

BACKGROUND

- Hookah smoking is a centuries-old form of tobacco use also known as waterpipe, narghile, shisha, goza, and hubble-bubble.¹
- The exact origin of hookah smoking is unclear, but the practice has historical roots in the Middle East, North Africa, and India.¹⁻⁴
- To smoke hookah, typically a form of moist tobacco is placed in the head of the hookah and covered with perforated aluminum foil, with charcoal placed on top of the foil to provide a heat source. Hookah users inhale through a mouthpiece, drawing air over the charcoal and through the body to heat the tobacco and create tobacco smoke. This smoke is pulled down the body of the hookah into the bowl, which is filled with water. The smoke passes through the water and is inhaled by users via the hose and mouthpiece.⁵
- Hookah is often smoked in group settings and at commercial establishments such as hookah bars.⁶⁻⁸
- Hookah is available in a variety of fruit and candy flavors.^{3,4,8}
- In May 2016, the United States Food and Drug Administration (FDA) finalized a rule that **brings hookah products under its regulatory authority** and extends many of the provisions under the Family Smoking Prevention and Tobacco Control Act to hookah.⁹

A national study found that young adults who perceived hookah to be less harmful than cigarettes at baseline were more likely to use hookah in a six-month period.



PATTERNS OF USE IN THE U.S.

Youth

- From 2011 to 2015, significant increases were observed for past 30-day hookah use. The prevalence more than doubled for **middle school students and largely high school students from 2011 to 2014.**¹⁰ (Figure 1)
- According to the National Youth Tobacco Survey (NYTS), the prevalence of past 30-day hookah use was 7.2% among all high school students and 2.0% among all middle school students in 2015.¹⁰
- Among youth, hookah use is higher among Hispanic high school and middle school students.¹⁰ (Figure 2)
- In past 30-day hookah users in 2014, the prevalence of past 30-day flavored hookah tobacco was 63.8% among all high school students and 44.3% among all middle school students.¹⁴

Figure 1. Past 30-Day Prevalence of Youth Hookah Use Among Middle and High School Students, NYTS 2011-2015¹⁰⁻¹³

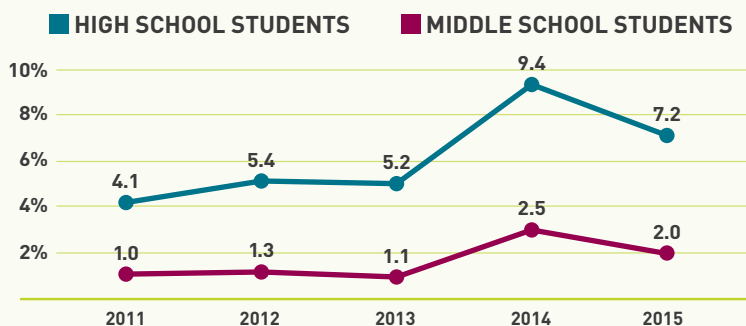
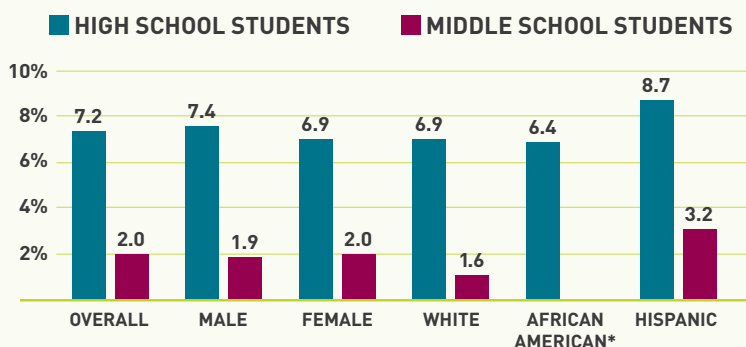


Figure 2. Past 30-Day Prevalence of Youth Hookah Use Among Middle and High School Students in 2015 by Gender and Race/Ethnicity¹⁰

