

Hookah Use Behavior and Hookah Bar Locations in Florida

Prepared by

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Primary Goal

To determine the

- prevalence of hookah use in Florida, and
- number and location of hookah bars in Florida

Objectives

- Complete a literature review that compiles information about hookah use behaviors and hookah bar prevalence in the United States and Florida.
- Provide the prevalence of hookah use and the use of other tobacco products among Florida's adults, young adults, and youth.
- Determine which demographic characteristics are significantly associated with hookah use behaviors in Florida.
- Determine the number of hookah bars in Florida and their distribution across the state.

Background

- Hookah is a tobacco smoking device that indirectly heats loose tobacco using burning charcoal and allows for tobacco smoke to pass through water before it is inhaled (American Lung Association, 2007).
- There is a worldwide increase in the use of alternative tobacco products such as hookah, especially among youth and young adults (Dybing et al., 2005).
- Hookah tobacco smoking is widely perceived as being less harmful than cigarette smoking (Smith-Simon et al., 2008; Maziak et al., 2007).
- Limited research on the health effects of smoking tobacco using hookah does not indicate reduction in health risks relative to tobacco smoking.
 - Smoking tobacco using hookah may cause tobacco dependence and health problems such as coronary heart disease (Smith-Simon et al., 2008; Jabbour et al., 2003).

Literature Review

- Search strategy
- Summarizing the findings

Search Strategy

- This review was conducted using two Web-searchable databases:
 - PubMed (2005–date)
 - Science Citation Index (2005–date)
- Search terms included all possible names for hookah (e.g., waterpipe, narghile, shisha, sheesha, goza, argilah, lula, lulava, shishe, nargila, cachimba, ghalyoon, chillim, hubble bubble, huqqa).
- Articles were selected based on the following criteria:
 - Time period: Articles published from 2005 to present
 - Publication language: English
 - Publication type: Peer-reviewed journal articles

Summary of Findings

- The estimated prevalence for hookah use in the United States is unknown.
- Most U.S. studies are conducted using convenience samples for certain groups of youth or young adults.
- A study conducted by Barnett et al. (2009) found that the prevalence of ever smoked hookah in Florida is 11% among high school students and 4% among middle school students.

Summary of Findings (cont.)

- Three articles have estimated the number of hookah bars in the United States based on press reports and trade publications (Cobb et al., 2010; Primak et al., 2008, 2009):
 - In 2004, it was reported in *smokeshop* magazine that between 200 and 300 new hookah bars had opened in the United States, often in big cities, near college or university campuses (Cobb et al., 2010).
 - Barnett suggested that at least 100 hookah bars likely exist in Florida, and most of them have opened within the past few years (physorg.com).

Prevalence of Hookah Use from the Available Literature – U.S. Studies

Published year	Author(s)	Sample size	Age group of study	Ever used hookah	Used hookah in past 30 days
2005	Templin T, et al.	2,454	High School students	36.0%	15.0%
2006	Rice VH, et al.	1,671	High School students (14-18)	27.0%	--
2007	Ward KD, et al.	20,673	17-35	--	0.3% (in past 12 months following Basic Military Training).
2007	Smith SY, et al.	411	18-20	--	15.3%
2008	Grekin E, et al.	602	Undergraduates	15.1%	--
2008	Primack BA, et al.	647	Undergraduate and graduate students at University of Pittsburgh	41.0%	9.5%
2008	Eissenberg T, et al.	744	18-20	48.4%	20.4%
2008	Weglicki LS, et al.	1,872	High School students	Among Arab Americans: 38.0% Among non-Arab-Americans: 21.3%	Among Arab Americans: 16.7% Among non-Arab-Americans: 11.3%
2009	Primack BA, et al.	6,594	MS and HS Students	Overall: 6.4% (MS: 2.1%, HS: 10.3%)	Overall: 3.5% (MS: 1.4%, HS: 5.4%)
2009	Barnett TE, et al.	5,037 MS, 4,028 HS	MS and HS Students	MS: ≈4%, HS: ≈11%	--
2010	Jamil H, et al.	245	18+	25.8%	18.8%
2010	Primack BA, et al.	8,745	College athletes (18-24, mostly)	29.5%	7.2%

Hookah Use Prevalence in Florida

Florida estimates for ever and current hookah use are available from three surveys:

- Florida Adult Tobacco Survey (2007–2009 FLATS)
- Florida Young Adult Tobacco Survey (2009 FYATS)
- Florida Youth Tobacco Survey (2007–2009 FYTS)

