ASHES, Vol. 9(3): Sad now? How about now? Influences of mood and motives on teens' cigarette use

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Previous studies have established pathways between depressive symptoms and regular cigarette use in adolescence (Brown, Lewinsohn, Seely & Wagner, 1996). This week's ASHES reviews an investigation of the influence of negative mood, mood variability, and smoking motives on teenagers' smoking behavior. The researchers tracked teens' smoking behavior at baseline and 15 months later to see which mood and motivational factors predicted increases in cigarette use (Weinstein & Mermelstein, 2013).

Methods

- The researchers tracked 461 teens (55% female, M = 15.67 years old at baseline) from sixteen Chicago-area high schools who had either experimented with smoking in the past or who currently smoked cigarettes.
- The researchers used questionnaires and interviews to assess the following at baseline (Wave I), and again fifteen months later (Wave II):
    - Mood-related smoking motives (e.g., "Smoking helps you when you're feeling angry");
    - Depressive symptoms (Center for Epidemiological Studies Depression Inventory [CES-D]; Radloff, 1977);
    - Past-month smoking frequency.
- In addition, at each wave the researchers asked the participants to carry handheld devices for a week. The devices issued prompts five times a day asking participants to report their current mood and activity, as well as every time they smoked or desired a cigarette. From these data, the researchers assessed the following for each participant:
    - Overall negative mood (calculated as the mean of negative mood scores reported across the week);

        - Negative mood variability (i.e., level of fluctuation, expressed as standard deviation, in reported negative mood over the course of the week).
    - The researchers split the sample into distinct groups based on the change in past-month smoking frequency from Wave I to Wave II. The groups included as outcomes in their analyses
      were as follows:
        - Triers: smoked between 0-3 days in the past month at both waves: 27% of the sample
        - Experimenters: smoked between 0-3 days in the past month at Wave I and weekly at Wave II; 8% of the sample
        - Rapid escalators: smoked 0-5 days in the past month at Wave I and escalated to daily or near-daily use at Wave II; 8% of the sample
    - The remaining 57% of the sample fell into other groups not addressed in the analyses we report.

Results

- Using multiple logistic regressions performed separately for boys and girls, researchers examined which baseline factors distinguished rapid escalators from triers/experimenters. The results are shown in Figure 1.
    - Girls with high negative mood variability were more likely to rapidly escalate their smoking behavior than to belong to the trier/experimenter trajectory, Odds Ratio (OR) = 2.61; 95% Confidence Interval (CI) [1.04–6.55]. For boys, mood variability was not related to outcome.
    - Overall negative mood did not predict rapid escalation for either boys or girls;
    - Girls reporting mood-related smoking motives were more likely to rapidly escalate their smoking behavior than to belong to the trier/experimenter trajectory, OR = 1.15; 95% CI [1.03-1.28].

