

The Relationships of Childhood Trauma and Post Traumatic Stress Disorder to Smoking Outcomes in Cancer Patients

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Background

- Childhood trauma and post-traumatic stress disorder (PTSD) have been found to be related to higher levels of nicotine dependence and poorer tobacco cessation outcomes compared to smokers in the general population without these comorbid factors.
- However, the relationship of these factors to nicotine dependence and cessation outcomes has not been evaluated in cancer patients.
- The aims of the current study are to assess the relationship of PTSD and childhood trauma to nicotine dependence and tobacco cessation outcomes in cancer patients participating in the MD Anderson Tobacco Treatment Program (TTP).

Hypotheses

- Cancer patients with a history of childhood trauma or PTSD will have lower levels of abstinence at end of treatment and report higher nicotine dependence, higher negative affect and lower positive affect than patients without PTSD or trauma.
- The effects of PTSD and trauma on abstinence will be mediated by negative affect.

Methodology

- For the first hypothesis, we used logistic regression to derive odds ratios for the effects of PTSD and trauma on abstinence controlling for covariates shown in Tables 1 & 2. We used linear regression to derive coefficients for the effects of PTSD and trauma on nicotine dependence, negative affect and positive affect.
- For the second hypothesis we used mediational analysis to identify the indirect effects of PTSD and Trauma that is attributed to changes in negative affect.

Results

Tables 1 and 2 present the variables used as covariates in the models and the four outcomes of interest. The p-values represent bivariate comparisons and are derived by either a t-test for continuous variables or chi-square for categorical variables

Table 1. Bivariate comparisons of No PTSD vs. PTSD

Variables	No PTSD (n=10,076)	PTSD (n=54)	p-value
Age	Mean(sd) / N (%)	Mean(sd) / N (%)	< 0.001
Age	56 (11.5)	49.2 (10.7)	< 0.001
Gender (Male)	4,870 (48.4)	7 (14.3)	< 0.001
Race (White)	7,935 (78.8)	43 (87.8)	0.842
# Psych. Comorb	0.45 (0.79)	1.5 (1.2)	< 0.001
EOT Abstinence	3.912 (38.8)	11 (22.9)	0.024
FTND	4.15 (1.86)	4.03 (2.6)	0.643
PANAS NA	20.35 (7.08)	27.36 (8.44)	< 0.001
PANAS PA	30.49 (6.95)	27.67 (9.01)	0.005

Table 2. Bivariate Comparisons of No Trauma vs. Trauma

Variables	No Trauma (n=9947)	Trauma (n=185)	p-value
Age	Mean(sd) / N (%)	Mean(sd) / N (%)	< 0.001
Age	56 (11.5)	51.91 (10.3)	< 0.001
Gender (Male)	4,843 (48.7)	34 (19.2)	< 0.001
Race (White)	7,825 (78.7)	153 (86.4)	0.298
# Psych. Comorb	0.45 (0.79)	1 (1.12)	< 0.001
EOT Abstinence	3.873 (38.9)	50 (28.6)	0.005
FTND	4.14 (1.85)	4.66 (2.23)	< 0.001
PANAS NA	20.3 (7.05)	25.0 (8.27)	< 0.001
PANAS PA	30.52 (6.94)	28.07 (7.85)	< 0.001

Effects of PTSD and Trauma on Abstinence:

Figure 1 shows the effects of PTSD and Trauma on EOT abstinence. The effects of the covariates included in the two models are also shown. Being diagnosed with PTSD decreased the odds of abstaining at EOT by 50%. For the trauma model, the effect is also negative indicating that having experienced childhood trauma decreases the odds of abstaining by 38%. In both models, the effects of PTSD and trauma are statistically significant.

