Journal Reading

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Research

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Preexisting Psychiatric Risk Factors and Any and Long-Term Opioid Use in Head and Neck Cancer

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Introduction

- Chronic pain affects more than two-thirds of patients with head and neck cancer (HNC).
- Approximately 80% of patients with HNC received opioid prescriptions during active treatment.
- Between 15 % to 33% of those patients continued long-term opioid use.

Introduction

- HNC patients also experience an excess burden of psychiatric comorbidities.
- HNC is considered the most emotionally distressing of all cancers.
- Depression rates could range from 9% to more than 50%.

Introduction

- Cancer survivors with depression under non-medical use of pain prescriptions are at increased risk for suicidal behavior.
- Suicide mortality in HNC is also among the highest of all cancer sites.

Introduction--Prior studies

- Prior studies investigating risk factors for Long-term opioid therapy in patients with HNC are limited by
  - small sample sizes without control for confounders
  - exclusion of key factors in models of LTOT, like benzodiazepine comedication.

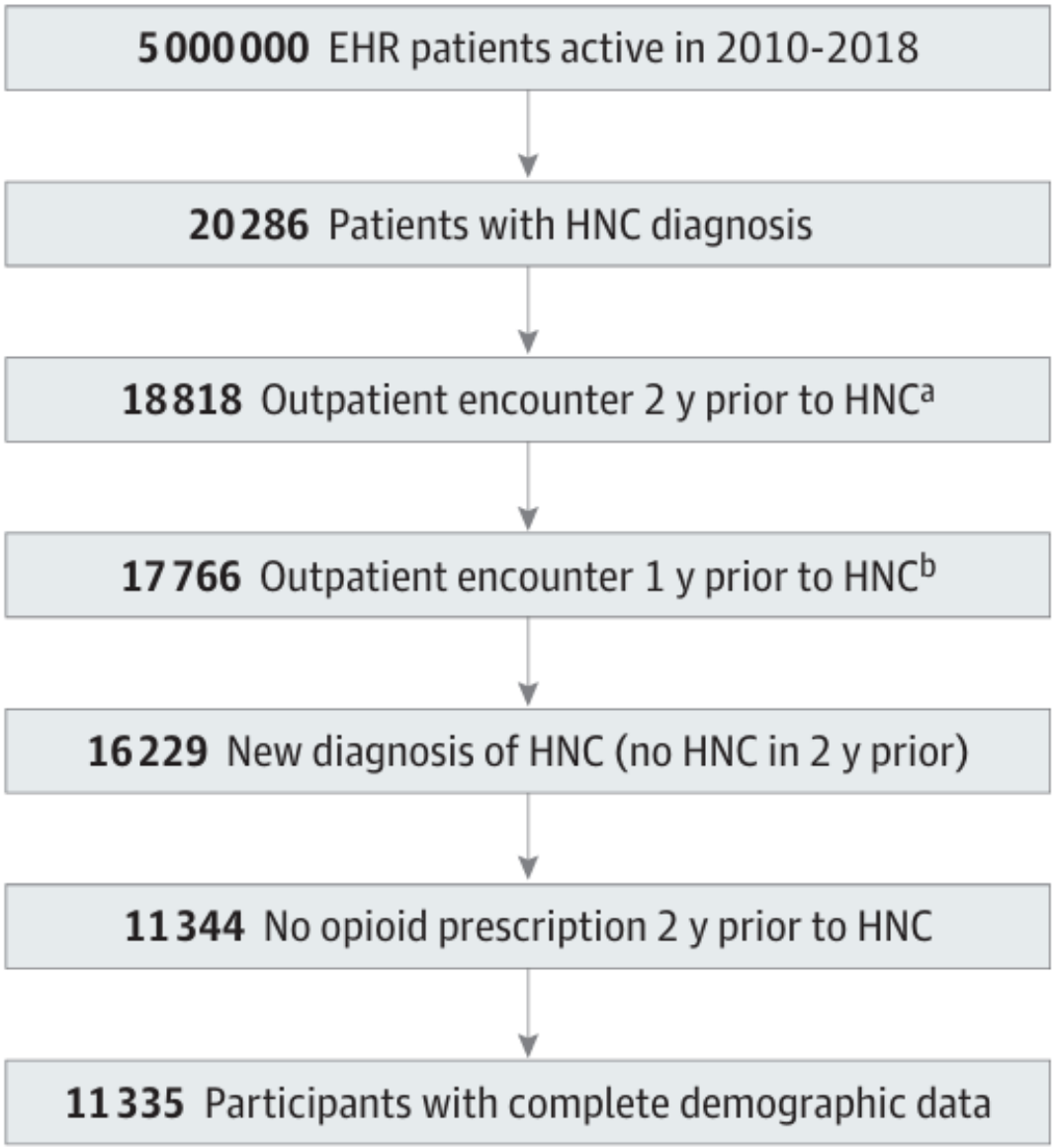
Introduction--Prior studies

- There are mixed and limited evidence regarding the association between common risk factors (eg, anxiety, depression, benzodiazepine comedication, smoking, and substance use disorder) for LTOT in HNC patients.