Florida Adult Tobacco Survey (2007–2009 FLATS)

- **FLATS is a confidential telephone survey conducted annually by the Florida Department of Health.**
 - FLATS provides smoking and tobacco-related health behaviors information among the adult population in Florida.
 - Survey interview participation is based on random selection of adults from randomly selected households in Florida.
 - FLATS data are weighted to account for gender, age, and race/ethnicity distribution of the adult population in Florida.
- **FLATS question related to hookah use:**
 - Have you ever smoked tobacco from a water pipe (also called a hookah)?
- **Sample sizes:**
 - 2007 FLATS: $N = 4,350$
 - 2008 FLATS: $N = 8,355$
 - 2009 FLATS: $N = 4,614$

Florida Young Adult Tobacco Survey (2009 FL YATS)

- **FL YATS is a random-digit-dial (RDD) study of young adults, aged 18 to 24, living in Florida.**
 - FL YATS is a cross-sectional survey, designed by RTI, and includes questions that are tailored to young adults to help to understand how the program is influencing smoking rates among this age group in Florida.
 - FL YATS sample includes landline numbers and RDD cell phone numbers to improve the scope of young adult presentation in the sample.
 - FL YATS data are weighted to account for the sample stratification.
- **FL YATS questions related to hookah use:**
 - Do you now use hookah pipes?
 - Do you now use hookah pipes every day or some days?
- **Sample size:**
 - 2009 FL YATS: $N = 2,044$

Florida Youth Tobacco Survey (2007–2009 FYTS)

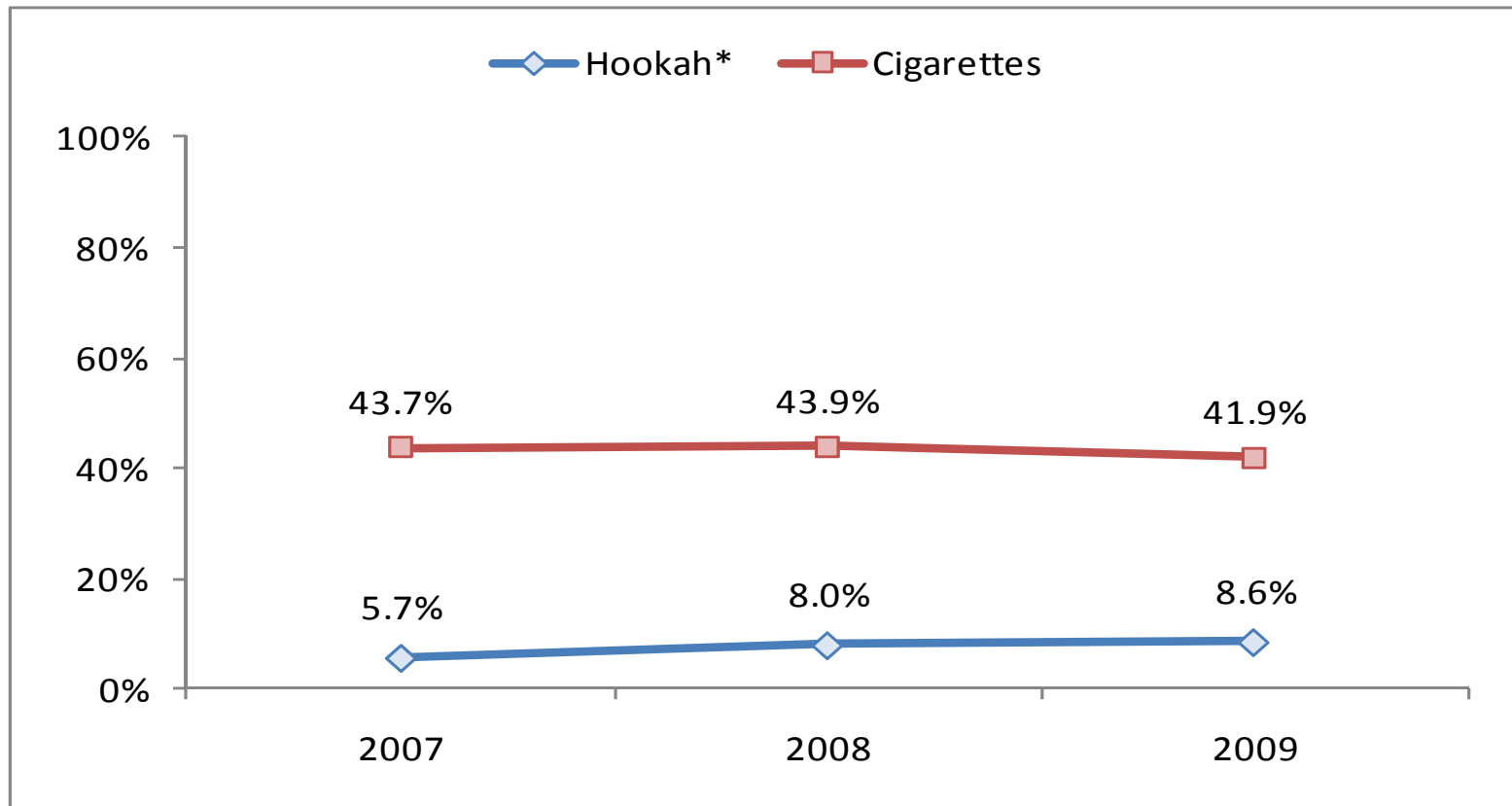
- **FYTS is a statewide confidential survey of public middle and high school students in Florida.**
 - FYTS provides indicators of tobacco use and exposure to secondhand smoke among Florida 6–12 grade students.
 - FYTS has a two-stage cluster probability sample design: (1) schools are randomly selected to participate in the study; and (2) within the selected schools, random sample of classrooms is selected.
- **FYTS questions related to hookah use:**
 - Have you ever smoked tobacco out of a water pipe (also called “hookah”), even one or two puffs? (asked in 2007 FYTS)
 - Have you ever tried, even one or two puffs, smoking tobacco out of a water pipe (also called a “hookah”)? (asked in 2008-2009 FYTS)
 - During the past 30 days, have you smoked tobacco out of a water pipe (also called a “hookah”)? (asked in 2009 FYTS)
- **Sample sizes**
 - 2007 FYTS: $N = 8,995$
 - 2008 FYTS: $N = 77,003$
 - 2009 FYTS: $N = 11,898$

