Commentary on Hajek et al. (2010): Investigating the stress reduction in smoking cessation

As detailed by Hajek, Taylor, and McRobbie [1], smokers report that stress relief is a fundamental reason for continued use of tobacco. In this study, stress levels were measured a year apart in order to investigate how this construct changed among smokers who successfully quit compared to those who relapsed. This is a particularly important area to investigate as many smokers believe and report that smoking cigarettes alleviates stress. Hajek and colleagues present a novel approach to better understanding this phenomenon. The investigation clearly adds to our understanding of this relationship and provides several areas for future research, most notably with respect to studying additional populations and employing more rigorous measurement of the construct of stress.

Additional Populations

Hajek and colleagues used two groups to test their hypothesis: Individuals recently hospitalized for a myocardial infarction (MI) and those presenting to the hospital for scheduled coronary artery bypass surgery (CB). These groups are well suited to study the smoking-stress relationship as abstinence rates are quite high in these groups. However, future research in this area would benefit from the study of additional populations. Specifically, some may argue that MI patients show an atypical stress response due to their cardiac event as evidenced by greater cortisol secretion, higher evening cortisol levels and a flattened diurnal slope [2]. Further, it is possible that the planned-surgery group (CB) may have experienced anticipatory anxiety as a result of their impending surgery, which has been documented to increase cortisol levels 25–100% [3]. Future studies should examine groups who have not recently experienced a traumatic or life-threatening event that may have precipitated smoking cessation. Such studies are necessary as it is possible that participants who took part in the study by Hajek and colleagues experienced stress levels that were artificially elevated due to the traumatic event (MI/CB) at the time of the first assessment. Given this circumstance, it seems logical that follow-up assessment one year later would show lower levels of stress, not necessarily due to smoking cessation, but rather from an improved overall health status. This may be particularly helpful with regard to the MI group, as those experiencing MI have been shown to have disproportionately high levels of post-traumatic stress (10–15% prevalence, [4–6]), which is a well-documented risk factor for smoking relapse [7].

Ruling out this rival hypothesis would significantly enhance the findings reported by Hajek and colleagues.

Psychosocial Stress Assessment

As mentioned above, the authors were able to document a statistically significant reduction in stress levels using a brief measure of stress. Future work may benefit from including more specific components related to the construct of stress to determine if global ‘stress’ drives the observed relationship or if a more specific factor of stress is at play. This is critical as Herbert and Cohen [8] surveyed the field of psychosocial stress assessment and noted several important variables directly related to the construct of stress, including intensity and frequency. According to this review, Herbert and Cohen state that intensity and frequency are not necessarily correlated and may actually be two discrete components. Further, their review of psychosocial stress assessment provided numerous factors that may be beneficial to future studies examining the smoking-stress relationship. These factors can be summarized into three primary categories: a) environment demands, b) psychological appraisal, and c) emotional response. It is important to note, however, that Hajek and colleagues were able to document a decreased stress response with a single-item measure of stress, indicating that this relationship may be particularly robust. In fact, past work suggests that increasing the number of assessment items is likely to increase variance [9], sensitivity, specificity [10], as well as our ability to predict future behavior [e.g. 11, 12]. Future work, using a more detailed assessment of stress, is likely to significantly enhance our understanding of self-medication of stress through smoking.

Declaration of interests

None

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References