It is important to understand differences in tobacco-related attitudes between nonsmokers, hookah-only users, and cigarette-only users. Differences between nonsmokers, hookah-only users, and cigarette-only users suggest:

1. **Hookah users** may not differ from smokers in beliefs about the dangers of hookah use.
2. **Hookah users** may be more receptive to messages addressing this issue.
3. **Co-use with alcohol** should be addressed.
4. Messaging may need to be tailored to nonsmokers as well as smokers.

New interventions are needed for hookah use. Messages that emphasize tobacco industry may also need to address hookah use.

Hookah users may not differ from smokers in beliefs about the dangers of secondhand smoke. Hookah users may also need to be more receptive to messages addressing this issue. Messaging may need to be tailored to nonsmokers as well as smokers.

Co-use with alcohol should be addressed. Longitudinal studies should examine trajectories of hookah and cigarette use.

**1. Background**

- Hookah smoking appears to be increasing both worldwide and among young adults in the United States.
- 40% of college students reported having ever smoked hookah.
- Between 9% and 17% reported smoking hookah within the past 30 days.
- The number of commercial venues has been most common among hookah users. "Hookah bars" may be growing.
- Access to these hookah bars is associated with use.
- Hookah smoking has health risks that are similar to those of tobacco smoking.
- Despite these risks, many young adults perceive smoking hookah as a form of tobacco that is less harmful than cigarette smoking.
- Most research on young adult hookah use has been limited to using samples of college students.
- Young adults who are not currently enrolled in college are more likely to be current smokers.
- One way to access high-risk young adults who are not in college is to survey young adults who attend bars and clubs.
- There are differences between nonsmokers, hookah-only users, and cigarette-only users.
- It is important to understand differences in tobacco-related attitudes between nonsmokers, hookah only users and dual users.
- Existing intervention messages have been developed for use.
- Hookah products have different branding and marketing.
- This is the first study to examine differences among nonsmokers, hookah-only users, cigarette-only users, and dual users with regard to their attitudes about the tobacco industry and receptivity to tobacco promotions.

**2. Methods**

- **Sampling:** Young adults can be difficult to reach by traditional survey methods.
- **Time-location sampling (TLS):** Identifies random samples of similarly hard-to-reach populations, such as young adults at venues where tobacco use is common.
- **Approximates probability samples:** TLS methods were used to collect random samples of young adults from five cities:
  - San Diego, CA (N=2,243)
  - Tulsa, OK (N=2,090)
  - Oklahoma City, OK (N=2,202)
  - Albuquerque, NM (N=1,044)
  - Las Cruces, NM (N=848)
- **Measures:**
  - **Current tobacco use:** For both hookah and cigarettes, respondents reported if they had used the product in the past 30 days.
  - **Hookah-only:** Dual use of both hookah and cigarettes.
  - **Cigarette-only:**
  - **Anti-SHS Status:**
  - **Current Binge Drinking:**
  - **Differences in tobacco-related attitudes between hookah and cigarette smokers and dual users**
  - **Further description of juvenile attitudes and tobacco industry receptivity**

**3. Analysis**

- **Data from all five locations were combined for all analyses.**
- **Based on Bayesian Information Criterion (BIC).**
- **Descriptive analysis:** The number of variables by type of hookah and cigarette use.
- **Describe different types of tobacco users:**
  - **Multimodal logistic regression:**
  - **Analyze the associations between tobacco use factors and these types of tobacco users:**

**4. Results**

**Table 1. Demographic Characteristics, Attitudes for Hookah and Cigarette Users**

<table>
<thead>
<tr>
<th>Hookah &amp; Cigarette Use</th>
<th>Nonsmoker</th>
<th>Hookah Only</th>
<th>Dual User</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hookah Only</strong></td>
<td>14.7% (4,634)</td>
<td>0% (2)</td>
<td>18.4%, 20% (6,588)</td>
</tr>
<tr>
<td><strong>Cigarette Only</strong></td>
<td>16.2% (4,651)</td>
<td>0% (2)</td>
<td>18.5% (6,596)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>14.7% (4,634)</td>
<td>0% (2)</td>
<td>18.4%, 20% (6,588)</td>
</tr>
</tbody>
</table>

**Table 2. Comparing Hookah-Only Users, Dual Users, and Cigarette-Only Users with Nonsmokers**

<table>
<thead>
<tr>
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<th>Dual Users</th>
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<tr>
<td><strong>Anti-industry</strong></td>
<td>1.03 (.78–1.36)</td>
<td>.76 (.62–.92)**</td>
<td>Ref</td>
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**5. Summary**

- We confirmed prior findings that hookah use is associated with current college status, younger age, sex, and cigarette smoking.
- Hookah-only users are more likely to use dual users.
- Hookah-only users were more evenly split between males and females.
- Dual users were predominantly male.
- We found that hookah-only users were disproportionately in college while cigarette-only users were disproportionately non-college young adults.
- Binge drinking was most strongly associated with dual use.
- Differences between hookah-only users and cigarette-only users suggest:
  - Hookah smoking may be more appealing to nonsmokers.
  - The tobacco industry may attract young people who might otherwise use tobacco.
  - Adverse health outcomes may be more likely to occur among dual users.

**6. Limitations**

- Data are cross-sectional so it is not possible to discern trajectories of use.
- Hookah may not attract new tobacco users.
- May discourage cigarette smokers from quitting.
- May not measure the health effects or perceptions of health effects related to hookah use.
- Findings are limited to the young adults in bars and clubs.
- May not generalize to the general population of young adults.

**7. Conclusions**

- New interventions are needed for hookah use.
- Messages that emphasize tobacco industry may also need to address hookah use.
- Hookah users do not differ from smokers in beliefs about the dangers of secondhand smoke.
- Hookah users may be more receptive to messages addressing this issue.
- Messaging may need to be tailored to nonsmokers as well as smokers.
- Use with alcohol should be addressed.
- Longitudinal studies should examine trajectories of hookah and cigarette use.