Analysis Methods Overview

- For each of the three datasets from FLATS, FL YATS, and FYATS, we conducted the following types of analyses when applicable:
 - Unadjusted trend analysis (data from 2007–2009 surveys):
 - Determine the significance and direction of hookah use and cigarette smoking trends across survey years.
 - Descriptive (data from 2009 surveys):
 - Present weighted estimates of hookah use behaviors, overall and by demographic characteristics.
 - Present weighted estimates for the use of each tobacco product .
 - Bivariate (data from 2009 surveys):
 - Conduct chi-square test to determine which demographic characteristics are significantly associated with hookah use behaviors.

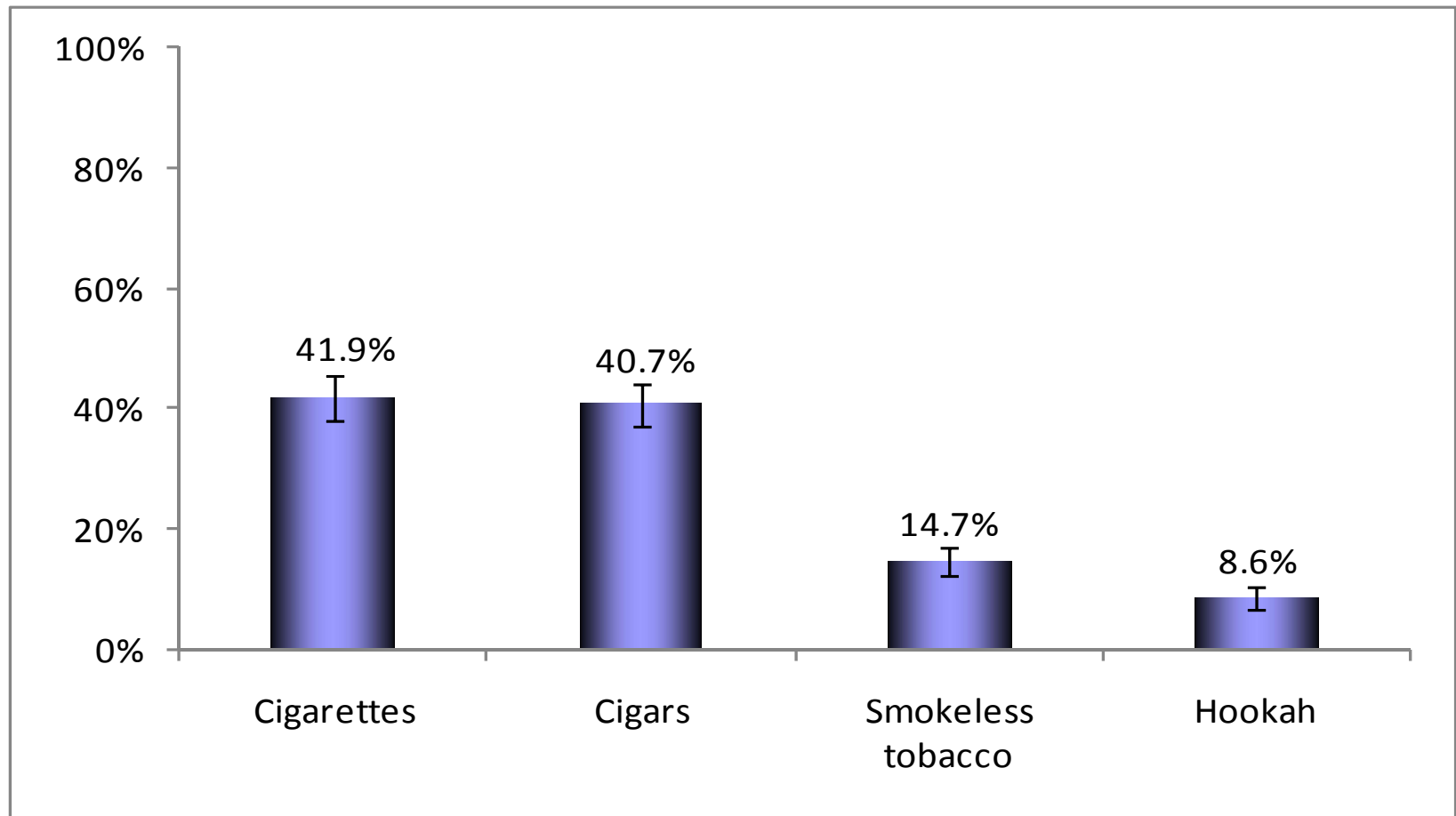
RESULTS FROM 2007–2009 FLATS

Trends of Ever Use of Hookah and Cigarettes, 2007–2009 FLATS



*Statistically significant upward trend

Prevalence of Ever Use of Tobacco Products, 2009 FLATS



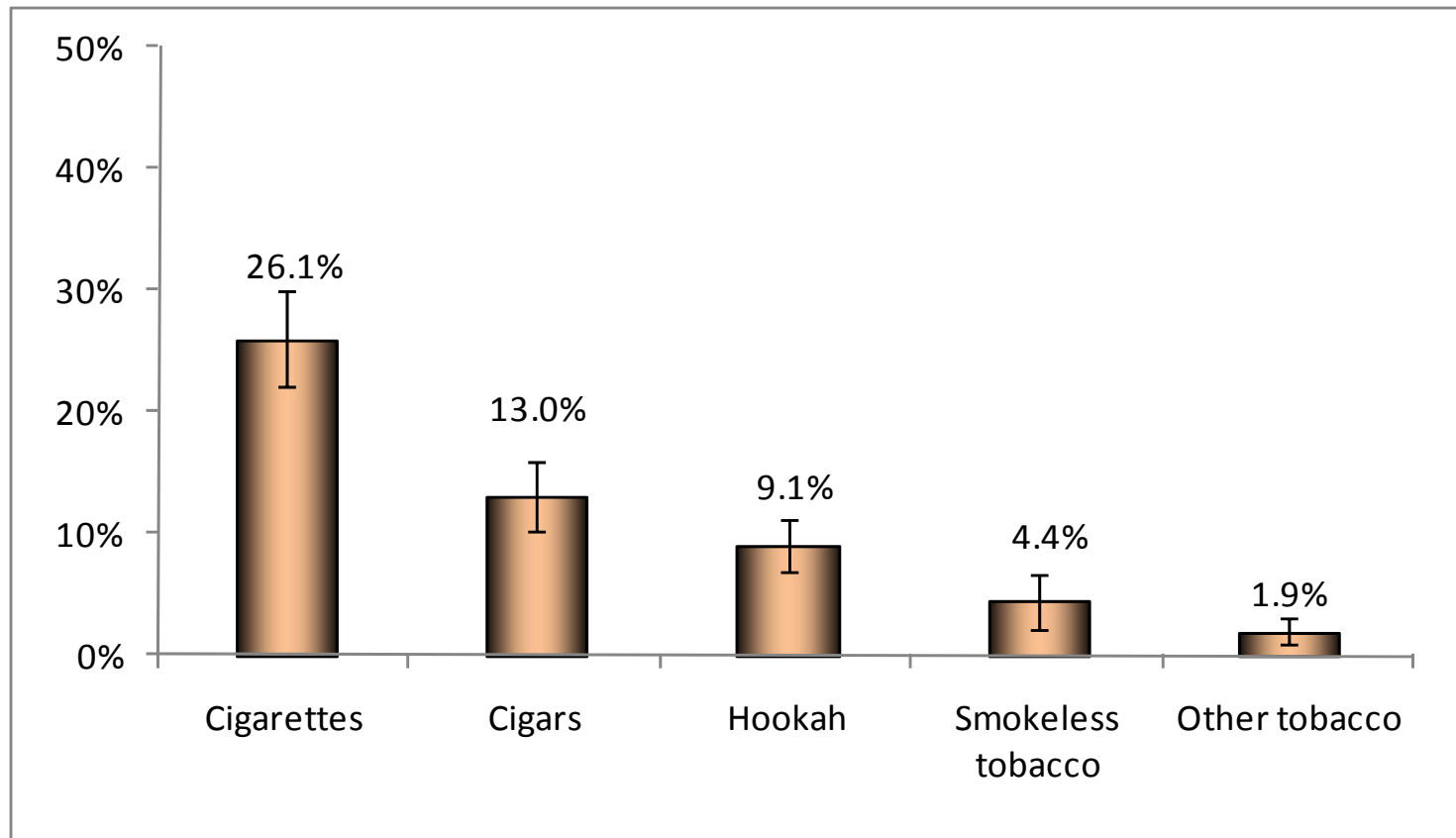
Prevalence of Ever Use of Hookah by Demographic Characteristics, 2009 FLATS