Methods

Study Design and Participants

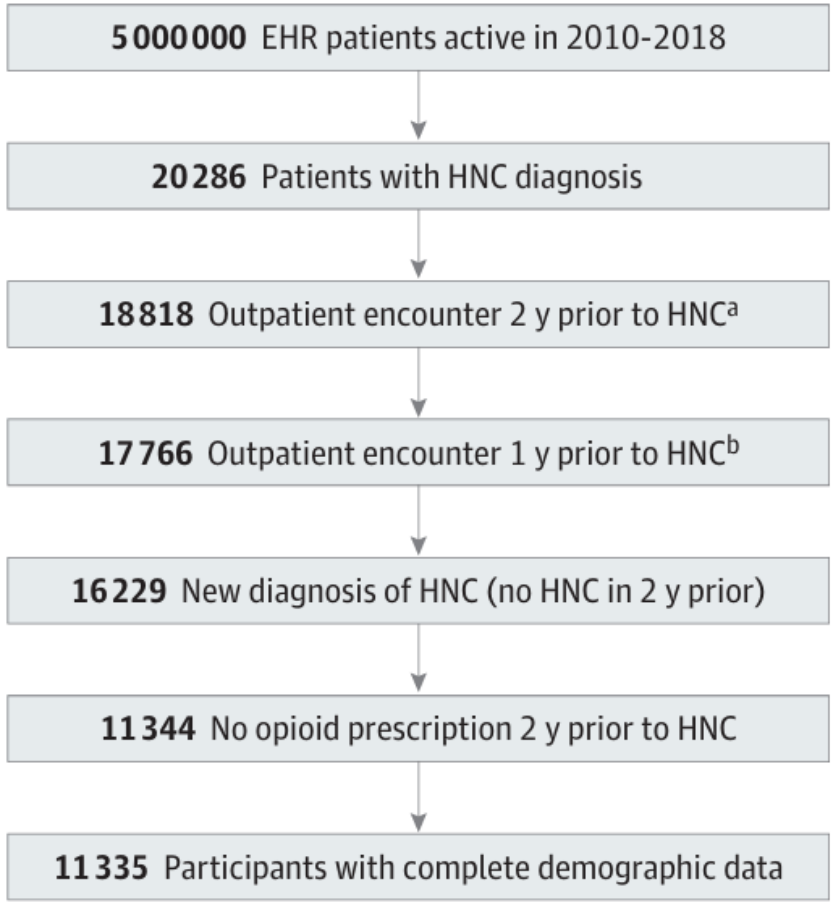
- EHR (electronic health record) data across the US
- Patients:>18 years old
- Data included patients with private, government, or no health insurance.



Methods

Study Design and Participants

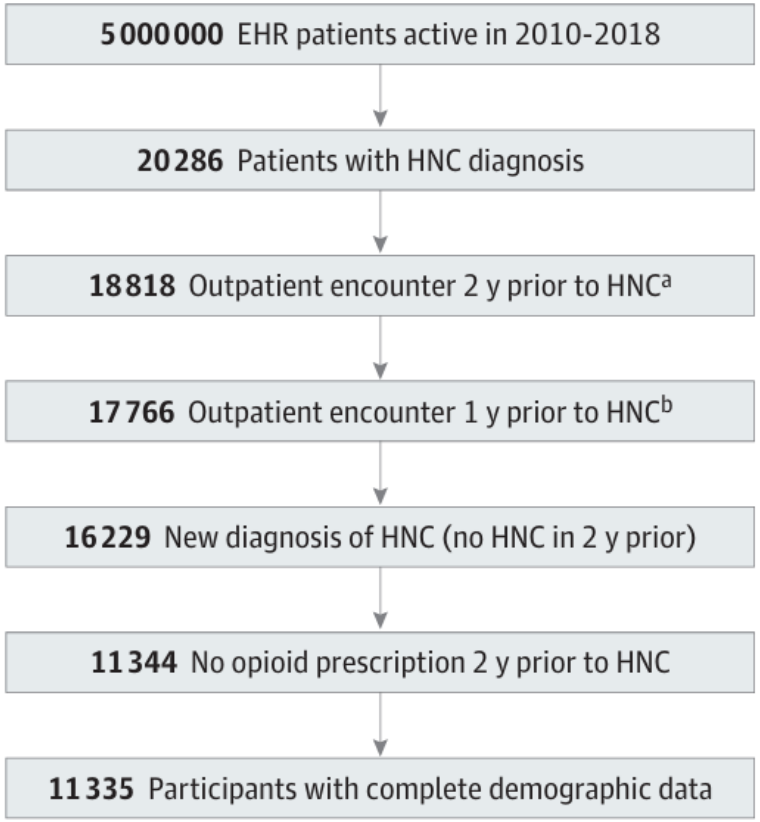
- Eligible patients had a new HNC diagnosis between 2012 and 2017.
- HNC diagnosis : ICD 9, ICD 10
- Patient informed consent and further institutional review and approval were not required, as the Optum data set is deidentified.



