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Clinical insights from research on gender differences in tobacco withdrawal

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Results from some smoking cessation trials¹ suggest that women may be less likely than men to successfully quit smoking. This has sparked interest in examining whether certain etiological factors differentially impact smoking behavior in men and women. Such research is important in order to help guide the development of gender-specific smoking cessation interventions.

Given the link between tobacco withdrawal and relapse, studying gender differences in the tobacco withdrawal syndrome is of considerable scientific and clinical interest. Accordingly, a recent issue of *DATA* (September) reviewed a laboratory study² on gender differences in the effects of 12-hour tobacco abstinence on subjective, cognitive, and physiological measures.

A notable aspect of these findings was that men and women did not only differ in overall withdrawal severity. Rather, they differed in the type of symptoms expressed. Specifically, women reported greater abstinence-induced increases in negative affect and desire to smoke to relieve distress. In contrast, both genders reported similar abstinence-induced changes in positive affect and desire to smoke for pleasure. Furthermore, men and women did not differ in abstinence-induced changes in other subjective symptoms (e.g., hunger), physiological responses, or cognitive performance.

Additional analyses suggested that women were more likely to report smoking their first cigarette earlier in the day, which was statistically mediated by withdrawal distress. Thus, distress and desire to counteract unpleasant symptoms immediately after quitting may partly explain the gender differences in smoking cessation observed in clinical trials.

What can these findings tell us about treating tobacco addiction in men and women? They suggest that when assessing withdrawal, it is important to take into account that women and men may experience withdrawal in different ways. Therefore, by relying on overall symptom severity scores on withdrawal instruments, such as the Minnesota Nicotine Withdrawal Scale, clinicians may miss important idiosyncratic features. Instead, examining which individual symptoms are endorsed and talking to patients about their subjective experience may provide more useful information. In addition, when helping patients cope with post-quit withdrawal, women may need additional assistance managing their desire to smoke to relieve distress. Thus, individually-tailored coping strategies to prepare female patients on how to deal with post-quit negative mood may be useful to buffer them from withdrawal effects.

These findings provide relatively clear evidence that gender differences in withdrawal do, in fact, exist. Future investigation of why these differences exist may better inform clinical practice. The recently observed findings showed that gender differences were limited to subjective states, but not performance or physiological responses. Speculation follows that these differences are caused by a psychological mechanism that primarily influences one's subjective experience.

One such mechanism that is known to differ by gender is the tendency to ruminate about one's symptoms. The psychology literature suggests that women are indeed more likely to ruminate

about the effects of their psychological symptoms which serve to intensify negative mood states. This may explain why women experience exaggerated negative mood during withdrawal and may point to a useful therapeutic target (i.e., rumination) for future investigation.

In sum, studying gender differences in withdrawal and other etiological factors may be useful to help tailor our treatments to gender and improve overall rates of cessation success. Even further, understanding mechanisms underlying these differences may have more definitive clinical implications.

References

1. Cepeda-Benito A, Reynoso JT, Erath S. Metaanalysis of the efficacy of nicotine replacement therapy for smoking cessation: Differences between men and women. *J Consult Clin Psychol* 2004;72:712–722. [PubMed: 15301656]
2. Leventhal AM, Waters AJ, Boyd S, et al. Gender differences in acute tobacco withdrawal: Effects on subjective, cognitive and physiological measures. *Exp Clin Psychopharm* 2007;15:21–36.