



The Role of Depression on the Ability to Achieve Smoking Abstinence

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Background

Research shows a relationship between depression and tobacco use disorder (TUD) such that individuals with depression are more likely to smoke, and TUD can exacerbate depressive symptoms. Understanding the effect of depression on the severity of TUD is crucial in developing a tailored treatment to improve the overall patient outcome. This study aims to determine whether higher levels of depression among cancer patients who smoke would impact their ability to quit smoking.

Methods

Of the 12,080 patients of ages 18 to 85 who participated in the Tobacco Research and Treatment Program (TRTP) at MD Anderson Cancer Center from 2006 to 2024, we analyze the outcome of 9,682 who had abstinence data at their end of treatment (EOT; 3 months post-treatment). The tobacco treatment included pharmacotherapy and counseling from TRTP staff.

The Patient History Questionnaire (PHQ) was used to screen for anxiety and depression at baseline evaluation. Those meeting DSM-IV criteria for Major Depressive Disorder (MDD) were compared to those who did not, using Fagerström Test for Cigarette Dependence (FTCD) as a measure of nicotine dependence. We performed a logistic regression to examine the relationship between MDD and abstinence from smoking, adjusting for sex, race, age, ethnicity, positive and negative affect, anger, anxiety, craving, and sadness. Lastly, to control for the impact of nicotine dependence on end of treatment abstinence, we analyzed our data with and without FTCD scores in the model.

Results

	No Major Depression (N=4,505)	Major Depression (N=739)	All (N=5,244)
Sex			
Female	2,288 (50.8%)	488 (66.0%)	2,776 (52.9%)
Male	2,217 (49.2%)	251 (34.0%)	2,468 (47.1%)
Primary Race			
American Indian or Alaska Native	14 (0.3%)	4 (0.5%)	18 (0.3%)
Asian	57 (1.3%)	10 (1.4%)	67 (1.3%)
Black or African American	560 (12.4%)	96 (13.0%)	656 (12.5%)
Declined to Answer	16 (0.4%)	2 (0.3%)	18 (0.3%)
Native Hawaiian or Other Pacific Islander	2 (0.0%)	1 (0.1%)	3 (0.1%)
Other	179 (4.0%)	33 (4.5%)	212 (4.0%)
Unknown	55 (1.2%)	8 (1.1%)	63 (1.2%)
White or Caucasian	3,622 (80.4%)	585 (79.2%)	4,207 (80.2%)
	median (iqrt range)	median (iqrt range)	median (iqrt range)
Current Age	66 (59-73)	63 (56-71)	66 (58-73)
FTCD_Total	4 (3-6)	5 (3-6)	4 (3-6)
POS_AFF	32 (26-37)	25 (19-31)	31 (25-36)
NEG_AFF	18 (13-24)	29 (23-35)	19 (14-26)
WSWS_ANGER	5 (3-7)	9 (7-11)	5 (3-8)
WSWS_ANXIETY	8 (5-11)	12 (10-14)	9 (6-11)
WSWS_CRAVING	10 (8-12)	12 (10-14)	11 (8-13)
WSWS_SAD	6 (4-8)	11 (9-13)	6 (4-9)
PHQ_Anxiety	0 (0-0)	1 (0-1)	0 (0-0)

Figure 1: TRTP demographics of participants including sex, race, age, etc.

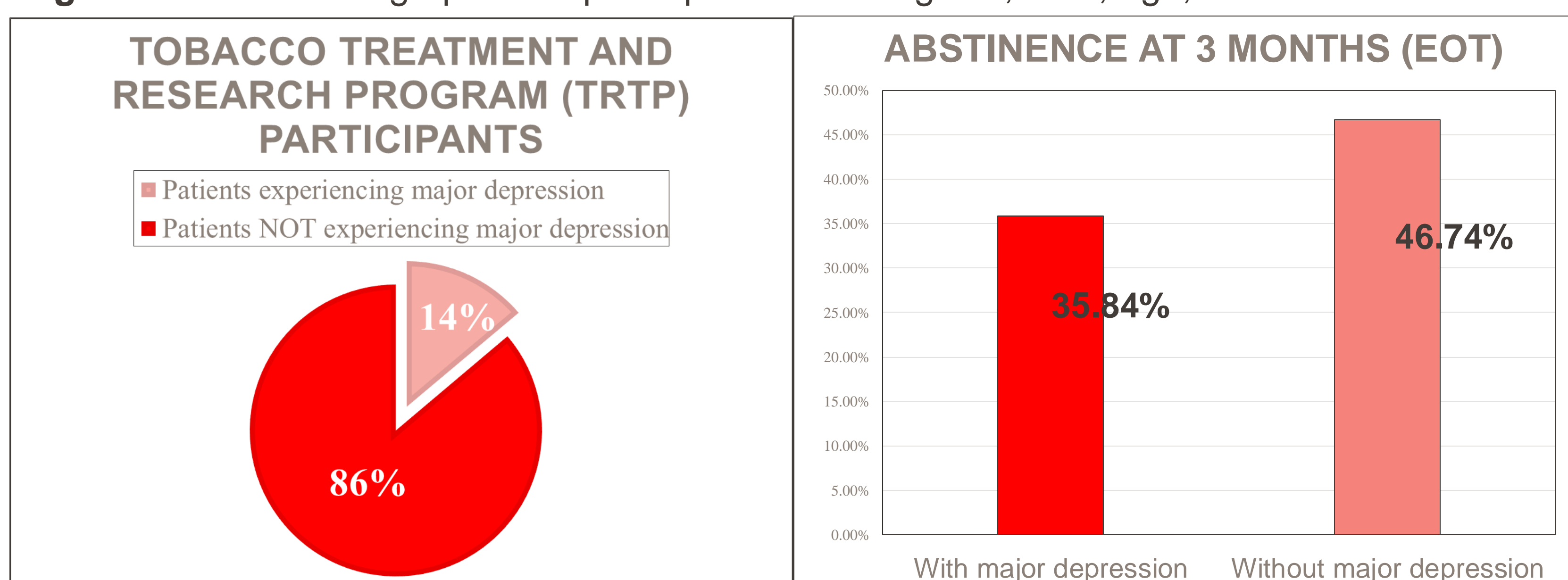


Figure 2: This data is based on 10,002 cancer patients (n=10,002) who participated in the Tobacco Treatment and Research Program and were assessed for major depression using the DSM-IV.

