

# Hookah's New Popularity Among US College Students

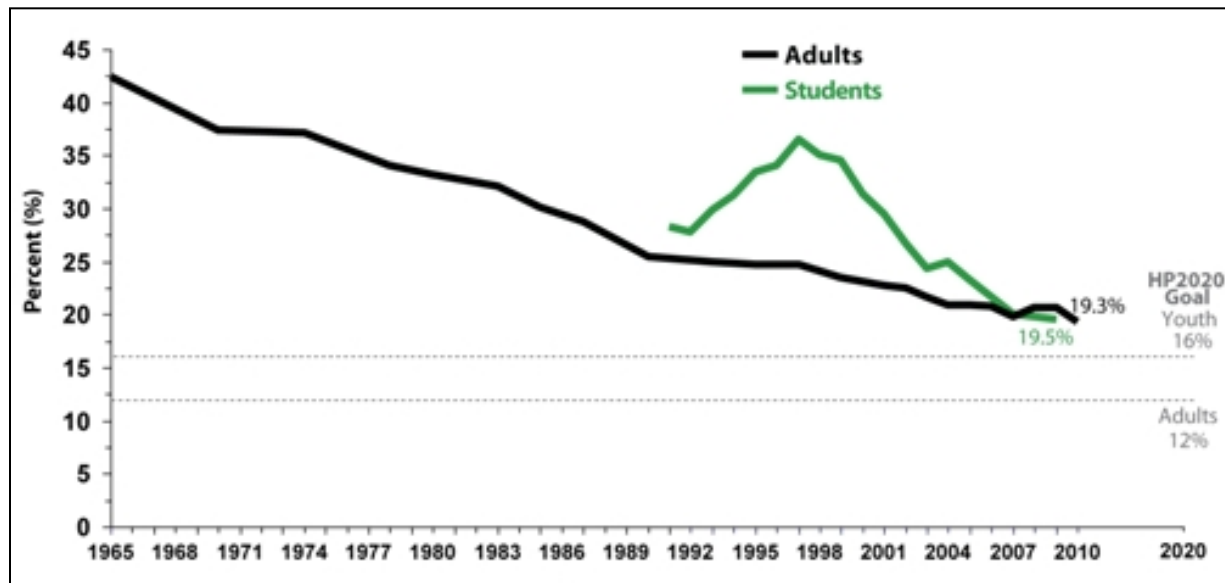


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# BACKGROUND: US SMOKING TRENDS

- Cigarette smoking is the leading *preventable* cause of morbidity and mortality worldwide.
- Recent public health efforts have resulted in the decrease of smoking prevalence.



# BACKGROUND: WHAT IS HOOKAH?

- Also known at “shisha”, “narghile” and “waterpipe”
- Origins in the Middle East and North Africa
- Social, shared experience, hookah bars
- Global resurgence: adolescents & young adults



# BACKGROUND: HEALTH EFFECTS OF HOOKAH

## Hookah vs cigarettes

- Longer smoking session (45-60min)
- Equivalent to smoking 5 packs of cigarettes

## Health effects of hookah smoking

- Cancers: lung, oral, stomach
- Reduced lung function, low birthweight
- Second hand smoke, infectious disease

## Hookah myths

- Not addictive, easy to quit, less toxic, safe

## Policy, prevention & intervention efforts

- May undermine tobacco control

# RESEARCH GOALS

## Objective

*To describe the hookah smoking practices of college students.*

## Specific Aims

- 1) To determine the prevalence of hookah use among US college students.
- 2) To identify substances commonly smoked in hookahs and other substance use characteristics of hookah smokers.

# METHODS

**Study Design:** Secondary analysis of cross-sectional study

**Participants:** College students from University of Washington & University of Wisconsin\*

**Setting:** Recruited from Facebook ([www.Facebook.com](http://www.Facebook.com))

- **Inclusion Criteria for Facebook profiles:**

- Public Facebook profiles
- 18-20 years of age
- Freshman, sophomore, junior status
- Evidence of recent (30 day) profile activity

The Facebook logo, consisting of the word "facebook" in white lowercase letters on a blue rectangular background.

\*IRB approval was obtained from both universities. All participants consented.

# METHODS: DATA COLLECTION & ANALYSIS

## Online survey

- Demographics
- Lifetime hookah use
- Substances smoked in a hookah
- Substance use including cigarettes and marijuana

## Analysis

- Descriptive statistics were used to describe the sample's demographics and survey data
- Logistic regression was used to build a multivariate model of hookah use, including the covariates of age, gender, race/ethnicity, university, and substance use

## RESULTS: OVERALL SAMPLE

- 307 Facebook profiles met inclusion criteria
- 216 participants completed the survey (70% response rate)
  - Average age of 18.8 years (SD 0.7)
  - 53% female
  - 70% Caucasian
  - 47% from University of Washington



# RESULTS: SURVEY DATA

*Aim 1: To determine the prevalence of hookah use among US college students.*

Table 1. Endorsement of substance use (n=216)