Methods

Study Design and Participants

- Because we were interested in the odds of new prescription opioid use, the 2 years prior to index were used to remove prevalent opioid prescriptions and prevalent HNC cases.
- The index date was the date of the new HNC diagnosis.
- Patients must have had 1 or more outpatient encounters in the 2 years prior to index and within 1 year after index.



Methods

Main Outcomes

- We included immediate and extended-release formulations for the following opioids prescribed at any dose and duration:
- codeine, dihydrocodeine, fentanyl, hydrocodone, hydromorphone, levorphanol, meperidine, methadone, morphine, oxycodone, oxymorphone, pentazocine, tapentadol, and tramadol.

Methods

Exposures

- All exposures/risk factors for receiving an opioid prescription and for LTOT were measured in the 2 years prior to index.
- Exposures of interest included anxiety disorders, depression, nicotine dependence/smoking, substance use disorder (SUDs), and benzodiazepine prescription.
- SUD was a combination of alcohol misuse/dependence or any drug misuse/dependence.
- Drug misuse/dependence included sedative, cocaine, cannabis, amphetamine, hallucinogens or other types of misuse/dependence.

Methods

Covariates

- Covariates were measured in the 2 years prior to index.
- We adjusted for age, sex, self-reported race (Black,White,other[Asian and other racial groups]/unknown), and geographic census regions (Midwest, Northeast, South, West, other/unknown).

Methods

Statistical Analysis

- All analyses were conducted using SAS statistical software, version 9.4 (SAS Institute)
- Bivariate associations of each outcome (ie,any opioid use, long-term opioid use) were assessed using $\chi 2$ tests, independent samples t tests, and separate bivariate logistic regression models to calculate crude odds ratios and 95% CIs.

Results

- The final analytic cohort contained 11355 adult patients.
- Patients had a mean (SD) age of 57.1 (15.5) years, and 55.4% were female.
- In the 12 months after HNC diagnosis, 23.4% received an opioid prescription.

Table 1. Characteristics of Patients With a New Head and Neck Cancer Diagnosis

Characteristic	No. (%) (N = 11 335)
Age, mean (SD), y	57.1 (15.5)
Sex	
Female	6275 (55.4)
Male	5060 (44.6)
Race	
Black	948 (8.4)
White	9444 (83.3)
Other[a]/unknown	943 (8.3)
Region	
Midwest	7767 (68.5)
Northeast	1729 (15.3)
South	959 (8.5)
West	586 (5.2)
Other/unknown	294 (2.6)
Psychiatric risk factors	
Anxiety	828 (7.3)
Depression	797 (7.0)
Nicotine dependence/smoking	2404 (21.2)
Substance use disorder	397 (3.5)
Benzodiazepine prescription	870 (7.7)
Outcomes	
Any opioid prescription within 12 mo	2655 (23.4)
Long-term opioid therapy[b]	129 (4.9)

