

The Effect of Anxiety Disorders on Smoking Cessation in Cancer Patients

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Introduction

- Anxiety disorders, such as generalized anxiety disorder (GAD) and panic disorder, are among the most prevalent psychiatric disorders. Over 40 million adults in the United States suffer from an anxiety disorder, and an estimated 31.1% of adults experience an anxiety disorder at some point in their lives.
- Smoking is linked to psychiatric comorbidities, as 1 in 3 individuals with a psychiatric disorder smoke. Specifically, it has been estimated that 38% of individuals with an anxiety disorder are current smokers, and among all current adult smokers 23% screen positive for an anxiety disorder. Smoking rates for those with anxiety disorders are approximately double the rates of smokers with no psychiatric disorder.
- Furthermore, studies have revealed the high prevalence of anxiety symptoms in cancer patients, which has been found to increase with increasing stage of cancer disease. Anxiety disorders are related to nicotine dependence and unsuccessful quit attempts. Due to the prevalence of anxiety disorders in cancer patients, smoking cessation in cancer patients presents unique challenges. Although some research has been done to elucidate the relationship between smoking and anxiety disorders, further research is needed in cancer patients.

Objectives

- To examine whether anxiety symptoms/disorders are associated with smoking cessation outcomes in cancer patients.
- To analyze the moderating effect of other psychiatric disorders, such as major depressive disorder, on the relationship between anxiety disorders and smoking cessation.
- We hypothesized a lower smoking abstinence rate at 9 months among patients with anxiety symptoms/disorder.
- We also hypothesized that a greater level of anxiety would predict a lower smoking abstinence rate. This pattern would be more pronounced in patients with anxiety and another comorbid psychiatric disorder.

Methods

- The sample included over 2300 cancer patients treated at the University of Texas MD Anderson Tobacco Research and treatment program (TRTP) from 2007-2022. Within the sample, ~800 patients were treated for psychiatric disorders (e.g., Anxiety, Depression, Insomnia), and ~1500 patients screened positive for one or more disorders but did not get treated.
- All TRTP patients received an initial consultation, pharmacotherapy, and 6-8 counseling sessions. Smoking cessation counseling was based on motivational interviewing and social, cognitive, behavioral based strategies. The primary outcome was smoking abstinence at end of treatment (3 months) and at 9 months after the initial consultation.
- In conjunction with a psychiatric evaluation, patients were screened using a patient history questionnaire (PHQ) for DSM IV disorders and the Fagerström Test for Cigarette Dependence (FTCD).
- For this project, responsible conduct of research was conducted for data acquisition, management, sharing, and ownership.

Results

Overall Patient Demographics		
Ethnicity	5/1/21-4/30/23	2/1/06-4/30/23
Black	12.2%	11.1%
Hispanic	1.0%	3.3%
Other	8.8%	7.8%
White	78.0%	77.8%
Gender		
Female	50.2%	48.7%
Male	49.8%	51.3%
Location		
In State	74.3%	79.1%
Out of State	25.6%	20.4%
Outside U.S.	0.1%	0.5%
Other Characteristics	MEAN	SD
Age	60.4	11.5
Cigarettes Per Day	15.2	9.2
Drinks Per Day	1.6	2.1
Years Smoked	35.0	14.3
FTCD	4.1	2.1
CES-D	14.5	11.5
PANAS Negative Affect	19.8	8.3
PANAS Positive Affect	29.8	8.5
US-AUDIT	3.4	4.7
Sleep Questionnaire	9.3	6.1

Figure 1: Patient Demographics and Smoking Related Characteristics May 1, 2022- April 30, 2023. Demographic characteristics for entire Tobacco Treatment Program since inception (2006-2023 are also presented for comparison.

Cancer Site (N=7,276)	N	%
ABDOMINAL CAVITY VISCERA	1178	16.2%
CHEST CAVITY VISCERA	1139	15.7%
HEAD & NECK	1102	15.1%
BREAST	1000	13.7%
SKIN	645	8.9%
SOFT TISSUE	446	6.1%
RETICULOENDOTHELIAL-HEMATOPOIETIC SYSTEM	442	6.1%
GENITAL SYSTEM, MALE	433	6.0%
GENITAL SYSTEM, FEMALE	347	4.8%
URINARY TRACT, MALE - FEMALE	249	3.4%
CENTRAL NERVOUS SYSTEM	126	1.7%
METASTATIC CANCER - (NO PRIMARY DISCOVERED)	91	1.3%
BONES SKELETAL SYSTEM	78	1.1%

Figure 2: Cancer Diagnosis. Primary cancer diagnosis obtained from the tumor registry.