	%	P-value of chi-square test
Gender		0.57
Female	8.0%	
Male	9.1%	
Age		0.00 **
18–24	24.2%	
25–34	12.8%	
35–44	5.7%	
45–54	10.0%	
55–64	4.6%	
65+	1.0%	

	%	P-value of chi-square test
Race/Ethnicity		0.40
White (NH)	8.4%	
Black (NH)	6.7%	
Hispanic	7.7%	
Other (NH)	18.8%	
Multi race (NH)	14.6%	
Education level		0.26
< High school	3.5%	
High school	8.5%	
Some college	10.8%	
College or more	7.7%	

RESULTS FROM 2009 FL YATS

Prevalence of Current Use of Tobacco Products, 2009 FL YATS



Prevalence of Current Hookah Use by Demographic Characteristics, 2009 FL YATS

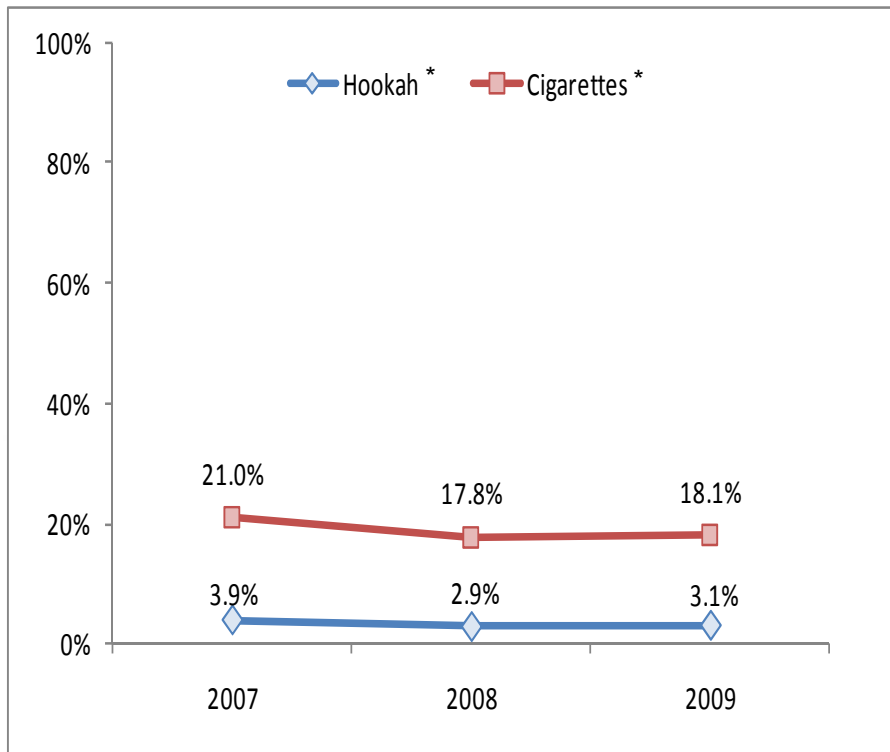
	%	P-value of chi-square test
Gender		0.03*
Female	6.8%	
Male	11.4%	
Age		0.15
18	9.8%	
19	16.1%	
20	9.6%	
21	10.1%	
22	9.9%	
23	7.8%	
24	4.2%	