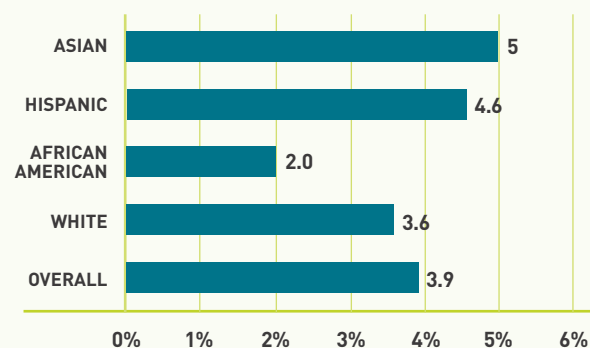


*Data not available for African American middle school students

Young Adults & Adults

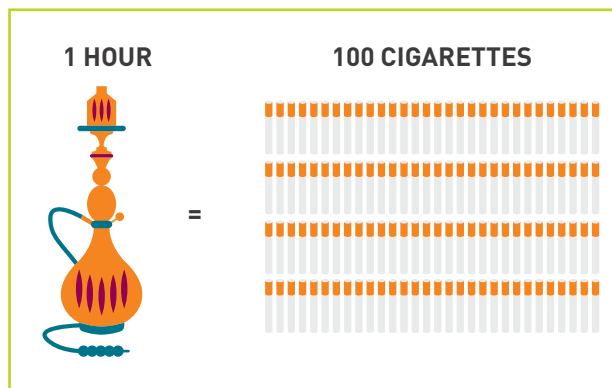
- Adult hookah use is higher among younger adults.
 - Respondents in the 2012-2013 National Adult Tobacco Survey (NATS) reported that “every day” or “someday” use of hookah was 0.5% in adults overall, but 2.5% in 18-24 year olds and 0.5% in 25-44 year olds.¹⁵
 - From 2012-2013, those who reported hookah use “every day,” “someday,” or “rarely” was 3.9% in adults, with the highest prevalence in 18-24 year olds (18.2%) and 3.9% in 25-44 year olds.¹⁵

Figure 3. Prevalence of Adult “Every day,” “Someday,” or “Rarely” Hookah Users by Race/Ethnicity in the United States from 2012-2013, NATS¹⁵

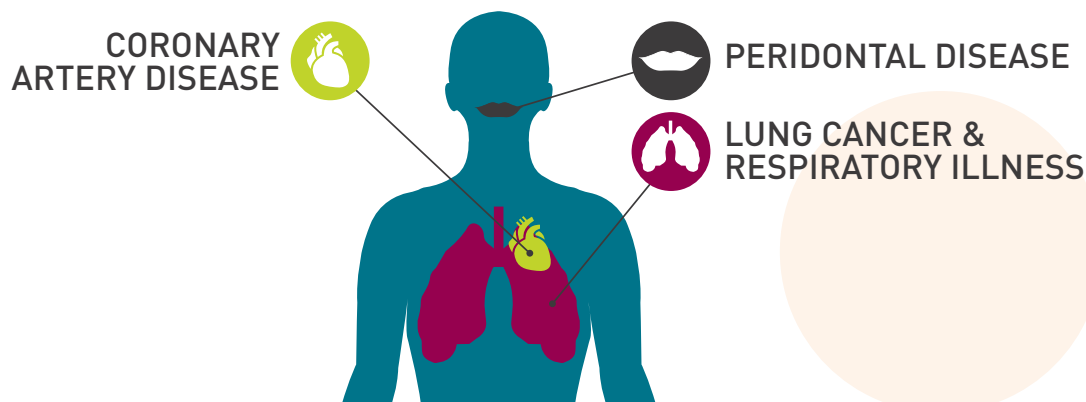


HEALTH & SAFETY

- A typical **1-hour long hookah smoking session can result in inhalation of the amount of smoke produced by 100 or more cigarettes.**⁵
- Hookah smoke exposes users to many of the same toxicants found in cigarette smoke.^{16,17} Hookah use is associated with significant nicotine and toxicant exposure including carbon monoxide, tobacco-specific nitrosamines, and polycyclic aromatic hydrocarbons.¹⁸⁻²¹ As a result of this exposure, **hookah users may be at risk for many of the same diseases as cigarette smokers.**²²⁻²⁵
- **Youth use of nicotine in any form is unsafe.** Nicotine use during adolescence can disrupt the formation of brain circuits that control attention, learning, and susceptibility to addiction.^{26,27}
- While research on the health effects of hookah use is limited, it indicates that **hookah users may have a greater risk of lung cancer and respiratory illness,**²²⁻²⁵ **periodontal disease,**²² and **coronary artery disease relative to non-hookah users.**²⁸
- Using hookah while pregnant may increase the risk of low birthweight.²²
- Current research shows that non-users are exposed to secondhand hookah smoke^{29,30} and that high levels of particulate matter are present in hookah cafes, or indoor smoking venues.^{31,32}



HOOKAH USERS FACE GREATER RISKS OF



PERCEPTIONS OF HOOKAH IN THE U.S.