Substance	n	%
Marijuana*	66	30.9
Hookah	60	27.8
Cigarettes	35	16.2
Smokeless tobacco	9	4.2

\*3 missing values

# RESULTS: SURVEY DATA

*Aim 1: To determine the prevalence of hookah use among US college students.*

## Hookah smokers:

- 18.8 years old
- 51.7% male
- 76.7% Caucasian
- 45% from University of Washington

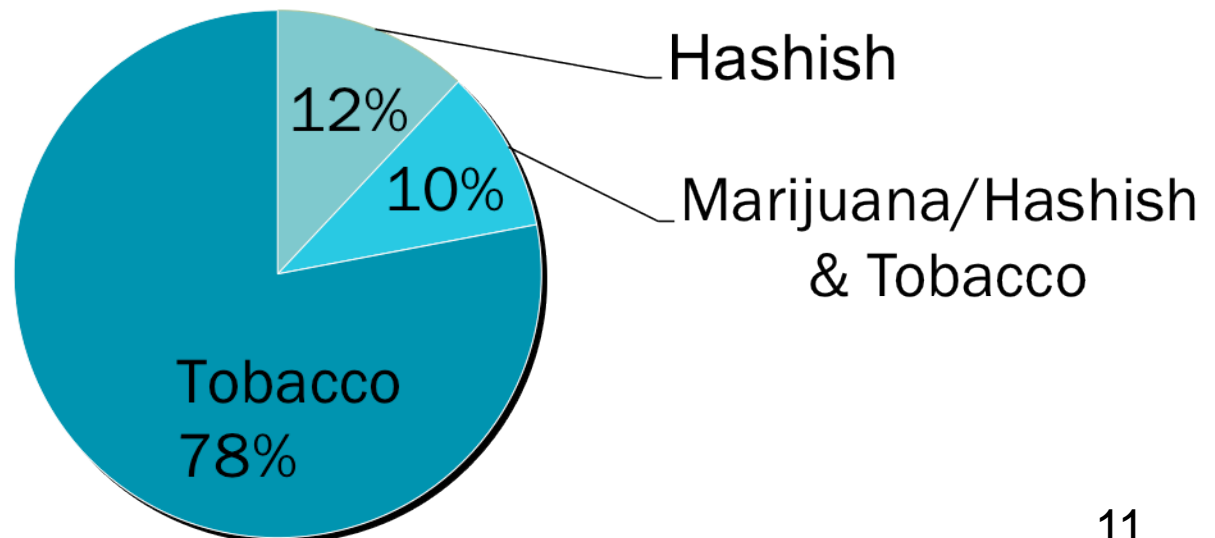
## Frequency of hookah smoking:

- 21.6% were current users
- 78.3% smoked hookah monthly or less

## RESULTS: SURVEY DATA

*Aim 2: To identify substances commonly smoked in hookahs and other substance use characteristics of hookah smokers.*

Figure 1. Substances smoked in a hookah (n=59)



## RESULTS: SURVEY DATA

*Aim 2: To identify substances commonly smoked in hookahs and other substance use characteristics of hookah smokers.*

**Table 2. Substance endorsement by hookah Use**

	Hookah Smokers (n=60)	Non Hookah Smokers (n=155)*
Cigarettes only	0	4.5%
Marijuana only	35%	11%
Marijuana & cigarettes	40%	2.5%
None	25%	82%

\*1 missing observation

## RESULTS: SURVEY DATA

*Aim 2: To identify substances commonly smoked in hookahs and other substance use characteristics of hookah smokers.*

Table 3. Multivariate logistic regression modeling of lifetime hookah use (n=216)

	Unadjusted OR (95% CI)	Adjusted OR* (95% CI)
Cigarettes	8.79 (3.94-19.59)	3.41 (1.20-9.64)**
Marijuana	19.14 (9.10-40.27)	15.01 (6.50-34.65)**

\* Adjusted for age, gender, race, & university, cigarettes/marijuana

\*\* p<0.05

# CONCLUSIONS

- More than a quarter of college students have smoked hookah
- Tobacco is the most common substance smoked in hookahs, but 1 in 5 smoke marijuana in their hookah.
- Hookah users are more likely than non-hookah users to also smoke cigarettes and marijuana

# LIMITATIONS

- Only one social networking website was used for recruitment
- Representative sample?
- Cross-sectional study design

# IMPLICATIONS & FUTURE DIRECTIONS

- Pair existing tobacco and marijuana strategies to target college hookah smokers.
- Use Facebook to screen and identify hookah use among college students
  - More work is needed to explore the presence and meaning of hookah displays on Facebook





# ACKNOWLEDGEMENTS

## Thesis Committee:

Dimitri A Christakis, MD, MPH (Chair)

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Abigail Halperin, MD, MPH



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QUESTIONS?





# FUTURE RESEARCH

- **Why and how is hookah use being promoted amongst teens and young adults?**
- **Cohort/case-control studies will help elucidate progression to or from hookah use regarding other substance use**
- **Who is responsible for prevention/intervention efforts?**