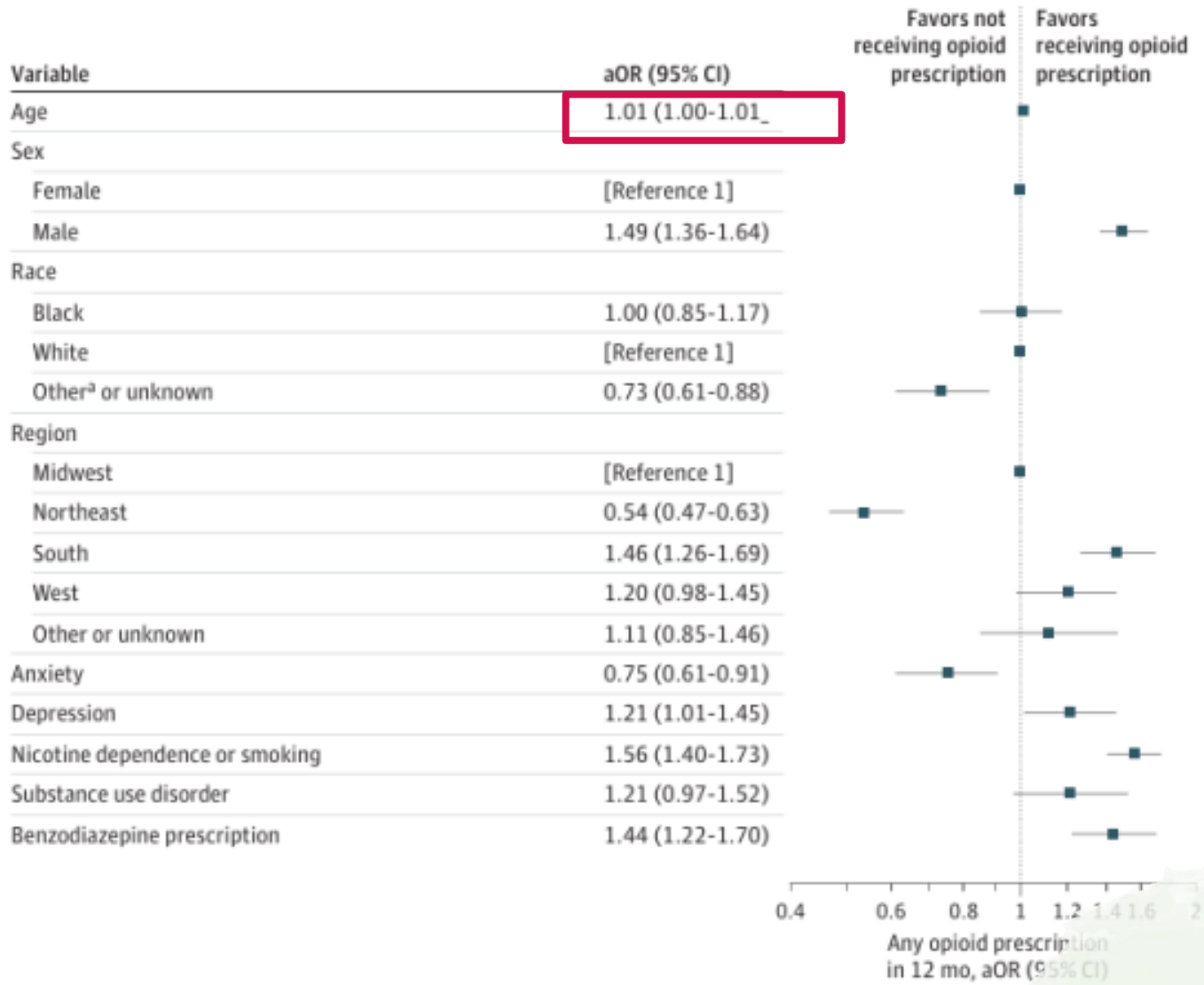
[a] The other category includes self-reported Asian and other race.

[b] Long-term opioid therapy is defined as 10 or more opioid prescriptions within 12 months.

Results

Fully Adjusted Logistic Regression Model Predicting Any Opioid Prescription in 12Months After Head and Neck Cancer Diagnosis

- With each additional year of age, risk for any opioid significantly increased by less than1%.

