ABSTRACT OF THE DISSERTATION

Reduced Regulation of Negative Emotion with Escalations in Smoking Behavior during High School: A Dose-Response Effect

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Recent research suggests that cigarette smoking is associated with developing externalizing and internalizing psychological disorders. Because reduced emotion regulation is also associated with developing externalizing and internalizing disorders, and because cigarette smoking and nicotine addiction are theorized to interfere with emotion regulation processes, the association between cigarette smoking and psychological disorders may be mediated by reduced emotion regulation. This is the first study to examine the relationship between escalations in cigarette smoking behavior and emotion regulation.

In a secondary analysis of electronic diary data from a multi-cohort, longitudinal observation study of high school students, the present study tested whether cigarette smoking was associated with reduced regulation of anger, sadness, anxiety, and happiness. Semiannually across the 4 high school years, students completed electronic
diaries during 4 consecutive days. For each of these 4-day waves, smoking status was
categorized as nonsmoking, infrequent smoking, or light-to-moderate smoking behavior.
Daily emotion regulation was measured by area under the curve (AUC) and then
averaged over a 4-day monitoring wave. AUC is a composite measure of emotion
intensity, lability, and duration. A total of 178 male (55.6%) and female (44.4%)
participants were included. Within-subject testing of the relationship between
escalations in cigarette smoking behavior and 4-day wave measures of emotion
regulation was done through repeated measures logistic regression modeling (Proc
Genmod, SAS). Through forward selecting, stepwise model building, the present study
attempted to control for sex, age, and freshman year externalizing and internalizing
levels.

Escalations in cigarette smoking behavior were associated with reductions in
regulation of anger and sadness. A similar trend was found for anxiety, but not at a
statistically significant level. Escalations in cigarette smoking behavior were not
associated with reductions in regulation of happiness.

These findings indicate that adolescents become less adept at regulating their
negative emotions as they progress in cigarette smoking behavior from nonsmoking to
light-to-moderate smoking. These smoking-related reductions in regulation of negative
emotion occur at subclinical levels of nicotine addiction. Further, these smoking-related
reductions in regulation of negative emotion may put adolescents at risk for developing
externalizing and internalizing disorders such as conduct disorder or depression,
respectively.