Path analysis of warning label effects on negative emotions and quit attempts: A longitudinal study of smokers in Australia, Canada, Mexico, and the US

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Abstract

Background: Cigarette pack health warning labels can elicit negative emotions among smokers, yet little is known about how these negative emotions influence behavior change.

Objective: Guided by psychological theories emphasizing the role of emotions on risk concern and behavior change, we investigated whether smokers who reported stronger negative emotional responses when viewing warnings reported stronger responses to warnings in daily life and were more likely to try to quit at follow-up.

Methods: We analyzed data from 5439 adult smokers from Australia, Canada, Mexico, and the US, who were surveyed every four months from September 2012 to September 2014. Participants were shown warnings already implemented on packs in their country and reported negative emotional responses (i.e., fear, disgust, worry), which were averaged (range = 1 to 9). Country-stratified logistic and linear generalized estimating equations were used to analyze the effect of negative emotional responses on self-reported responses to warnings in daily life (i.e., attention, risk concern, avoidance of warnings, forgoing planned cigarettes) and quit attempts at follow-up. Models were adjusted for socio-demographic and smoking-related characteristics, survey wave, and the number of prior surveys answered.

Results: Smokers who reported stronger negative emotions were more likely to make quit attempts at follow-up (Adjusted ORs ranged from 1.09 [95% CI 1.04 to 1.14] to 1.17 [95% CI 1.12 to 1.23]; p < .001) than those who reported lower negative emotions. This relationship was mediated through attention to warnings and behavioral responses to warnings. There was no significant interaction of negative emotions with self-efficacy or nicotine dependence.

Conclusion: Negative emotions elicited by warnings encourage behavior change, promoting attention to warnings and behavioral responses that positively predict quit attempts.