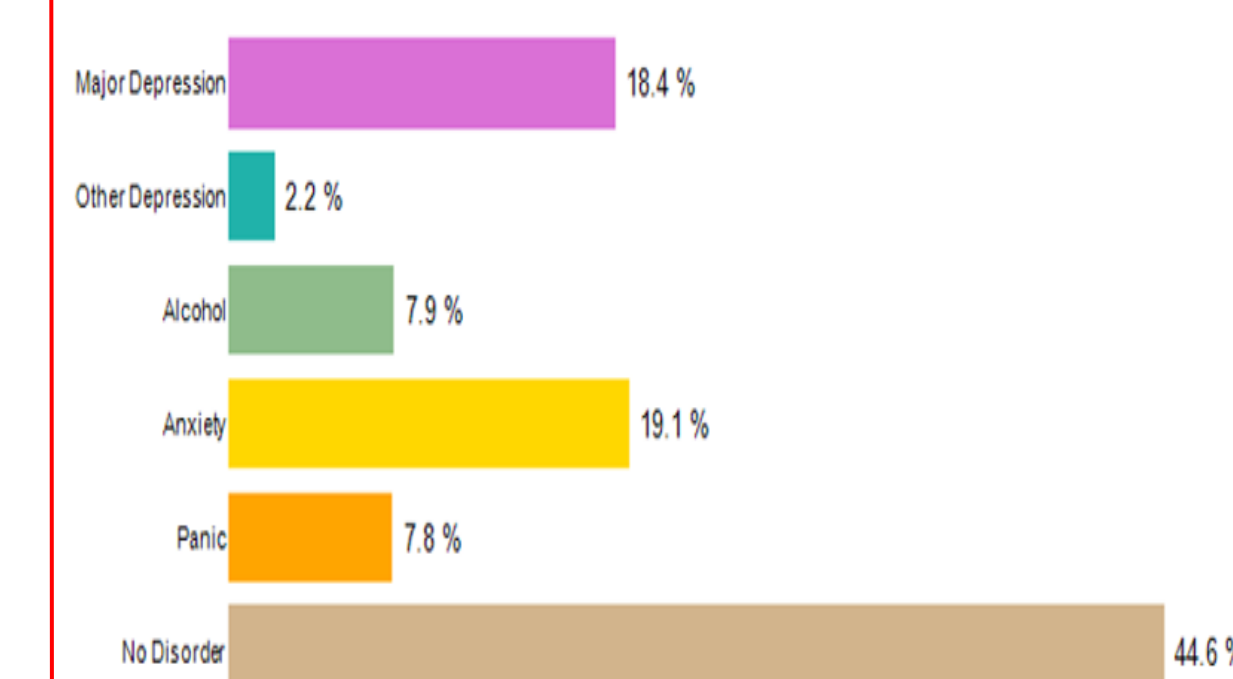


Figure 3: Mental Status of Patients Entering Treatment May 1, 2022- April 30, 2023.