Figure 3: Data available from an analytic sample of 7,033 participants at the end of treatment (EOT) 3 months post-treatment signifies a 10.9% less likelihood of remaining abstinent in DSM-D is met.

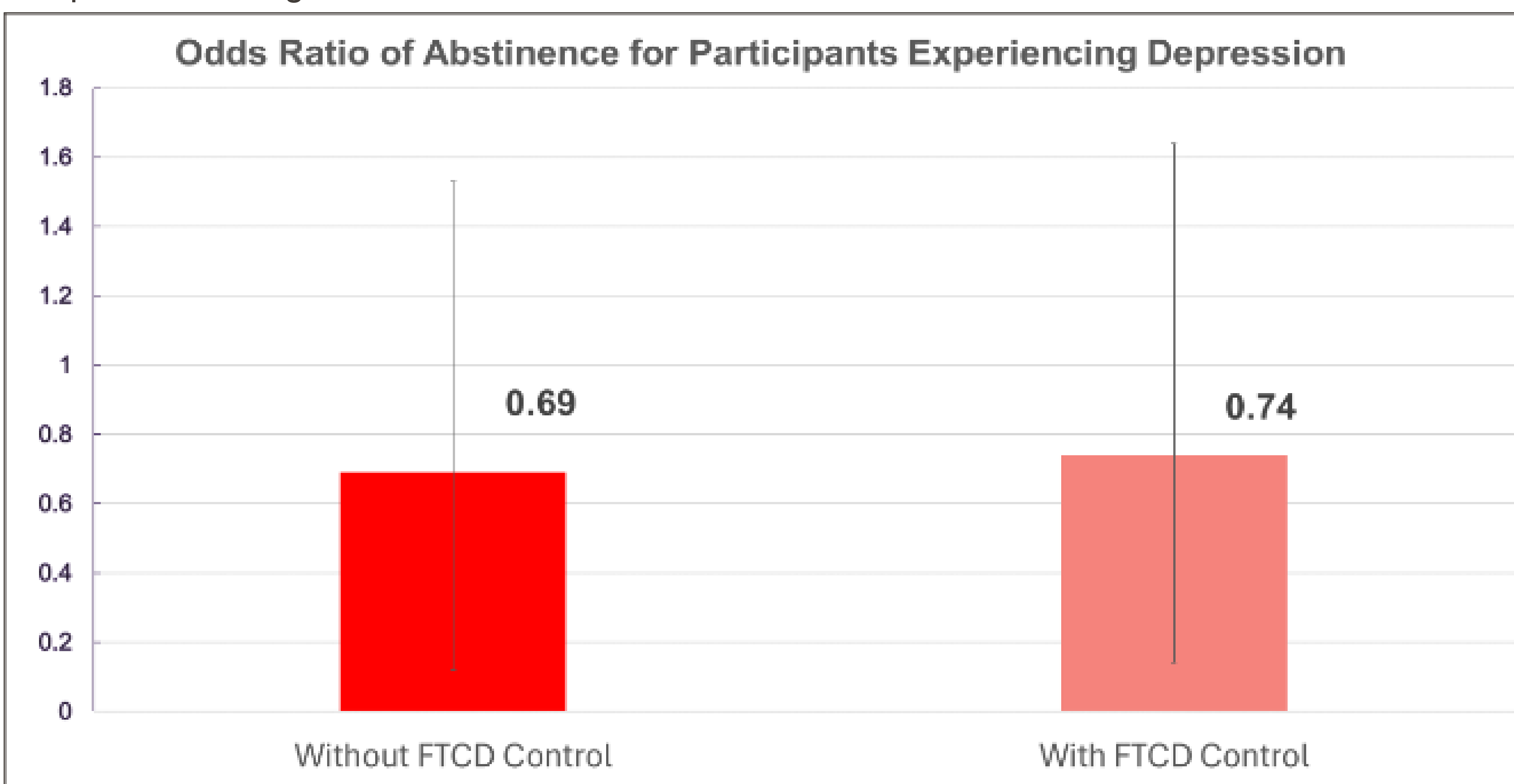


Figure 4: A logistic regression with and without controlling for FTCD. 30.58% reduction in the odds of abstaining seen when experiencing MDD (OR = .69, 95% CI [0.57, 0.84]). When controlling for FTCD, the odds of abstaining was 26.36% (OR = 0.74, 95% CI [0.60, 0.90]).

Conclusion

Major Depressive Disorder (MDD) plays a significant role in reducing the likelihood of smoking abstinence among cancer patients despite controlling for nicotine dependence severity. This suggests treating MDD could improve smoking abstinence rates in this population.

Discussion

This data confirms prior findings on the complex interplay between depression, nicotine dependence (FTCD), and smoking abstinence outcomes among cancer patients. The study emphasizes the independent role of depression in affecting smoking abstinence treatment outcomes; regardless of nicotine severity, major depression continued to negatively impact abstinence rates. Integrating management/ treatment of depression alongside tobacco treatment can optimize abstinence success rates and improve the health outcomes and quality of life for individuals seeking to quit smoking.

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