Awareness

- In 2012, more than half (51.3%) of high school students and more than a quarter (28.1%) of middle school students were aware of hookah.³³

Harm Perceptions

- Individuals largely **perceive hookah as less harmful than cigarettes**³⁴ and in U.S. college and graduate students, perceptions of hookah as less harmful and less addictive relative to cigarettes are positively associated with past year and past 30-day use of hookah.³⁵⁻³⁷ Young adults who report using hookah more frequently are also more likely to indicate that hookah is less harmful than cigarettes.³⁸
- A national study found that **young adults who perceived hookah to be less harmful than cigarettes at baseline were more likely to use hookah in a six-month period.**³⁹
- Respondents from a nationally representative sample of young adults 18-34 were more likely to rate hookah (24.5%) as being less risky compared to noncombustible snus (10%) and other smokeless tobacco products (7.1%) relative to cigarettes.⁴⁰

MARKETING IN THE U.S.

- Currently the marketing of hookah is largely limited to specialized stores and the Internet.^{4,41}
- Some hookah venues offer a variety of Mediterranean and American food and even alcohol, whereas others may attract customers through belly dancers, poker nights, musical performances, or free Wi-Fi access.⁴²
- Websites advertising for hookah cafes use text, images, or audio stimuli to promote hookah smoking as a safe, fun, relaxing, and “tasty” way to socialize with friends.⁴³
- Many hookah companies offer multiple flavors in their product lineup, which may entice hookah use among young people.⁴²



* actual hookah promotions found online

POLICY IN THE U.S.

Youth Access

- **A federal minimum age of 18 for hookah sales.**⁹ Some research shows repeated failures of age verification at cafes or on websites in the United States, which may entice minors to hookah cafes, making this provision all the more important.⁴²
- **Retailers must verify age by photographic identification.**⁹ The FSPTCA required FDA to issue regulations to establish age verification requirements for the internet and other non-face-to-face purchases of tobacco products. However, FDA has yet to promulgate such regulations.⁴⁴
- Prohibits free samples of hookah and prohibits vending machine sales of hookah.⁹

Flavored Hookah Tobacco

- Currently there are **no federal laws or regulations restricting the manufacture of flavored hookah products.**
- Several localities, including Providence, RI; New York, NY; Chicago, IL; Minneapolis and St. Paul, MN; and Boston, MA have instituted some form of **ban on the sale of flavored tobacco**, which includes hookah tobacco.



Warning Labels

- FDA's final deeming regulation required the following warning to be included on all tobacco products:
 - **WARNING: This product contains nicotine. Nicotine is an addictive chemical.**
- This is the only warning label currently required on hookah products.

Taxes

- Hookah tobacco is considered to be pipe tobacco for tax purposes.⁴⁵
- The Children's Health Insurance Program Reauthorization Act (CHIPRA) of 2009 increased the federal excise taxes on pipe tobacco from \$1.10 per pound to \$2.83 per pound.⁴⁶
- At the state level, hookah would be taxed in the "other tobacco product" (OTP) category. The tax rate in the states for this category ranges from \$0 (PA does not currently have an OTP tax) to 95% of the Wholesale price in WA.⁴⁷



where we stand: hookah

Truth Initiative's mission is to achieve a culture where all youth and young adults reject tobacco. Consistent with Truth Initiative's vision of a future where tobacco is a thing of the past, we support the following policies with regard to hookah:

- Given their well-documented appeal to youth, **all flavors (including menthol) should be eliminated from hookah and related products.**
- **The marketing of hookah products should be restricted so that it does not target or appeal to youth.**
- **Sales of hookah products and entry to hookah bars and similar establishments should be limited to those 21 and older.**
- **Internet and other non-face-to-face sales of hookah products should be prohibited.**
- **Hookah use should be covered by smoke-free laws and requirements with no exceptions for "hookah bars".**
- **Hookah products should carry appropriate health warning labels.**
- **We support taxation proportional to the harms of each type of tobacco product (e.g., cigarette, hookah) to discourage use of the most harmful products. As a highly harmful combustible tobacco product, hookah should be taxed at a significantly higher rate than less harmful tobacco products.**