	%	P-value of chi-square test
Race/Ethnicity		0.045**
White (NH)	11.1%	
Black (NH)	3.3%	
Hispanic	8.8%	
Other (NH)	17.9%	
Multi race (NH)	7.2%	
Education level		0.05
< High school	2.5%	
High school	10.5%	
Some college	10.4%	
College or more	10.1%	

RESULTS FROM 2007–2009 FYTS

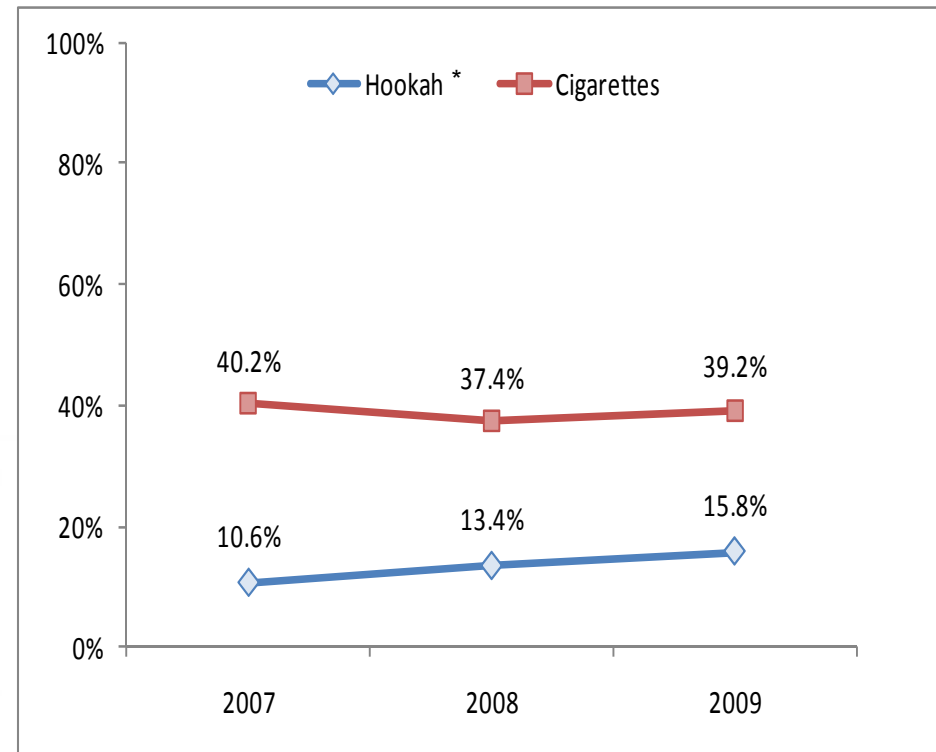
Trends of Ever Use of Hookah and Cigarettes, 2007–2009 FYTS