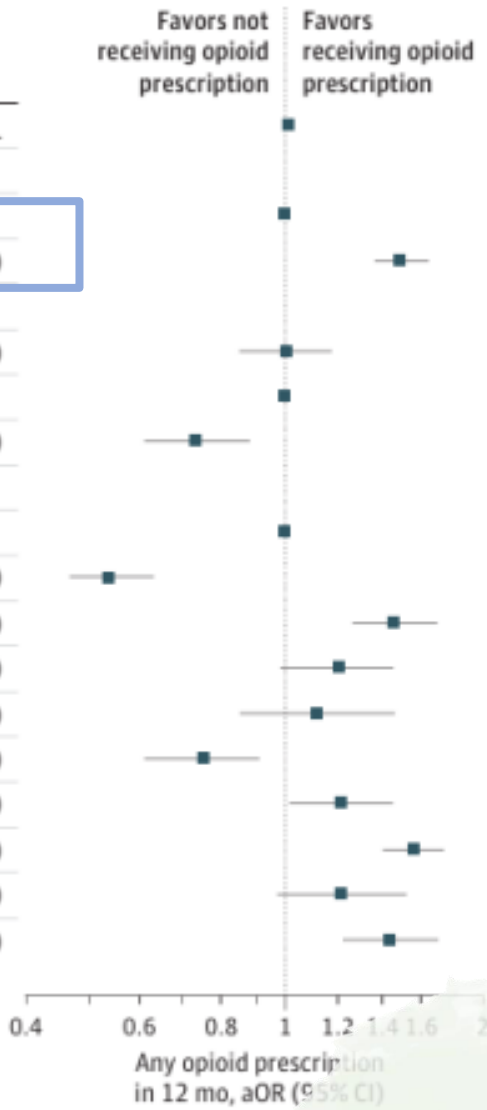


Results

Fully Adjusted Logistic Regression Model Predicting Any Opioid Prescription in 12Months After Head and Neck Cancer Diagnosis

- Male patients were 49% more likely to receive an opioid prescription (adjusted odds ratio[aOR],1.49; 95%CI,1.36-1.64)

Variable	aOR (95% CI)
Age	1.01 (1.00-1.01_
Sex	
Female	[Reference 1]
Male	1.49 (1.36-1.64)
Race	
Black	1.00 (0.85-1.17)
White	[Reference 1]
Other[a] or unknown	0.73 (0.61-0.88)
Region	
Midwest	[Reference 1]
Northeast	0.54 (0.47-0.63)
South	1.46 (1.26-1.69)
West	1.20 (0.98-1.45)
Other or unknown	1.11 (0.85-1.46)
Anxiety	0.75 (0.61-0.91)
Depression	1.21 (1.01-1.45)
Nicotine dependence or smoking	1.56 (1.40-1.73)
Substance use disorder	1.21 (0.97-1.52)
Benzodiazepine prescription	1.44 (1.22-1.70)



Results

Fully Adjusted Logistic Regression Model Predicting Any Opioid Prescription in 12Months After Head and Neck Cancer Diagnosis

- Depression, nicotine dependence, and benzodiazepine comedication were all positively associated with increased odds of receiving an opioid prescription

Variable	aOR (95% CI)
Age	1.01 (1.00-1.01_
Sex	
Female	[Reference 1]
Male	1.49 (1.36-1.64)
Race	
Black	1.00 (0.85-1.17)
White	[Reference 1]
Other[a] or unknown	0.73 (0.61-0.88)
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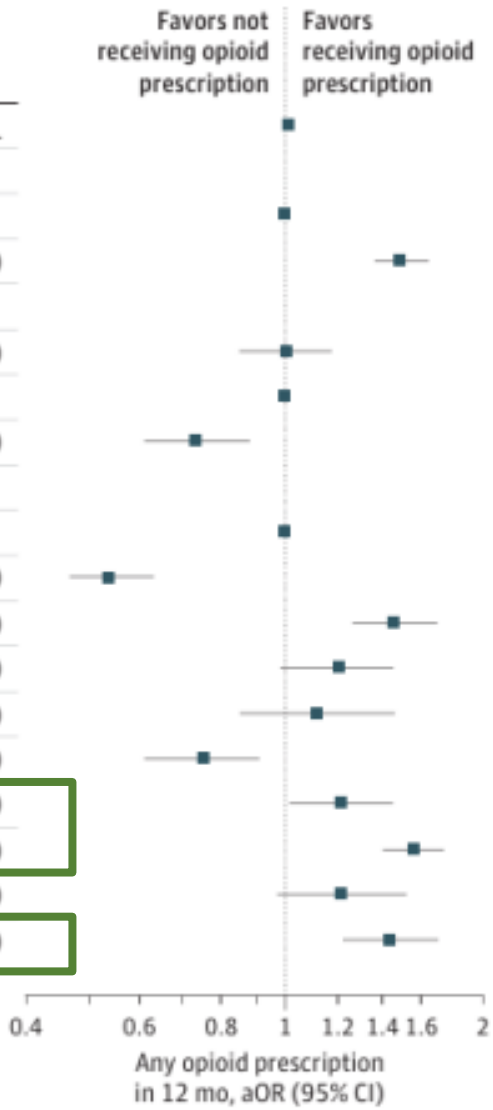

Results

Fully Adjusted Logistic Regression Model Predicting Any Opioid Prescription in 12Months After Head and Neck Cancer Diagnosis

- Patients with an anxiety disorder were significantly less likely to receive any opioid prescription(aOR,0.75;95%CI,0.61-0.91).
- Only SUD was not statistically significant (aOR,1.21;95%CI,0.97-1.52).