TRUTH INITIATIVE PUBLICATIONS ON HOOKAH

- Cohn A, Villanti A, Richardson A, et al. The association between alcohol, marijuana use, and new and emerging tobacco products in a young adult population. *Addictive Behaviors*. 2015;48(Sept):79-88.
- Villanti, A., Rath, J., Williams, V., Cohn, A., Cobb, C. Correlates of Hookah Use and Predictors of Hookah Trial in U.S. Young Adults. *American Journal of Preventive Medicine*. 2015 Jun;48(6):742-6.
- Villanti AC, Pearson JL, Cantrell J, Vallone DM, Rath JM. Patterns of combustible tobacco use in U.S. young adults and potential response to graphic cigarette health warning labels. *Addictive Behaviors*. 2015;42:119-125.
- Richardson A, Williams V, Rath J, Villanti AC, Vallone D. The Next Generation of Users: Prevalence and Longitudinal Patterns of Tobacco Use Among US Young Adults. *American Journal of Public Health*. 2014;104(8):1429-1436.
- Villanti AC, Richardson A, Vallone DM, Rath JM. Flavored tobacco product use among U.S. young adults. *American Journal of Preventive Medicine*. 2013;44(4):388-391.
- Rath JM, Villanti AC, Abrams DB, Vallone DM. Patterns of Tobacco Use and Dual Use in U.S. Young Adults: The missing link between youth prevention and adult cessation. *Journal of Environmental and Public Health*. 2012: <http://www.hindawi.com/journals/jeph/2012/679134/>



HOOKAH



2011: **APPROX. 800,000 YOUTH USERS**



2015: **1.26 MILLION YOUTH USERS**

Hookah is increasingly popular with youth. **From 2011 to 2015, the prevalence of recent hookah use among high school and middle school students rose by more than 50%.**

Flavored hookah is appealing to young people



In 2015, **7.2% of high school students and 2.0% of middle school students** said they smoked hookah in the last 30 days.

Flavors are driving hookah use. **63.8% of current hookah smokers in high school and 44.3% of current hookah smokers in middle school** said they smoked flavored hookah.

PAST 30-DAY HOOKAH USE

SMOKED HOOKAH

HOOKAH SMOKERS WHO USED FLAVORS



7.2%
HIGH SCHOOL

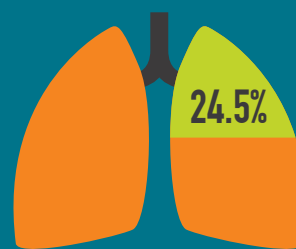
2.0%
MIDDLE SCHOOL

63.8%
HIGH SCHOOL

44.3%
MIDDLE SCHOOL

Young adults are misinformed about the risks. **24.5% of young adults 18-34 years old** say hookah is less risky than cigarettes.

The misperceptions of hookah as less harmful and less addictive relative to cigarettes are positively associated with smoking hookah among U.S. college and graduate students.



BUT HOOKAH IS DEADLY

A typical 1-hour long hookah smoking session can result in inhalation of the amount of smoke produced by 100 or more cigarettes.