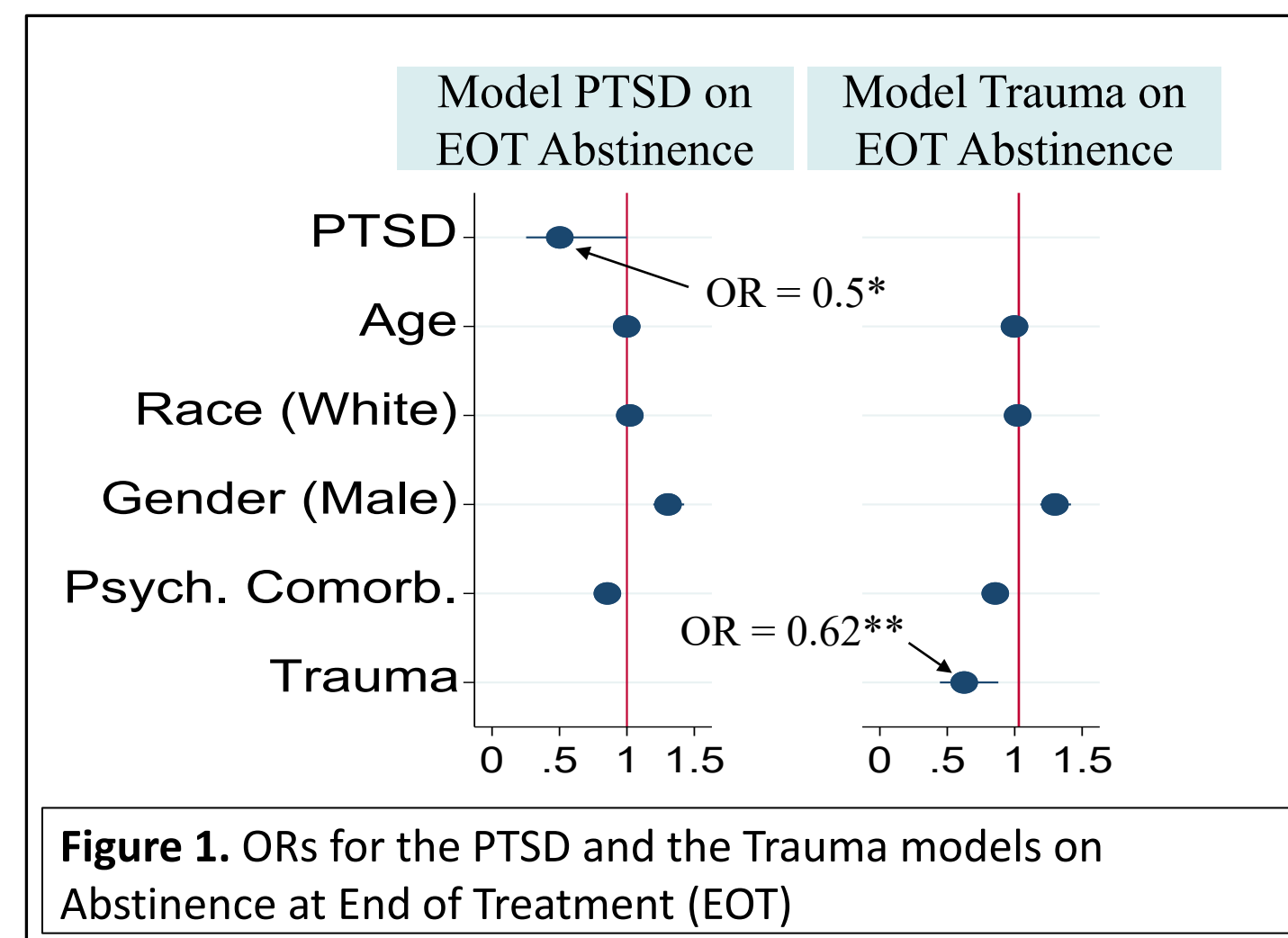


Figure 1. ORs for the PTSD and the Trauma models on Abstinence at End of Treatment (EOT)

Effects of PTSD and Trauma on Nicotine Dependence and Affect:

Figure 2 presents the linear regression results of PTSD and trauma on nicotine dependence, PANAS negative and PANAS positive affect. Patients with PTSD were more likely to have higher levels of negative affect and patients with childhood trauma were more likely to have higher nicotine dependence, higher negative affect and lower positive affect than patients without trauma.