Variable	aOR (95% CI)
Age	1.01 (1.00-1.01_
Sex	
Female	[Reference 1]
Male	1.49 (1.36-1.64)
Race	
Black	1.00 (0.85-1.17)
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Other[a] or unknown	0.73 (0.61-0.88)
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Results

Bivariate Associations of Covariates With Long-Term Opioid Therapy(LTOT) in 12 Months After Head and Neck Cancer Diagnosis

- Male sex were significantly more common among those with LTOT.

Covariate	No. (%)		
	No LTOT (n = 2526)	LTOT[a] (n = 129)	cOR (95% CI)
Age, mean (SD), y	59.1 (14.9)	57.2 (11.0)	0.99 (0.98-1.01)
Sex			
Female	1169 (46.3)	40 (31.0)	1 [Reference]
Male	1357 (53.7)	89 (69.0)	1.92 (1.31-2.81)
Race			
Black	219 (8.7)	10 (7.8)	0.90 (0.46-1.75)
White	2152 (85.2)	109 (84.5)	1 [Reference]
Other[b]/unknown	155 (6.1)	10 (7.8)	1.27 (0.65-2.48)
Region			
Midwest	1772 (70.2)	74 (57.4)	1 [Reference]
Northeast	227 (9.0)	13 (10.1)	1.37 (0.75-2.51)
South	306 (12.1)	25 (19.4)	1.96 (1.22-3.13)
West	150 (5.9)	13 (10.1)	2.08 (1.13-3.83)
Other/unknown	71 (2.8)	<5[c]	1.35 (0.48-3.79)
Psychiatric risk factors			
Anxiety	171 (6.8)	13 (10.1)	1.54 (0.85-2.79)
Depression	203 (8.0)	11 (8.5)	1.07 (0.57-2.01)
Nicotine dependence/smoking	719 (28.5)	57 (44.2)	1.99 (1.39-2.85)
Substance use disorder	121 (4.8)	15 (11.6)	2.62 (1.48-4.62)
Benzodiazepine prescription	233 (9.2)	12 (9.3)	1.01 (0.55-1.86)

Results

Bivariate Associations of Covariates With Long-Term Opioid Therapy(LTOT) in 12 Months After Head and Neck Cancer Diagnosis

- Bivariate analyses indicated that anxiety, depression, and benzodiazepine comedication were not associated with LTOT.

Covariate	No. (%)		
	No LTOT (n = 2526)	LTOT[a] (n = 129)	cOR (95% CI)
Age, mean (SD), y	59.1 (14.9)	57.2 (11.0)	0.99 (0.98-1.01)
Sex			
Female	1169 (46.3)	40 (31.0)	1 [Reference]
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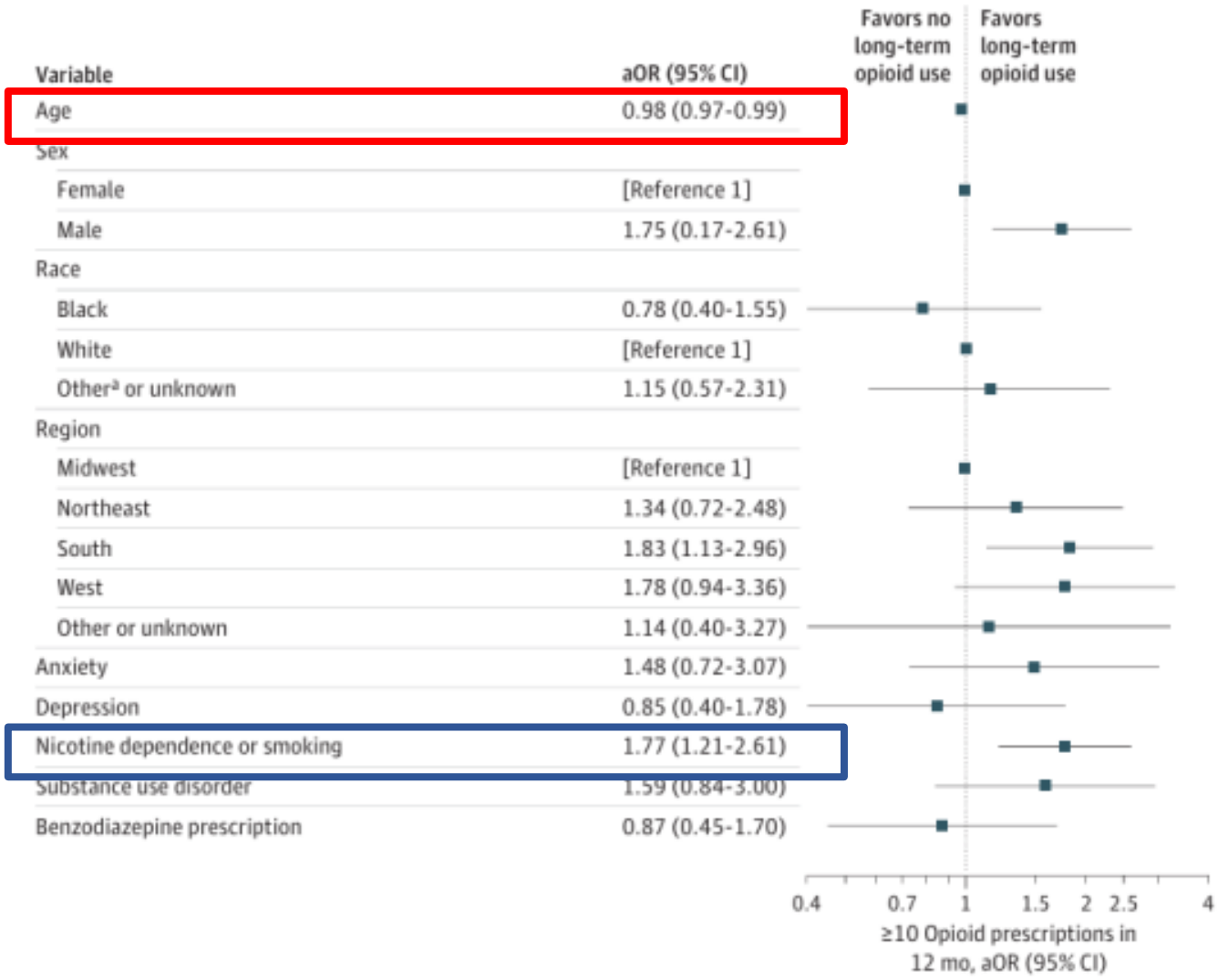
Results