1hr = 100+



REFERENCES

1. American Lung A. An Emerging Deadly Trend: Waterpipe Tobacco Use. Tobacco Trend Alert;2007.
2. Hammal F, Mock J, Ward KD, Eissenberg T, Maziak W. A pleasure among friends: how narghile (waterpipe) smoking differs from cigarette smoking in Syria. *Tob Control*. 2008;17(2):e3.
3. Aljarrah K, Ababneh ZQ, Al-Delaimy WK. Perceptions of hookah smoking harmfulness: predictors and characteristics among current hookah users. *Tob Induc Dis*. 2009;5(1):16.
4. Cobb C, Ward KD, Maziak W, Shihadeh AL, Eissenberg T. Waterpipe tobacco smoking: an emerging health crisis in the United States. *Am J Health Behav*. 2010;34(3):275-285.
5. World Health Organization. Advisory Note: Waterpipe Tobacco Smoking: Health Effects, Research Needs and Recommended Actions by Regulators. 2005.
6. Jarrett T, Blossnich J, Tworek C, Horn K. Hookah use among U.S. college students: results from the National College Health Assessment II. *Nicotine Tob Res*. 2012;14(10):1145-1153.
7. Ward KD, Eissenberg T, Gray JN, Srinivas V, Wilson N, Maziak W. Characteristics of U.S. waterpipe users: a preliminary report. *Nicotine Tob Res*. 2007;9(12):1339-1346.
8. Smith-Simone S, Maziak W, Ward KD, Eissenberg T. Waterpipe tobacco smoking: knowledge, attitudes, beliefs, and behavior in two U.S. samples. *Nicotine Tob Res*. 2008;10(2):393-398.
9. Food and Drug Administration. Deeming Tobacco Products To Be Subject to the Federal Food, Drug, and Cosmetic Act, as Amended by the Family Smoking Prevention and Tobacco Control Act; Regulations on the Sale and Distribution of Tobacco Products and Required Warning Statements for Tobacco Products. Vol 79 FR 231412014.
10. Singh T, Arrazola RA, Corey CG, et al. Tobacco Use Among Middle and High School Students - United States, 2011-2015. *MMWR Morb Mortal Wkly Rep*. 2016;65(14):361-367.
11. Tobacco product use among middle and high school students--United States, 2011 and 2012. *MMWR Morb Mortal Wkly Rep*. 2013;62(45):893-897.
12. Arrazola RA, Neff LJ, Kennedy SM, Holder-Hayes E, Jones CD. Tobacco use among middle and high school students - United States, 2013. *MMWR Morb Mortal Wkly Rep*. 2014;63(45):1021-1026.
13. Arrazola RA, Singh T, Corey CG, et al. Tobacco use among middle and high school students—United States, 2011-2014. *MMWR Morb Mortal Wkly Rep*. 2015;64(14):381-385.
14. Corey CG, Ambrose BK, Apelberg BJ, King BA. Flavored Tobacco Product Use Among Middle and High School Students - United States, 2014. *MMWR Morb Mortal Wkly Rep*. 2015;64(38):1066-1070.
15. Agaku IT, King BA, Husten CG, et al. Tobacco product use among adults--United States, 2012-2013. *MMWR Morb Mortal Wkly Rep*. 2014;63(25):542-547.
16. Shihadeh A. Investigation of mainstream smoke aerosol of the argileh water pipe. *Food Chem Toxicol*. 2003;41(1):143-152.
17. Shihadeh A, Saleh R. Polycyclic aromatic hydrocarbons, carbon monoxide, "tar", and nicotine in the mainstream smoke aerosol of the narghile water pipe. *Food Chem Toxicol*. 2005;43(5):655-661.
18. Cobb CO, Shihadeh A, Weaver MF, Eissenberg T. Waterpipe Tobacco Smoking and Cigarette Smoking: A Direct Comparison of Toxicant Exposure and Subjective Effects. *Nicotine & Tobacco Research*. 2011;13(2):78-87.
19. Blank MD, Cobb CO, Kilgalen B, et al. Acute effects of waterpipe tobacco smoking: a double-blind, placebo-control study. *Drug and alcohol dependence*. 2011;116(1):102-109.
20. Jacob P, Raddaha AHA, Dempsey D, et al. Nicotine, carbon monoxide, and carcinogen exposure after a single use of a water pipe. *Cancer Epidemiology Biomarkers & Prevention*. 2011;20(11):2345-2353.
21. Al Ali R, Rastam S, Ibrahim I, et al. A comparative study of systemic carcinogen exposure in waterpipe smokers, cigarette smokers and non-smokers. *Tob Control*. 2015;24(2):125-127.
22. Akl EA, Gaddam S, Gunukula SK, Honeine R, Jaoude PA, Irani J. The effects of waterpipe tobacco smoking on health outcomes: a systematic review. *Int J Epidemiol*. 2010;39(3):834-857.
23. Khabour OF, Alzoubi KH, Bani-Ahmad M, Dodin A, Eissenberg T, Shihadeh A. Acute exposure to waterpipe tobacco smoke induces changes in the oxidative and inflammatory markers in mouse lung. *Inhal Toxicol*. 2012;24(10):667-675.