Middle school



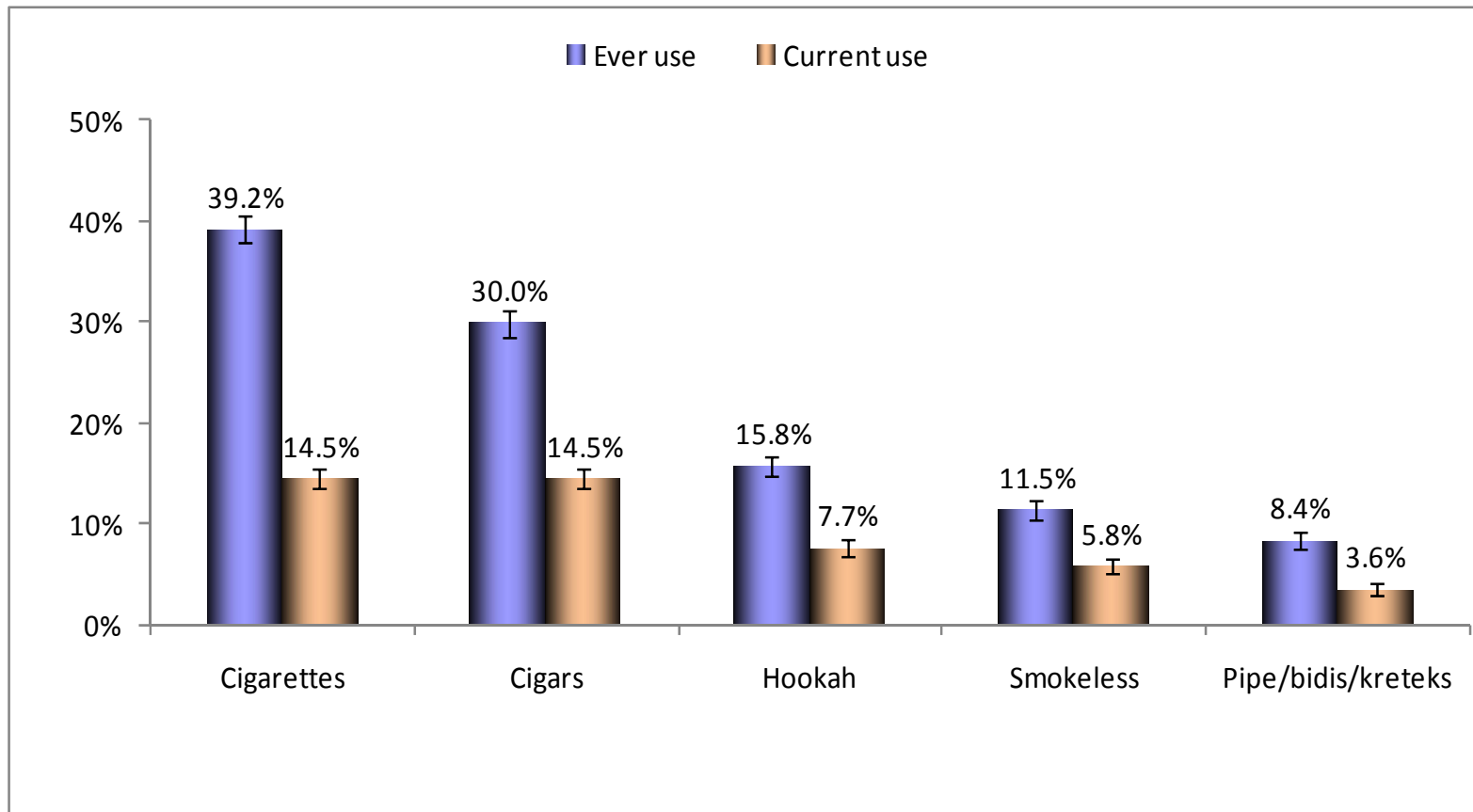
*Statistically significant downward trend

High school



*Statistically significant upward trend

Prevalence of Tobacco Product Use among High School Students, 2009 FYTS



Prevalence of Current Hookah Use by Demographic Characteristics among High School Students, 2009 FYTS

	%	P-value of chi-square test
Gender		0.00*
Female	6.4%	
Male	9.0%	
Grade		
9	4.7%	0.00*
10	5.8%	
11	9.2%	
12	12.3%	

	%	P-value of chi-square test
Race/Ethnicity		0.00*
White (NH)	9.6%	
Black (NH)	2.5%	
Hispanic	7.9%	
Other (NH)	9.6%	