Fully Adjusted Logistic Regression Model Predicting Long-Term Opioid Therapy With Any Opioid Prescription After Head and Neck Cancer Diagnosis

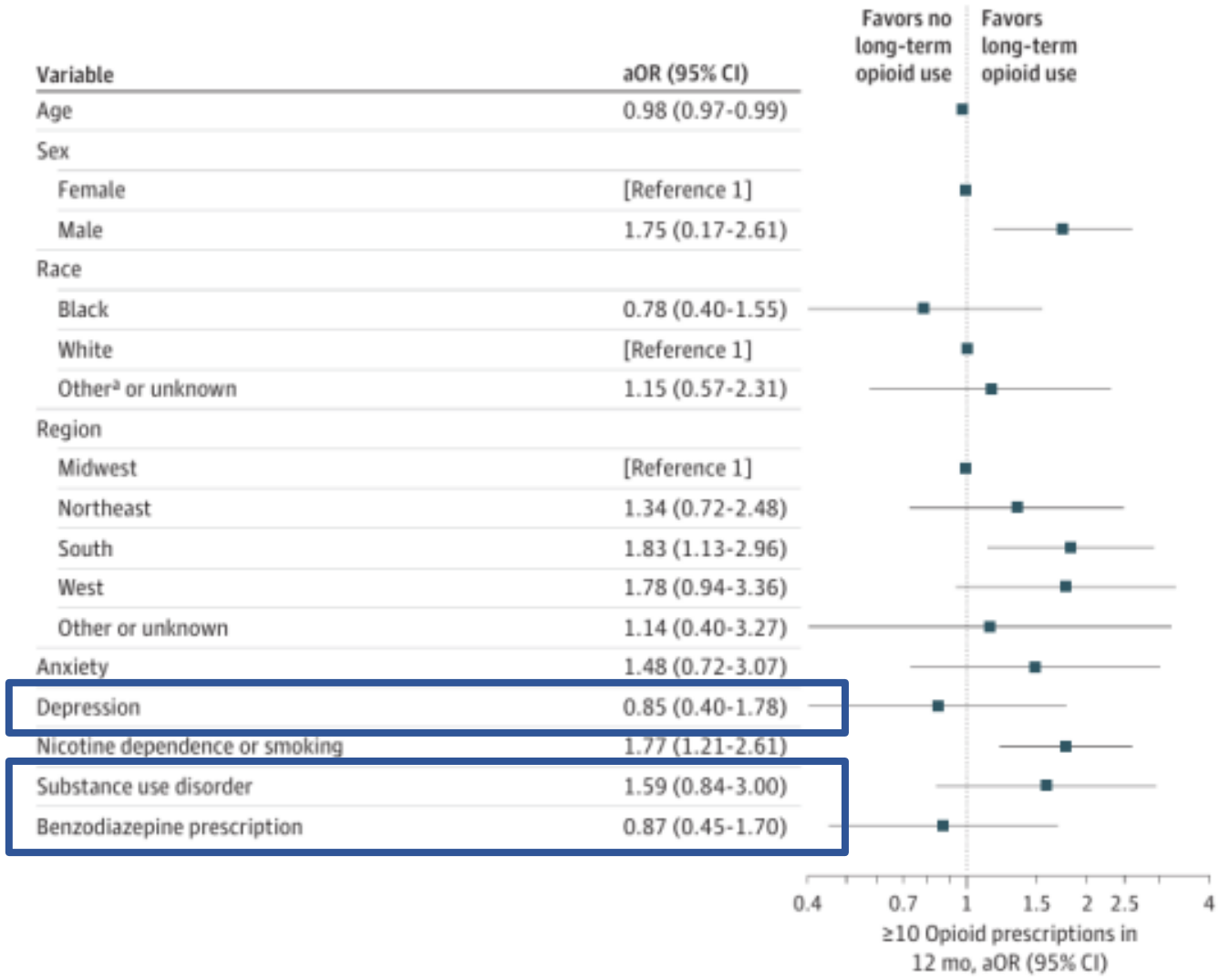
- With each additionally year of age, the risk for LTOT declined by 2%.
- Nicotine dependence/smoking was associated with a 77% greater odds of LTOT.



