Increasing Hookah Use in California

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Hookah use is gaining popularity nationwide. We determined the correlates and trends for hookah use from the California Tobacco Survey. Between 2005 and 2008 hookah use increased more than 40%, and in 2008, 24.5% of young men reported ever using a hookah. Hookah use was more common among the young (18–24 years), the educated, the non-Hispanic Whites, and the cigarette smokers. Hookah use is increasing in California, especially among young adults, and in 2008 reached the highest prevalence ever reported for both genders. (*Am J Public Health*. Published online ahead of print August 18, 2011: e1–e3. doi:10.2105/AJPH.2011.300196)

Cigarette smoking has decreased in the United States nationwide, from 24.1% in 1998 to 20.6% in 2008,[1] and in California, from 16.1% in 1999 to 11.6% in 2008.[2] However, the use of hookah—water pipes used for smoking tobacco, often as the center of social gatherings—appears to be gaining popularity in the United States, especially among adolescents[3,4] and young adults.[5–11] Although hookah use is related to several preventable diseases[12–20] and may be more dangerous than cigarettes,[21–23] increased use may be caused by the belief that it is less harmful than cigarettes.[9,24–27]

California has long used a statewide tobacco surveillance tool, the California Tobacco Survey (CTS), to monitor early statewide trends in tobacco use. Using data from the CTS, we assessed the changes in hookah prevalence among California adults from 2005 to 2008.

METHODS

Data for this study are drawn from the 2005 and 2008 CTS. The objective of these large, population-based random-digit-dialed telephone surveys is to collect representative statewide data on tobacco-related behaviors and knowledge and on attitudes toward smoking. Details of the surveys are described elsewhere.[28]

We calculated hookah prevalence according to age, ethnicity, education, and cigarette smoking status. We stratified results by gender because tobacco use is generally much higher among men than among women.[29] We report prevalence data for all adults (≥18 years) and separately for young adults (18–24 years) because lifetime tobacco use usually begins in young adulthood.[30]

We weighted respondent data to represent the California adult population. We standardized prevalence rates for 2005 to the 2008 California adult population with respect to gender, age, education, and race. We report hookah prevalence estimates for 2005 and 2008, with 95% confidence intervals and percentage change between the 2 surveys. We used logistic regression to evaluate the association of hookah use in 2008 with demographic factors and cigarette smoking status.

RESULTS

In 2008, hookah use in California was much higher among young adults (24.5% among men, 10.0% among women) than it was among all adults (11.2% among men, 2.8% among women; Table 1). From 2005 to 2008, hookah use among all adults increased by more than 40%.

In 2008, hookah smoking among both genders was more common among the following groups: those aged 18 to 24 years, non-Hispanic Whites, those with at least some college education, and current and former cigarette smokers (Table 2).

DISCUSSION

The increase in hookah use in California is concerning, especially considering the rapid increase over a 3-year period in a state that is leading the nation in tobacco control.[31–33] Although hookah use among young adults has not increased significantly since 2005, the 2008 prevalence rates in this age group are the highest recorded from the CTS to date; 1 in 4 young men and 1 in 10 young women in California reported ever using a hookah. In 2008, hookah use among men aged 18 to 24 years was more than twice as high as hookah use among all adult men; for women, this increase was threefold.

The correlates of higher hookah use reported here are different from the known correlates for cigarette smoking. Young adults, the highly educated, and non-Hispanic Whites were more likely to smoke hookah, which is in agreement with other smaller studies.[34,35] As socioeconomic indicators, education and ethnicity may be related to disposable income; Eissenberg et al.[6] found a nonsignificant higher weekly overall spending among hookah users compared with nonusers, and Smith-Simone et al.[36] found that current hookah users had significantly more disposable income than did nonusers.

This is the largest representative survey of data on hookah use collected at 2 different points in time from the same source population. The increase in ever use of hookah reported in this study suggests that further research is warranted on more specific measures, such as current hookah use and patterns of hookah use. The increased popularity of hookah among young people might be explained by the social nature of the behavior, as most users report hookah use with multiple peers.[34,35] Public indoor cigarette smoking is banned throughout California, whereas hookah use is permitted in "hookah lounges," which are classified as retail tobacco shops. This may create the impression among tobacco users (and nonusers) that hookah is a safer alternative to cigarettes. The American Lung Association[37] argues that indoor smoking bans have actually bolstered the popularity of hookah lounges because of their exemption from most state laws that restrict public smoking. We suggest that policymakers consider laws that would ban hookah lounges, thus eliminating the implication that hookah smoking is safer and more socially acceptable than cigarette smoking. ■

TABLE 1—Standardized Prevalence Rates of Hookah Use for Adults and Young Adults: California, 2005 and 2008

	Hookah Use, % (95% CI)		
	2005 (n = 14 262)	2008 (n = 10 397)	% Change, 2005–2008
All adults (≥18 y)			
Men	7.9 (6.8, 9.0)	11.2 (9.8, 12.6)	41.8[a]
Women	1.9 (1.5, 2.3)	2.8 (2.1, 3.5)	47.4
Young adults (18–24 y)			
Men	19.7 (16.7, 22.7)	24.5 (21.4, 27.6)	24.4
Women	8.1 (5.9, 10.3)	10.0 (8.0, 12.0)	23.5

Note. CI = confidence interval.
[a]Confidence intervals do not overlap, indicating significant ($P < .05$) change between 2005 and 2008.

TABLE 2—Hookah Use by Demographic Characteristics and Cigarette Smoking Status: California, 2008

	Men (n = 4667), OR (95% CI)	Women (n = 5730), OR (95% CI)
Age, y		
18–24 (Ref)	1.0	1.0
25–44	0.27* (0.17, 0.44)	0.25* (0.13, 0.48)
45–64	0.13* (0.07, 0.23)	0.07* (0.03, 0.13)
≥65	0.04* (0.02, 0.08)	0.01* (0.00, 0.02)
Education		
< high school graduate (Ref)	1.0	1.0
High school graduate	2.32 (0.91, 5.91)	1.19 (0.54, 2.64)
Some college	3.35* (1.63, 6.92)	3.15* (1.48, 6.70)
College graduate	3.45* (1.61, 7.42)	2.98 (0.60, 14.87)
Ethnicity		
Non-Hispanic White (Ref)	1.0	1.0
Hispanic	0.56 (0.31, 1.02)	0.42* (0.21, 0.84)
African American	0.40* (0.25, 0.64)	0.50 (0.24, 1.05)
Asian/Pacific Islander	0.51* (0.33, 0.79)	0.47* (0.23, 0.96)
Smoking status		
Never (Ref)	1.0	1.0
Former	4.39* (2.58, 7.49)	2.22* (1.03, 4.79)
Current	4.87* (3.09, 7.67)	5.01* (2.67, 9.40)

Note. CI = confidence interval; OR = odds ratio. Odds ratios were adjusted for all other variables in the table.
*$P < .05$.

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Contributors

J.R. Smith and W.K. Al-Delaimy conceptualized the study design and wrote the article. S.D. Edland and M.M. White performed the statistical analyses and edited the article. T.E. Novotny, C.R. Hofstetter, and S.P. Lindsay helped develop the study design and guided the analyses. All authors contributed to the interpretation of the results and revision of the final article.

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Human Participant Protection

All study procedures were approved by the University of California, San Diego Human Research Protection Program.

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