ASHES, Vol. 8(5) – When thinking becomes reality: Cognitive factors associated with future smoking initiation and progression

May 30, 2012

Previous issues of ASHES have discussed how cognitive factors might affect smoking cessation. For example, we previously described how positive attitudes toward quitting smoking were related to short-term abstinence (Schuck, Otten, Engels & Kleinjan, 2011). Today's ASHES reviews a Chinese longitudinal study (Guo, Unger, Azen, MacKinnon, & Johnson, 2012) exploring how different reasons for smoking predict smoking initiation and progression among adolescents.

Methods

- Researcher recruited 7th, 8th, 10th and 11th graders from 147 high schools in China. 14,434 students participated in a paper/pencil baseline survey, and 12,382 of these completed a follow-up survey one year later. Forty nine percent of the final sample were boys**.**
- *Selected assessments*
    - Researchers coded smoking behaviors as 0 (never smoked), 1 (smoked, but not during the past 30 days), 3 (smoked during the past 30-days, but not daily) and 4 (daily smoking).
        - Using follow-up data, they operationally defined "smoking initiation" as a progression from "never smoked" to any other smoking status. They operationally defined "smoking progression" as any progression to a more advanced stages of smoking behavior.
    - At baseline, researchers assessed cognitive attributions for smoking at 8 themes[1]:
        - Curiosity: e.g., "I'm curious what it is like"
        - Coping: e.g., " It helps me deal with stress"
        - Social image: e.g., "It makes me look good"

        - Social belonging: e.g., “I don’t like to refuse when someone gives me a cigarette”
        - Engagement: e.g., “It keeps me from being bored”
        - Autonomy: e.g., “I feel like I’m making my own decisions”
        - Mental enhancement : e.g., “It helps me concentrate”
        - Weight control: e.g., “It helps me keep my weight down”
    - At baseline, researchers also assessed susceptibility to smoking, measured by a single item: “At any time in the next 12 months, do you think you will smoke a cigarette?” (1 –Yes, definitely; 2 – Maybe, yes; 3 – Maybe, no; and 4 – No, definitely not).

Results

- Baseline smoking status:
    - Out of 12,382 participants, 4596(73%) of girls and 3182(53%) of boys reported that they had “never smoked” at baseline.
- Researchers conducted a regression analysis to explore the relationships between cognitive attitudes at baseline and smoking outcomes at follow-up. Table 1 demonstrates the associations between the eight themes and the combined outcome of smoking initiation/progression (i.e., any smoking development started from any smoking status, including “never smoked,” to any more advanced phase of smoking behavior).

	B	*P*
Curiosity	.03	.002
Coping	.04	<.001
Social image	.05	.004
Social belonging	.02	.36
Engagement	.04	02
Autonomy	.02	.20
Mental enhancement	.03	.19
Weight control	-.03	.36

Figure. Association between cognitive attributions at baseline and smoking

initiation/progression

- Smoking initiation:
  - Curiosity and autonomy were positively associated with smoking initiation one year later ($p < 0.05$ for both).
- Smoking progression:
  - Coping ($\beta=0.07$, $p< .01$) and social image ($\beta=0.1$, $p< .01$) predicted smoking progression to more advanced stages of smoking among those who had smoked at baseline.
  - Social image ($\beta=0.05$, $p< .05$), engagement ($\beta=0.07$, $p< .01$) and mental enhancement ($\beta=0.15$, $p< .01$) were positively associated with smoking progression toward more advanced stages of smoking among adolescents who reported they had smoked in the past 30 days at baseline.
- The effects of all cognitive attributions, but social image, were partially mediated by baseline susceptibility to smoking ($p < .001$). In other words, expectations and beliefs about smoking mostly affected smoking development by influencing susceptibility to smoking.

Limitations

- The study does not examine causality. It only presents the associations between the baseline and the next year smoking.
- The study investigates a specific sample of Chinese students. In different cultural/regional groups, these attributions might be differently related to smoking behavior.
- The study relies on self-reports of smoking behaviors.

Conclusion

Various reasons for smoking such as social image, curiosity, coping, engagement, autonomy and mental enhancement predict initiation and progression of smoking behavior among this sample of Chinese adolescents. They mostly influence through susceptibility to smoking. The results imply that anti-smoking programs should try to modify adolescents' beliefs about what smoking offers them, especially among those who are more susceptible to smoking. Future research might try to manipulate cognitive attitudes and examine if the modifications affect smoking development.

–Julia Braverman

References

Guo, Q., Unger, J. B., Azen, S. P., MacKinnon, D. P., & Johnson, C. A. (2012) Do Cognitive attributions for smoking predict subsequent smoking development? Addictive Behaviors, 273 – 279.

Schuck, K., Otten, R., Engles, R.C., Kleinjan, M. (2011). The relative role of nicotine dependence and smoking-related cognitions in adolescents' process of smoking cessation. *Psychology and Health*, 26(10): 1310-1326.

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[1]Researchers do not report how many items assessed each theme.