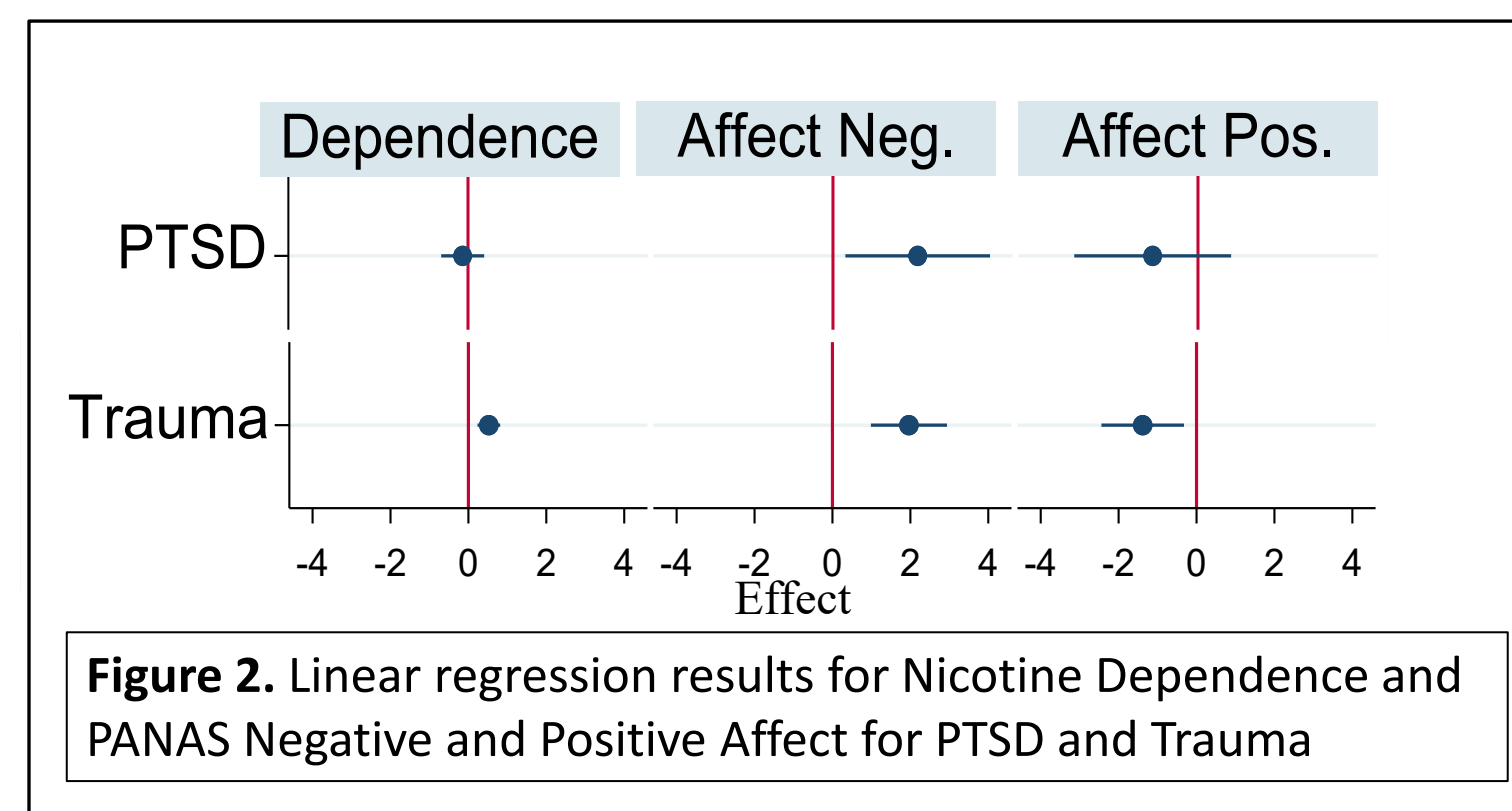


Figure 2. Linear regression results for Nicotine Dependence and PANAS Negative and Positive Affect for PTSD and Trauma

Mediation effects of Negative Affect:

Figure 3 presents the mediation effects of negative affect. We found significant statistical mediation of negative affect for both PTSD (OR = 0.93) and trauma (OR = 0.95).

