

CAN ATTITUDES ABOUT SMOKING IMPACT CIGARETTE CRAVINGS?

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Background

Previous studies have demonstrated that smokers minimize the risks of smoking cigarettes. The Agency of Health Care Policy and Research suggests that addressing the negative consequences of smoking (i.e. lung cancer, heart attacks) can motivate smokers to quit.¹ Similarly, social marketing campaigns usually target these consequences with the understanding that these perceptions are modifiable. Given the literature that suggests that beliefs and attitudes about smoking can in fact mediate smoking initiation, behavior and cessation, it is important to understand how smokers' perceptions can influence their motivations to smoke. Although previous research² has found positive affective associations with smoking to be linked to cigarette cravings, little is known about the possible relationship between attitudes about the negative consequences of smoking and urges to smoke. Indeed, studies have demonstrated that urges to smoke, especially when triggered by stressors or other environmental cues, can be important predictors of smoking-related outcomes.³ The goal of the present study was to evaluate whether or not attitudes toward the negative consequences of smoking are related to the motivation to smoke.

Hypothesis

Smokers who exhibit more favorable attitudes towards smoking would have: 1) higher basal levels of cigarette cravings, and 2) higher levels of craving when encountering environmental smoking cues and stressors.

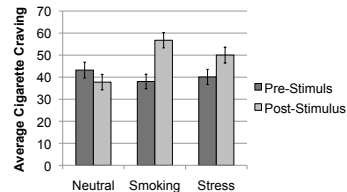


Figure 1. Cigarette craving scores before and after exposure to neutral, smoking and stress stimuli. The Time (Pre-stimulus, Post stimulus) X Exposure (Neutral, Smoking, Stress) interaction was significant.

Methods

Participants

Cigarette Smokers ($n=103$); 33% female and 67% male. Mean age 41.8 ($SD=6.4$). Participants reported on average smoking 18.6 cigarettes/day for 21.0 years. Mean FTND=6.5. Exclusion Criteria: Current treatment for smoking cessation; History of other substance abuse or major mental illness.

Measures

Brief Smoking Consequences Questionnaire (SCQ): Participants rated the desirability (-5 to 5) and likelihood (0 to 9) of eighteen potential negative consequences associated with smoking (e.g., "smoking is taking years off my life").⁴ The questionnaire yielded scores indexing: 1) Desirability, 2) Likelihood, and 3) Subjective Utility—the cross-product of desirability and likelihood responses—by summing ratings of individual items for each individual. Subscales, as designated by Copeland et al.,⁵ were then individually calculated for health risk, negative physical feelings and negative social impressions.

Cue-Induced Craving: Imaginal exposures involved listening to a series of 90-second scripts—1) smoking (i.e., lighting up after a restaurant); 2) stress (i.e., trip to the dentist); and, 3) neutral (i.e., changing light bulb)—counterbalanced and separated by brief rest periods. Cigarette cravings were assessed before and after cues with a 5-item (e.g. I crave[d] a cigarette right now/during the scene), 0-100, scale.

Data Analysis

First, we conducted a Time [pre exposure, post exposure] by Exposure [neutral, smoking, stress] ANOVA to confirm that cues evoked significant craving responses. Next, we analyzed participants' SCQ scores using desirability, likelihood, and SEU indices as possible moderators of these cravings. Lastly, we evaluated the potential modifying effects of the individual negative consequences subscales of the SCQ.

Results

- There was a significant Time x Exposure interaction, revealing an increase in craving levels in response to both smoking cues and stress, but not in response to neutral cues: $F(2,101)=28.33, p<.001$ (Figure 1).
- SCQ perceived desirability of negative consequences significantly moderated the effects of both stress- and smoking cue-induced cravings: $F(1,101)=9.08, p=.003$, and $F(1,101)=6.79, p=.01$.
- Neither likelihood nor SEU predicted cravings, $p>.05$.
- Interestingly, simple slopes analyses suggested that the effects of desirability were primarily driven by pre-stimulus cravings (Figures 2 and 3).

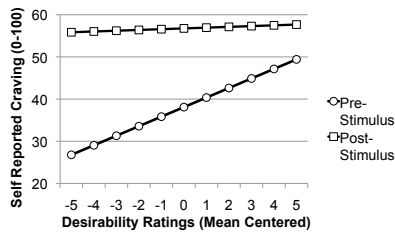


Figure 2. Regression lines depicting the relationship between desirability ratings and cigarette cravings before and after laboratory exposure to smoking cues.

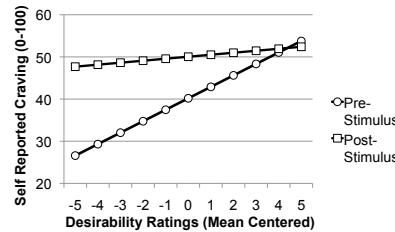


Figure 3. Regression lines depicting the relationship between desirability ratings and cigarette cravings before and after laboratory exposure to stress.

Results, Cont'd

- Subscale analyses revealed a similar pattern of results:
 - All subscales significantly predicted stress-induced cravings.
 - All subscales, except Health Risks (which was marginally significant— $p=0.053$), predicted smoking-cue induced cravings.

Discussion

Results indicated that attitudinal factors—specifically the perceived desirability of the negative consequences of smoking—can affect smokers' cigarette cravings. Interestingly—and in contrast with some prior studies that demonstrated ratings of likelihood moderated smoking behavior—neither likelihood, nor SEU, predicted cravings within this sample. As the mean likelihood ratings in the original SCQ⁶ was approximately double the mean in our sample, a possible explanation is that the probability of the consequences of smoking are now—over 20 years later—more widely accepted. Follow-up analysis also revealed that both interactions were primarily driven by basal cravings, rather than cue- or stress-induced cravings. Smokers who rated negative consequences as less desirable had a lower initial craving than those who minimized consequences; however, post-stimulus craving levels were almost analogous across desirability ratings. This suggests that individual attitudes may play a crucial role in better understanding the motivation for cigarette smoking, and may ultimately assist in attitude-based interventions for smoking cessation.

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