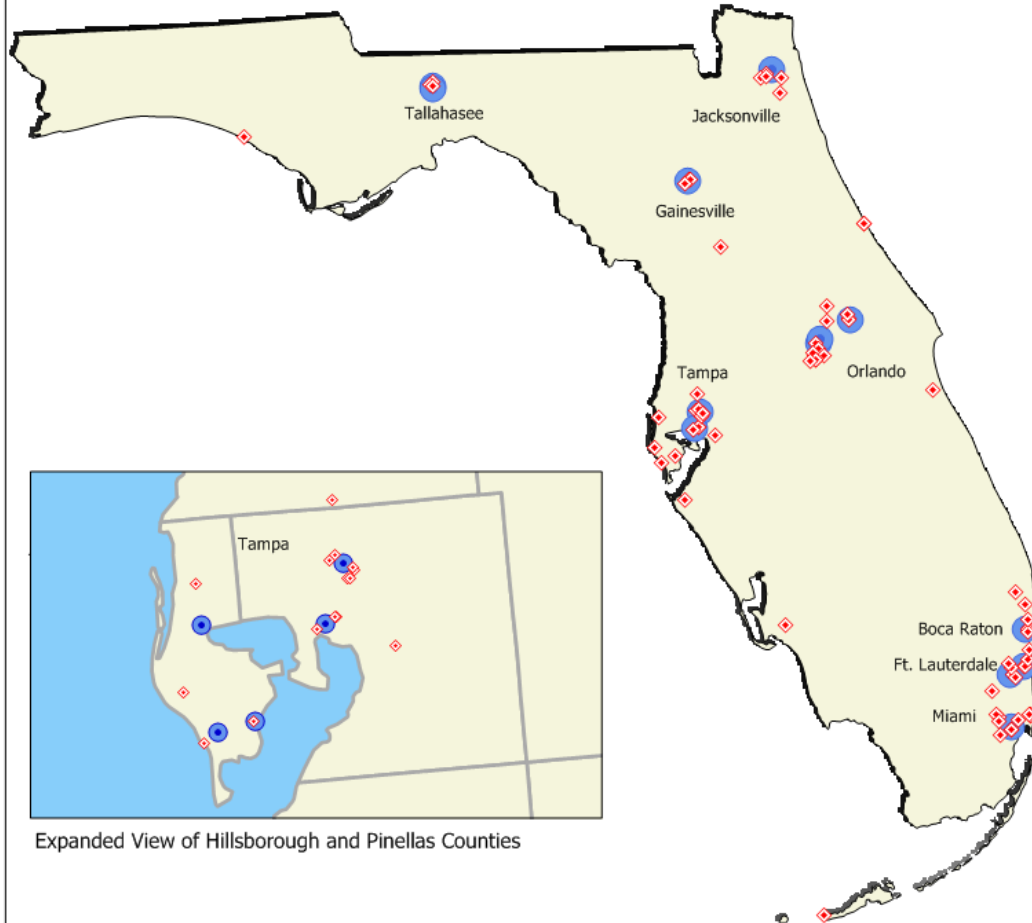
Number of Hookah Bars in Florida

- Recent database (April 21, 2010) for alcoholic beverages and tobacco licenses was provided from Florida Department of Business and Professional Regulation's (DBPR) Web site.
 - Each license in the database has information about its type, status, expiration date, and the corresponding business name and address.
- Refined list of current active licenses for tobacco retailers was compiled, and licenses for hookah bars were identified using two approaches:
 - Searched the database for businesses that include any possible hookah names (found 33 hookah bars).
 - Searched commercial Web sites that list hookah bars in each state (hookah-hookah.com, and hookah-bars.com) and checked if the online listed names are included in the database (found an additional 41 hookah bars).

Distribution of Hookah Bars in Florida

- Used the Web site geocoders.com and Google maps to measure the latitude and longitude for the location of the 74 identified hookah bars and the largest university campuses in Florida.
- Used the latitude and longitude information to calculate the distance between the location of each hookah bar and the largest campuses in Florida.
- 47 hookah bars are located within 10 miles from university campuses.

Layout of Hookah bars and University campuses in Florida



Expanded View of Hillsborough and Pinellas Counties

Universal Transverse Mercator (Zone 15)
Lon: 27 Degrees 35 Minutes West
Lat: 83 Degrees 35 Minutes North

Legend

- ◆ Hookah Bars
- Colleges and Universities

Number of Hookah Bars within 10 miles of Universities in Florida

City	Universities	Number of Hookah bars
Tampa	University of South Florida University of Tampa	9
Orlando	University of Central Florida Nova Southeastern University - Orlando	8
Fort Lauderdale	Florida Atlantic University - Fort Lauderdale Nova Southeastern University	8
Miami	University of Miami	6
Boca Raton	Florida Atlantic University	5
Jacksonville	University of North Florida Jacksonville University	5
Gainesville	University of Florida	4
Tallahassee	Florida State University Florida A&M	3

The number of bars represents the number located within 10 miles of the listed universities. Cities with universities near each other count hookah bars within 10 miles of *any* of the universities.

Conclusions

- The estimate of ever use of hookah among Floridian adults is increasing.
- The prevalence of hookah use is highest among young adults (aged 18 to 24) (24.2%).
- Hookah use appears to be increasing among high school students.
- For both high school students and young adults (18-24), current and ever use of hookah is higher than smokeless tobacco
- Generally, hookah bars in Florida are establishing their businesses close to university and college campuses.

Limitations

- Although FLATS and FYTS provide population estimates for lifetime hookah use, the two surveys do not capture information about current use of hookah.
- Surveys do not include information on key topics related to hookah use:
 - Do not provide information about dependence or interest in quitting for users of hookah.
- Information about number of hookah bars was based on limited sources.

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