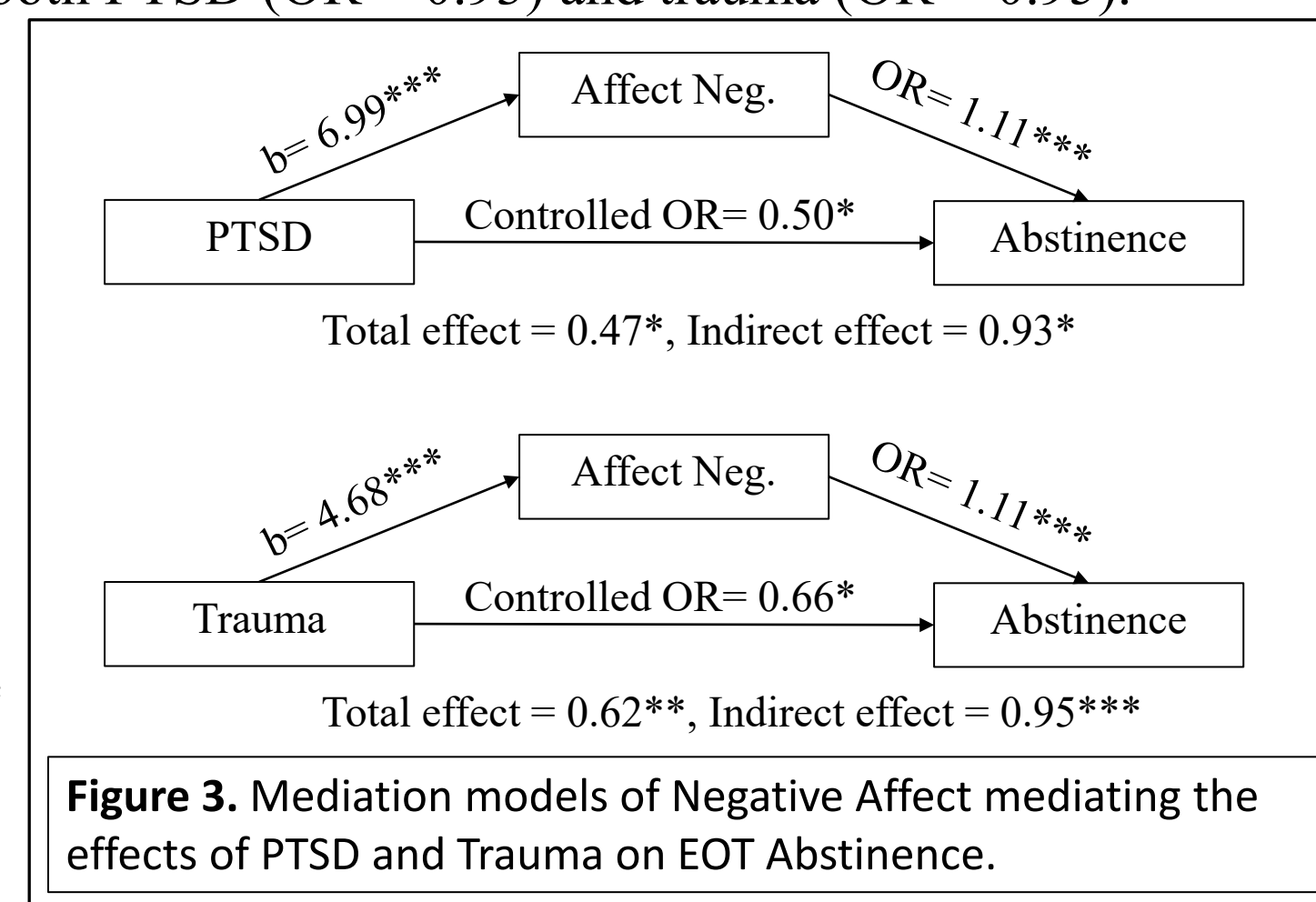


Figure 3. Mediation models of Negative Affect mediating the effects of PTSD and Trauma on EOT Abstinence.

Conclusions and Discussion

- Overall, the results confirm the hypotheses that PTSD and trauma adversely affect smoking outcomes.
- For abstinence, both PTSD and trauma were significant predictors, controlling for demographics and other psychiatric comorbidities.
- We found trauma to significantly predict nicotine dependence, for both negative and positive affect, whereas PTSD significantly predicted negative affect.
- Levels of negative affect accounted for a small but significant proportion of the effect of PTSD and trauma on abstinence.
- Given the increased risk for poorer abstinence outcomes in this population, this knowledge will aid in the development of targeted tobacco treatments that may improve outcomes.

Acknowledgements

This work was supported by NIH/NCI R25CA056452 and by the NIH/NCI under award number P30 CA016672. Special thanks to Dr. Janice Blalock, Dr. George Kypriotakis, and Dr. Maher Karam-Hage for their mentorship this summer!

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