Results

Fully Adjusted Logistic Regression Model Predicting Long-Term Opioid Therapy With Any Opioid Prescription After Head and Neck Cancer Diagnosis

- Psychiatric variables, benzodiazepine prescription, were not associated with LTOT.



Discussion

- This is the largest cohort study examining the odds of receiving a prescription opioid and developing LTOT in patients with HNC.
- Specifically, older age, male sex, depression, nicotine dependence/smoking, and benzodiazepine prescriptions were all associated with increased odds of receiving an opioid in the12 months after HNC diagnosis.

Discussion

- Anxiety disorder was inversely associated with the odds of opioid prescription.
- Primary predictors for LTOT were younger age, living in the South vs the Midwest, and nicotine dependence.

These findings suggest that factors influencing short-term opioid use differ from those related to sustained opioid use.

Discussion

- The observed differences between risk factors for short term opioid use and LTOT highlight important distinctions in opioid prescribing patterns for acute pain management and transitions to chronic use.
- For example, depression was associated with an increased likelihood of receiving an opioid but was not predictive of LTOT.

Discussion

- Benzodiazepine comedication was associated with increased likelihood of receiving an opioid, it was not predictive of LTOT in this study.
- The unique nature of cancer-related pain and the potential for clinicians to re-assess opioid prescriptions at treatment follow up could explain the lack of a strong association between benzodiazepine use and LTOT in the study.

Discussion

- Anxiety disorder was inversely associated with opioid prescriptions in the year following HNC diagnosis.

→ May reflect that patients with anxiety disorders are more likely to seek non opioid interventions or may face difficulties obtaining opioids due to concerns about potential misuse or dependency.

Discussion

- Nicotine dependence remained a significant predictor for both any opioid use and LTOT in this cohort, consistent with findings from other studies among individuals with HNC.

Discussion

The evidence that current smoking or nicotine dependence is associated with LTOT raises an important concern for opioid prescribing among patients with HNC, of whom more than half smoke at diagnosis and up to 59% continue to smoke.

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The evidence that current smoking or nicotine dependence is associated with LTOT raises an important concern for opioid prescribing among patients with HNC, of whom more than half smoke at diagnosis and up to 59% continue to smoke.

Limitations

1. We did not have detailed measures of HNC, such as tumor stage or type of curative treatment.
2. We were unable to validate whether patients actually used the opioids they were prescribed.
3. This study did not include measures of pain severity and was therefore unable to assess whether opioid prescription was appropriate based on clinical assessment of pain level.

Conclusions

1. In this large cohort analysis of opioid prescription patterns and LTOT in patients with HNC, we found that factors influencing short term opioid use, such as depression and benzodiazepine prescriptions, differ from those associated with LTOT.
2. Key predictors of LTOT included younger age, residing in the South, and nicotine dependence.
3. These results highlight the need for targeted smoking cessation efforts, as nicotine dependence is consistently linked to short- and long-term opioid use.

Thank you !!