

ASHES, Vol. 6(6) - Danger ahead! The effects of looming vulnerability on smoking cessation attempts

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For decades, public health advocates have developed and tested smoking cessation programs. One method, looming vulnerability, involves a perceived increase of susceptible dangers due to smoking, which heightens state anxiety. Researchers hypothesize that this change will stimulate efforts to quit. This week the ASHES reviews a study that examined the effects of looming vulnerability and smoking cessation (McDonald, D., O'Brien, J., Farr, E., & Haaga, D. A. F. 2010).

Methods

- Researchers used a randomized control study design and surveyed 72 adult smokers.
- At baseline, researchers included questions for demographics, smoking history, nicotine dependence, and state anxiety.
- For both conditions, participants listened to four three-minute audiotape-guided imagery exercises.
 - The experimental condition focused on the act of smoking and the associated health consequences. The scene also connected the continuation of smoking with other impending dangers such as riding a conveyor belt that ultimately leads to a diagnosis of lung cancer.
 - The control condition elicited relatively calm images that included movement, but were not associated with smoking, such as riding an escalator in an empty mall.
- Immediately after the manipulation, participants completed measures for state anxiety, motivation, and contemplation to quit.
- During a one-month follow-up interview, participants again completed measures of motivation, contemplation, nicotine dependence, current smoking behavior, and quit attempts.

| Variable | Looming (n=36) | Control (n=36) | t(70) | p | d |
|-------------------------------|-------------------|-------------------|-------|------|------|
| State Anxiety (VAS) pretest | 24.67 (21.91) | 23.81 (22.14) | NS | NS | NS |
| State Anxiety (VAS) post-test | 43.33 (28.65) | 28.00 (20.36) | 2.62 | 0.01 | 0.62 |
| Imagery induced anxiety | 3.33 (2.15) | 2.25 (1.76) | 2.34 | 0.02 | 0.55 |
| Imagery vividness | 5.36 (1.66) | 5.08 (1.76) | 0.69 | 0.49 | 0.16 |

Figure. Immediate effects of looming manipulation (adapted from McDonald et al., 2010). Click image to enlarge.

Note: For means, standard deviations are given in parentheses. State anxiety = Visual Analogue Scale (0-100). t(70) compares looming and control conditions. NS parameters not reported.

Results

- As Table 1 shows, the post-test anxiety ratings for the looming condition were significantly higher than for the control condition. No significant difference was found between groups in the follow-up interview for motivation, contemplation, nicotine dependence, quit attempts, or attempts to seek formal help for cessation.
- Looming condition participants on average (M = 9.10, SD = 6.72) did smoke fewer cigarettes than control participants (M=12.90, SD = 9.02). ANCOVA on smoking rate, with baseline rate as covariate and experimental condition as independent variable, was significant, $F(1, 58) = 4.24, p < .05$, partial eta squared = .068.

Limitations

- Self-reported measures.
- Measures of contemplation and motivation to quit were completed post-test only.
- Small sample size limits statistical power.

Discussion

Looming vulnerability was found to successfully increase a participant's state anxiety immediately after the manipulation. While it did have a significant impact on the number of cigarettes smoked during a one-month follow-up survey, there were no other significant findings. These results illustrate how an induced behavioral change might not penetrate or affect internal motivations for such behavior. The results also suggest that scare tactics are ineffective as a smoking cessation strategy in the long term. A more comprehensive approach that addresses personal and psychological history and physical dependence might

result in more successful cessations.

-Aaron Lim

References

McDonald, D., O'Brien, J., Farr, E., & Haaga, D. A. F. (2010). Pilot study of inducing smoking cessation attempts by activating a sense of looming vulnerability. *Addictive Behaviors*, 35, 599-605.

Riskind, J. H., & Williams, N. L., & Joiner, T. E., jr. (2006). The looming cognitive style: A cognitive vulnerability for anxiety disorders. *Journal of Social & Clinical Psychology*, 25, 2006.

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