24. Rammah M, Dandachi F, Salman R, Shihadeh A, El-Sabban M. In vitro cytotoxicity and mutagenicity of mainstream waterpipe smoke and its functional consequences on alveolar type II derived cells. *Toxicol Lett*. 2012;211(3):220-231.
25. Rammah M, Dandachi F, Salman R, Shihadeh A, El-Sabban M. In vitro effects of waterpipe smoke condensate on endothelial cell function: a potential risk factor for vascular disease. *Toxicol Lett*. 2013;219(2):133-142.
26. U. S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress. Centers for Disease Control and Prevention,, National Center for Chronic Disease Prevention and Health Promotion,, Office on Smoking and Health;2014.
27. England LJ, Bunnell RE, Pechacek TF, Tong VT, McAfee TA. Nicotine and the Developing Human: A Neglected Element in the Electronic Cigarette Debate. *Am J Prev Med*. 2015;49(2):286-293.
28. Sibai AM, Tohme RA, Almedawar MM, et al. Lifetime cumulative exposure to waterpipe smoking is associated with coronary artery disease. *Atherosclerosis*. 2014;234(2):454-460.
29. Kassem NO, Daffa RM, Liles S, et al. Children's exposure to secondhand and thirdhand smoke carcinogens and toxicants in homes of hookah smokers. *Nicotine Tob Res*. 2014;16(7):961-975.
30. Maziak W, Rastam S, Ibrahim I, Ward KD, Eissenberg T. Waterpipe-associated particulate matter emissions. *Nicotine Tob Res*. 2008;10(3):519-523.
31. Fiala SC, Morris DS, Pawlak RL. Measuring indoor air quality of hookah lounges. *Am J Public Health*. 2012;102(11):2043-2045.
32. Cobb CO, Vansickel AR, Blank MD, Jentink K, Travers MJ, Eissenberg T. Indoor air quality in Virginia waterpipe cafes. *Tob Control*. 2013;22(5):338-343.
33. Wang B, King BA, Corey CG, Arrazola RA, Johnson SE. Awareness and use of non-conventional tobacco products among U.S. students, 2012. *Am J Prev Med*. 2014;47(2 Suppl 1):S36-52.
34. Akl EA, Jawad M, Lam WY, Co CN, Obeid R, Irani J. Motives, beliefs and attitudes towards waterpipe tobacco smoking: a systematic review. *Harm Reduct J*. 2013;10:12.
35. Primack BA, Sidani J, Agarwal AA, Shadel WG, Donny EC, Eissenberg TE. Prevalence of and associations with waterpipe tobacco smoking among U.S. university students. *Ann Behav Med*. 2008;36(1):81-86.
36. Sutfin EL, McCoy TP, Reboussin BA, Wagoner KG, Spangler J, Wolfson M. Prevalence and correlates of waterpipe tobacco smoking by college students in North Carolina. *Drug Alcohol Depend*. 2011;115(1-2):131-136.
37. Heinz AJ, Giedgowd GE, Crane NA, et al. A comprehensive examination of hookah smoking in college students: use patterns and contexts, social norms and attitudes, harm perception, psychological correlates and co-occurring substance use. *Addict Behav*. 2013;38(11):2751-2760.
38. Aljarrah K, Ababneh ZQ, Al-Delaimy WK. Perceptions of hookah smoking harmfulness: predictors and characteristics among current hookah users. *Tob Induc Dis*. 2009;5(1):16.
39. Villanti AC, Cobb CO, Cohn AM, Williams VF, Rath JM. Correlates of hookah use and predictors of hookah trial in U.S. young adults. *Am J Prev Med*. 2015;48(6):742-746.
40. Wackowski OA, Delnevo CD. Young Adults' Risk Perceptions of Various Tobacco Products Relative to Cigarettes: Results From the National Young Adult Health Survey. *Health Educ Behav*. 2015.
41. Merlyn A, Griffiths, Tracy R. Harmon, Gilly MC. Hubble Bubble Trouble: The Need for Education About and Regulation of Hookah Smoking. *Journal of Public Policy & Marketing*. 2011;30(1):119-132.
42. Haddad L, El-Shahawy O, Ghadban R, Barnett TE, Johnson E. Waterpipe Smoking and Regulation in the United States: A Comprehensive Review of the Literature. *Int J Environ Res Public Health*. 2015;12(6):6115-6135.
43. Primack BA, Rice KR, Shensa A, et al. U.S. hookah tobacco smoking establishments advertised on the internet. *Am J Prev Med*. 2012;42(2):150-156.
44. 26 U.S.C. 5702.
45. Morris DS, Fiala SC, Pawlak R. Opportunities for policy interventions to reduce youth hookah smoking in the United States. *Prev Chronic Dis*. 2012;9:E165.
46. Alcohol and Tobacco Tax and Trade Revenue. Tax and Fee Rates. 2016; https://www.ttb.gov/tax_audit/atftaxes.shtml.
47. Federation of Tax Administrators. Other Tobacco Products Tax. 2016; <http://www.taxadmin.org/assets/docs/Research/Rates/otp.pdf>.