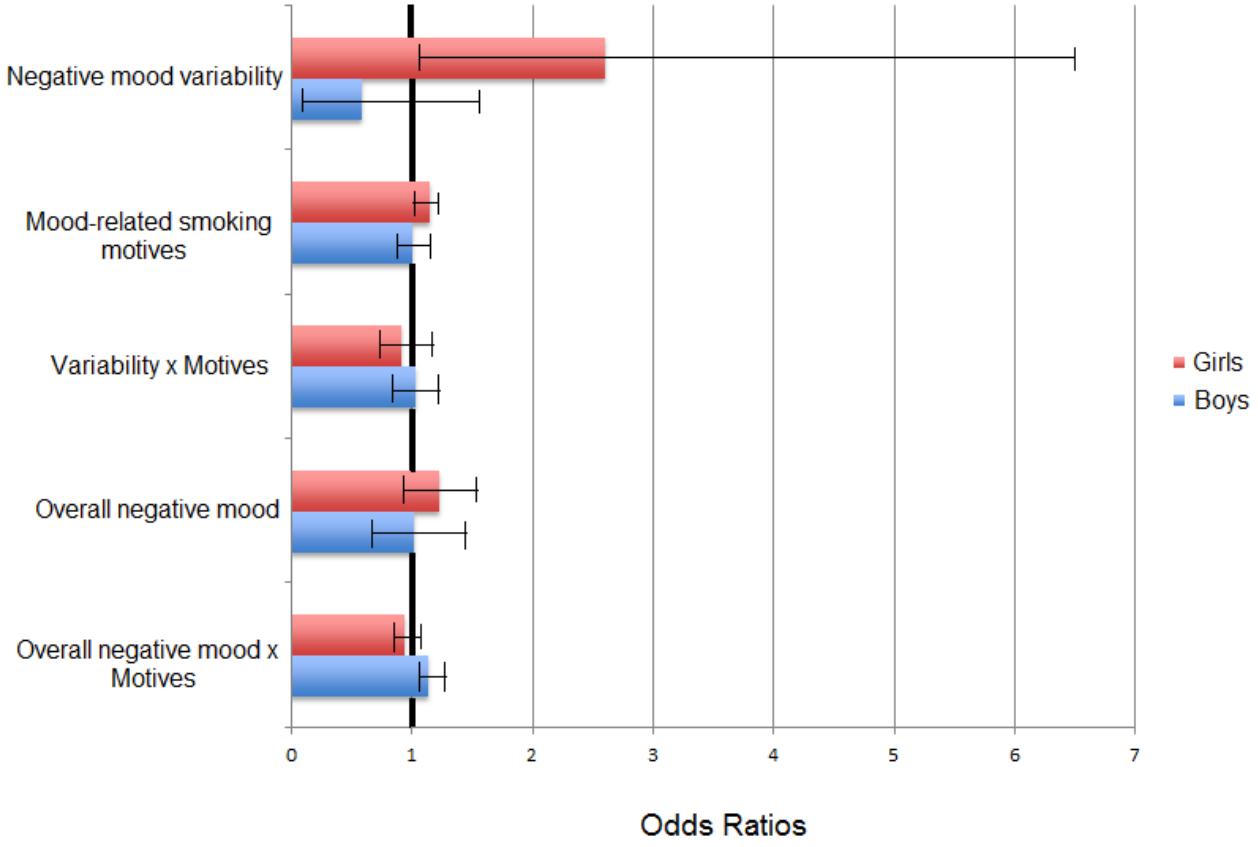

Figure. Odds ratios and 95% CIs predicting membership in the rapid-escalation smoking group using baseline mood and motive indicators (adapted from Weinstein & Mermelstein, 2013). Click image to enlarge.

Note. The bold line designates an odds ratio of 1, at which there is no distinguishable difference between groups."

Limitations

- The study analyzed only baseline levels of mood and mood variability, and only two time points to establish smoking trajectories. This limits the ability of these analyses to detect
  the potentially complex and reciprocal relationships between mood and smoking behavior that take place across time.
- The study cannot establish a *causal* relationship between mood and smoking; a temporal relationship such as that demonstrated here is helpful in establishing causality, but several other pieces of evidence—such as strength and consistency of the relationship—are also necessary (Bradford-Hill, 1965).
- It is unclear whether the fluctuation in negative mood reported over the course of a week truly represents mood variability as the researchers

conceive it. For example, high variability could indicate poor mood regulation, but could also indicate more conscientious and precise reporting.

Discussion

The study suggests that mood variability is more strongly related to the smoking behavior of girls than boys. It is possible that girls are more likely than boys to use cigarettes to attempt to regulate their mood, which suggests avenues for smoking prevention (e.g., teaching girls better ways to regulate their moods). However, girls in this study also reported higher levels than boys of negative mood and (perhaps consequently) negative mood variability, suggesting that the gender differences might have been a function of better distributed measures among girls than boys. In either case, the findings are suggestive of the importance of associations between emotion (days)regulation and smoking behavior.

— Kat Belkin

References

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