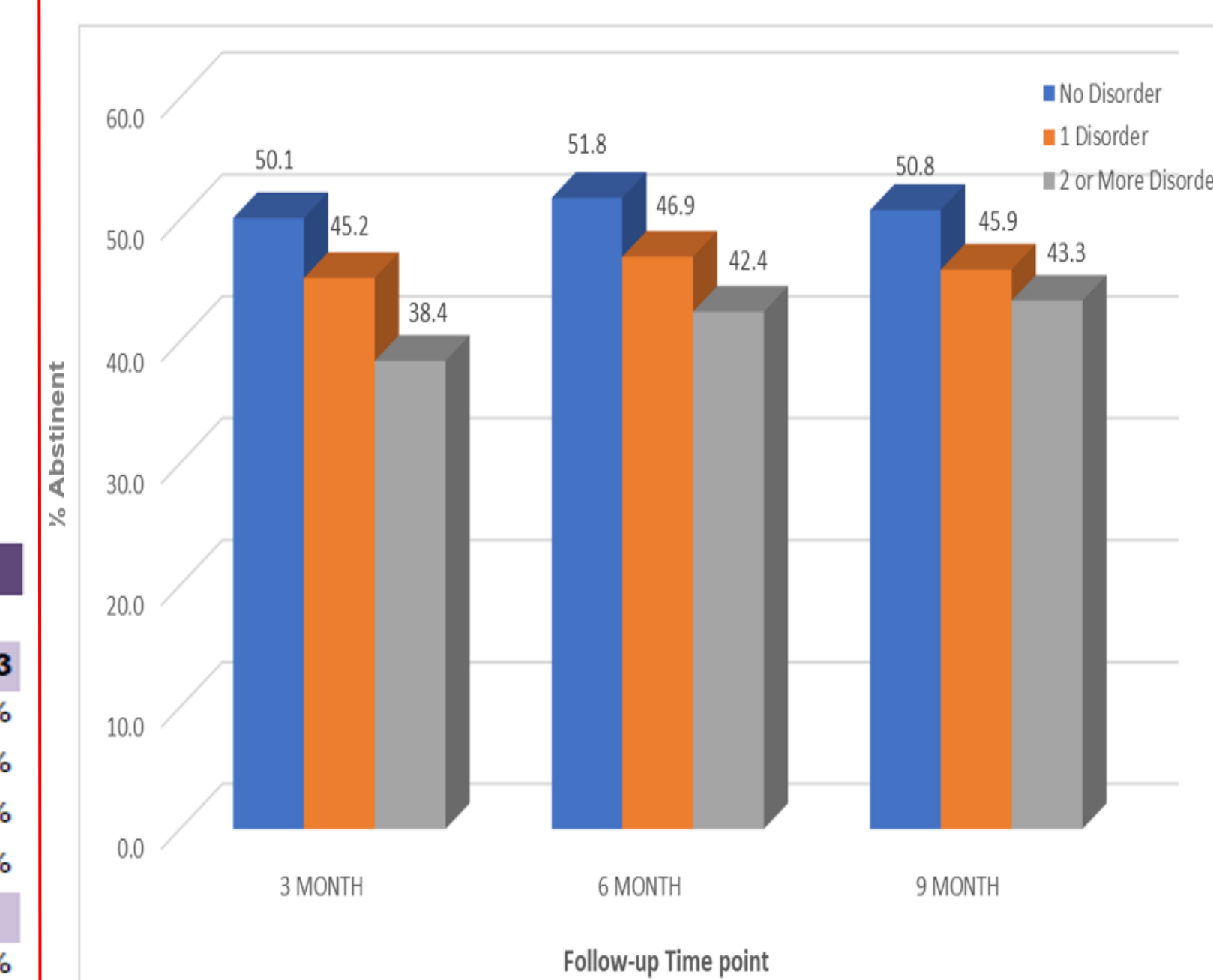


Figure 4: Abstinence Rates by Number of Psychiatric Disorders

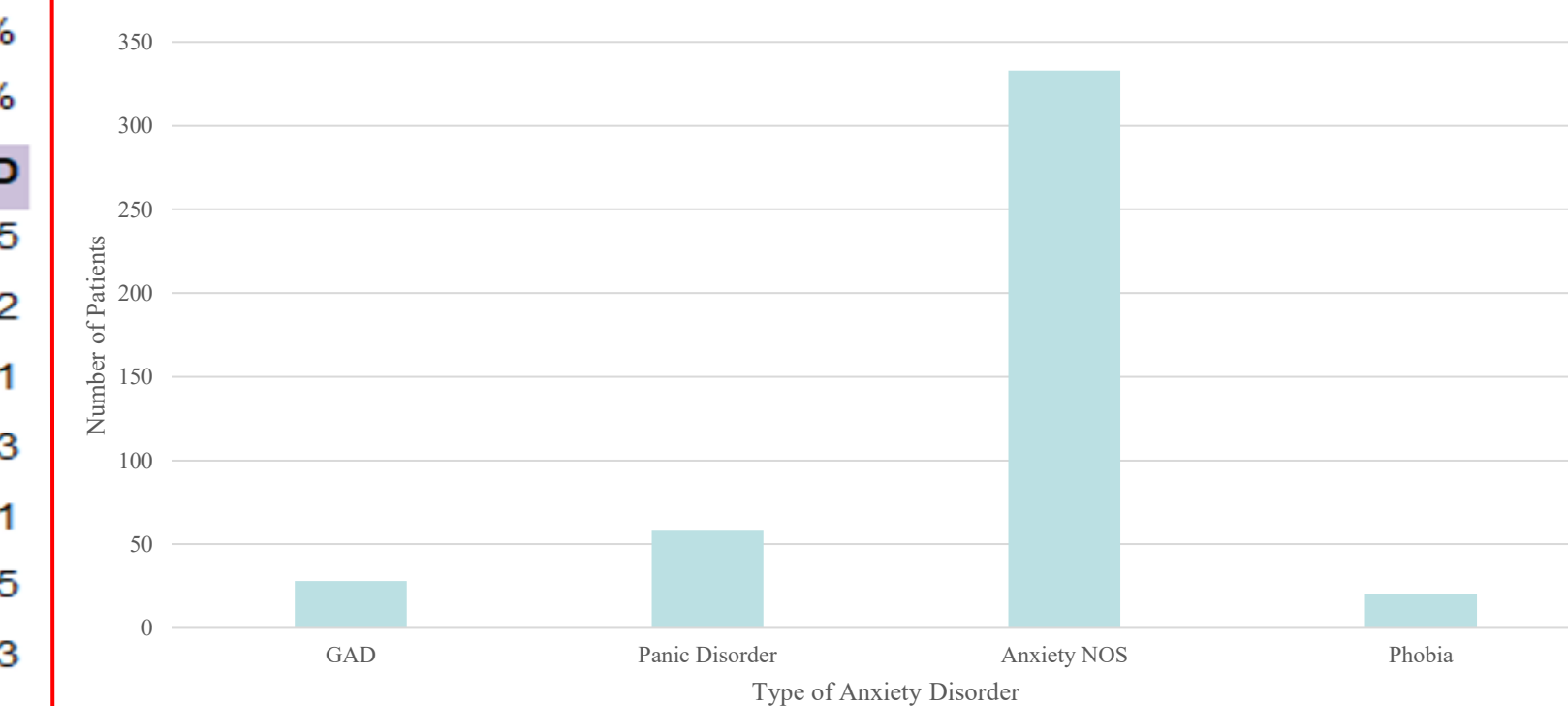


Figure 5: Number of Patients Across Different Types of Anxiety Disorders. Among the 807 patients in the sample treated for psychiatric disorders, 439 have some form of an anxiety disorder.

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Discussion

Based on preliminary findings, the patient demographic is composed of primarily in-state patients. The ethnicity of the sample is majority white. There is approximately an even ratio of males and females in the sample. The most common cancer diagnoses of the sample includes abdominal cavity viscera, head and neck, breast, and skin cancer.

Among patients entering treatment from May 1, 2022- April 30, 2023, 44.6% had no psychiatric disorder, 19.1% had anxiety disorder, 18.4% had major depressive disorder, 7.9% had alcohol use disorder, 7.8% had panic disorder, and 2.2% had other depressive disorder.

Among the 807 patients treated for a psychiatric disorder from 2007-2022, more than half (439) had an anxiety disorder. The most common was anxiety not otherwise specified.

Additionally, patients with no psychiatric disorder were found to have higher abstinence rates at 3 months, 6 months, and 9 months. Patients with 1 disorder had lower abstinence rates at 3 months, 6 months, and 9 months. Patients with 2 or more disorders had the lowest abstinence rates at 3 months, 6 months, and 9 months. Patients with 2 or more disorders had 7.5% lower abstinence at 9 months compared to patients with no psychiatric disorders.

Conclusions

The preliminary data analyses have led to valuable insights about the demographics, cancer diagnoses, and psychiatric disorders of the patients in the sample. Additionally, that the number of psychiatric disorders a patients has correlates negatively with the abstinence rates.

The next step in our data analysis will be to concentrate on anxiety disorders, specifically, and see how they impact abstinence rates. We will also examine how the level of anxiety affects abstinence and whether treating anxiety improves abstinence rates.

A better understanding of the role of anxiety in the ability to quit smoking among cancer patients will lead to more optimized/individualized treatment and improved abstinence rates. Tobacco causes one third of all cancer deaths, and abstinence from smoking is critical for improving cancer survival rates, increasing the effectiveness of cancer treatment, and reducing the risk of cancer treatment complications.

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