

# ASHES, Vol. 9(11) - Who's first? A prospective study of smoking initiation among college students

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Researchers are keenly interested in identifying risk factors and predictors of smoking initiation. However, relatively little attention has been afforded to the influence of different types of smoking (e.g., cigarettes, [hookah](#), or marijuana) on each other. Today's ASHES reviews a prospective longitudinal study that investigates how cigarette, hookah, and marijuana smoking influence the initiation of each other (Fielder, Carey & Carey, 2013).

## Methods

- The sample was derived from a larger health study of first-year female college students. The final sample for this study consisted of 483 participants.
- The study used a prospective longitudinal design. Participants completed a baseline survey during the first month of college, followed by eight monthly follow-up surveys.
  - During the baseline survey, researchers recorded whether participants had ever smoked cigarettes, hookah, or marijuana before college. Participants also completed measures of impulsivity, sensation-seeking, and binge drinking.
  - During each follow-up, researchers recorded whether participants had smoked cigarettes, hookah, or marijuana at least once during the previous month. Researchers collapsed these measures across the entire eight-month period to create a single initiation variable for each smoking type.
- Researchers used multivariate [logistic regression](#) models to predict whether any type of pre-college smoking influenced first-year initiation of the other types.
  - Researchers created separate models predicting each smoking type. For each model, the predictors entered were pre-college use of the other two smoking types, pre-college binge drinking,

impulsivity, and sensation-seeking, and the outcome was first-year initiation.

- Participants who had initiated a smoking type before the baseline survey were excluded from analysis for that particular smoking type. For example,, if a participant reported cigarette initiation before college, her results were not entered into the cigarette model.

## Results

- By the end of the eight-month study period, 9% of participants had newly initiated cigarette smoking, 17% had newly initiated marijuana use, and 17% had newly initiated hookah smoking[1].
- Pre-college marijuana and pre-college hookah use significantly predicted **cigarette** initiation. This means that participants who smoked marijuana or hookah before college were significantly more likely to start smoking cigarettes in their first year. Please see Table 1 for the [odds ratios](#) and [confidence intervals](#) for all predictors.
- Neither pre-college cigarette nor pre-college hookah smoking predicted **marijuana** initiation. However, impulsivity and pre-college binge drinking significantly predicted marijuana initiation.
- Pre-college marijuana but not pre-college cigarette smoking significantly predicted **hookah** initiation. Pre-college binge drinking also significantly predicted hookah initiation.

Outcome	Predictor					
	Pre-college cigarette use	Pre-college marijuana use	Pre-college hookah use	Pre-college binge drinking	Impulsivity	Sensation seeking
First-year cigarette initiation	-	<b>1.02</b> [1.00, 1.03]	<b>1.08</b> [1.02, 1.15]	1.00 [0.88, 1.13]	0.99 [0.88, 1.10]	1.05 [0.94, 1.17]
First-year marijuana initiation	0.72 [0.18, 2.84]	-	0.98 [0.85, 1.14]	<b>1.13</b> [1.00, 1.27]	<b>1.13</b> [1.03, 1.25]	1.01 [0.91, 1.11]
First-year hookah initiation	1.42 [0.96, 2.09]	<b>1.03</b> [1.01, 1.05]	-	<b>1.18</b> [1.08, 1.30]	1.09 [0.99, 1.21]	1.04 [0.94, 1.15]

Figure. Predictors of first-year cigarette, marijuana, and hookah initiation. Odds ratios greater than 1 indicate higher risk for the outcome in the presence of the predictor.

Note: Results from the multivariate regression models are presented as adjusted odds ratio followed by 95% confidence interval. Numbers in bold are statistically significant ( $p < .05$ ).

## **Limitations**

- This study only included first-year college females, limiting its generalizability to the greater population.
- This study focuses entirely on self-report data. The pre-college information was also retrospective, as participants reported back on past behaviors.
- Rates of initiation were relatively low throughout the eight-month study period, ranging from 9-17%. Extending the study past the first year might yield more robust results.

## **Conclusions**

This study found certain pre-college smoking behaviors can influence initiation of other smoking behaviors during the first year of college. For instance, women who had already begun smoking marijuana or hookah before college were more likely to take up cigarette smoking during their first year, and women who had already begun marijuana smoking were more likely to begin smoking hookah. This suggests that 'hopping' between smoking behaviors might be present. That is, people might go between smoking behaviors, as certain behaviors predispose a person to initiating other behaviors. This knowledge is important, as it can help us protect and educate people about the possibility of 'hopping' among different smoking types.

-Daniel Tao

## **References**

Fielder, R.L., Carey, K.B., Carey, M.P. (2013). Hookah, cigarette, and marijuana use: A prospective study of smoking behaviors among first-year college women. *Addictive*

*Behaviors, 38, 2729-2735.*

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[\[1\]](#) At baseline, 38 (9%) of participants had previously smoked cigarettes, 171 (40%) had previously used marijuana, and 117 (28%) had previously smoked a hookah.