, tasting the different flavors of hookah, I love the taste of a hookah, the smell, better hookah than at a friend's, they have better tobacco than my friends usually buy, no work to setup or clean the hookah, the tobacco and rental are inexpensive, you're surrounded by people who also like to smoke, you don't feel you're bothering anyone who doesn't like it'
Food / Drink	10	(3.1)	'food, tea, coffee'
Music / Belly dancers	6	(1.9)	'music, trippy music, belly dancing, dancing, enjoying entertainment'
B. What are the things that make it easy for you to visit a hookah lounge?			
Friends	69	(44.5)	'friend dragging me there, friends wanting to go, when a big group is going, when a friend drives or when a friend pays, I just go if that's where the events of the evening are, when I'm not smoking I don't pay, I know the owner'
Location	55	(35.5)	'a lot of hookah lounges are around, there are so many close by, close proximity to campus, it's close to school, it's very close to my house, it is a block away, I live next door to a hookah lounge, there is one across the street, close location can even study while smoking, near where I live so I don't have to make my own hookah, nearby location and can be easily found if needed'
Other	31	(19.8)	'I am of age, I own a car and I'm old enough to go anywhere, having money, the time they are open, late hours, don't stink up your own couches, not owning a hookah, not wanting to set up your own hookah, when family visit we make it a point to go together, if there is a patio and I can breathe'

Due to missing values, variables do not total the sample size 599.

Table 7

Barriers to Attending Hookah Lounges by Ever Hookah Smokers who Ever Attended a Lounge (N = 599)

	N	(%)	Quotes
A. What bothers you the most about visiting a hookah lounge?			
Smoke	60	(28.6)	'very smoky inside, thick smoke, too much smoke in the air, smoke in a closed area, I don't always smoke and the smoke bothers me when I'm not smoking, the stench when I walk out, stinks of perfumed tobacco, lack of outside air when indoors, no air, you all smell bad after smoking, smoke stick to my clothes, secondhand smoke all the time, not knowing if the smoke is bad for me'
Other patrons	40	(19.0)	'annoying people, belligerent drunk people, fights, people get weird, the high people, the altered states, obnoxious people bugging you, many young people, the 18 year old kids, underage teens, when people are looking at me, a lot of other people trying to see what flavor your hookah is'
Expensive / Cost	35	(16.7)	'cost, expensive, overpriced, pointless waste of money, having to buy a drink, expensive food and drinks, high cost or having to pay for one hookah per two people, it's a lot more expensive than owning your own hookah'
Crowded	27	(12.9)	'crowded, too many people, not enough space, the wait time to get in, cold patios, its sometimes difficult to find a place to sit inside and then you have to sit outside this sucks especially when its cold outside, people wanting to sit there for hours, more fun at home where you can blow o's'
Nothing	24	(11.4)	'nothing'
Noisy	15	(7.1)	'can be too noisy, loud noises, it's too loud sometimes, loud music'
Sharing	9	(4.3)	'it is filthy and disgusting to touch something with your mouth that someone else did, people sharing and passing the same mouthpiece around, sharing the hookah with people I don't know, unclear hookah, feels dirty'
B. What are some of the barriers to visiting a hookah lounge?			
Expensive / Cost	44	(28.2)	'expensive, cover charge for under 21, having hookahs in my home, don't feel like spending money, lack of money, too much money just to smoke'
Crowded	42	(26.9)	'too crowded, busy nights, limited space, it takes forever to get a table, not enough seating capacity if it is a busy night, sometimes it's just too congested when there's no outside sitting or its full outside, waiting in line is annoying, waiting in line if you get there too late, cold weather on the patio'
Age limit	19	(12.2)	'age limit, age of friends, age requirement, everyone must be 18+ in your group, if you forget your ID no admittance, need valid ID, fence and bouncers at the door'
Transportation	17	(10.9)	'transportation, driving, don't have car'
Nothing	15	(9.6)	'nothing'
Other	19	(12.2)	'bad for health, enclosed patio, too much smoke, no air, some there is no food, I don't like to be around smokers because it makes me want to smoke, my husband doesn't like smoking so I only go without him which is not often anymore'

Due to missing values, variables do not total the sample size 599.