

Economic Burden of Comorbid Epilepsy and Anxiety Among Patients in the Medicaid Population

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Objectives

To examine the excess economic burden due to anxiety among patients with newly-treated epilepsy

Background

Epilepsy is a neurological condition that causes seizures and can be treated with medication or surgery.1

A systematic literature review found that among patients with epilepsy, approximately 25% also suffer from a type of anxiety disorder.²

There is a bidirectional relationship between anxiety and epilepsy.

Patients may become anxious after diagnosis; anxiety may develop as a symptom of epilepsy or a side effect of anti-seizure medication (ASM) use.³

Exacerbation of anxiety symptoms as a side effect of ASM use may complicate epilepsy care by impacting quality-of-life and other health-related outcomes.

Patients with anxiety are 7 times more likely to suffer from recurrent and uncontrolled seizures.4

There is lack of direction and coordination among epileptologists and neurologists on how to manage these comorbidities.

Methods

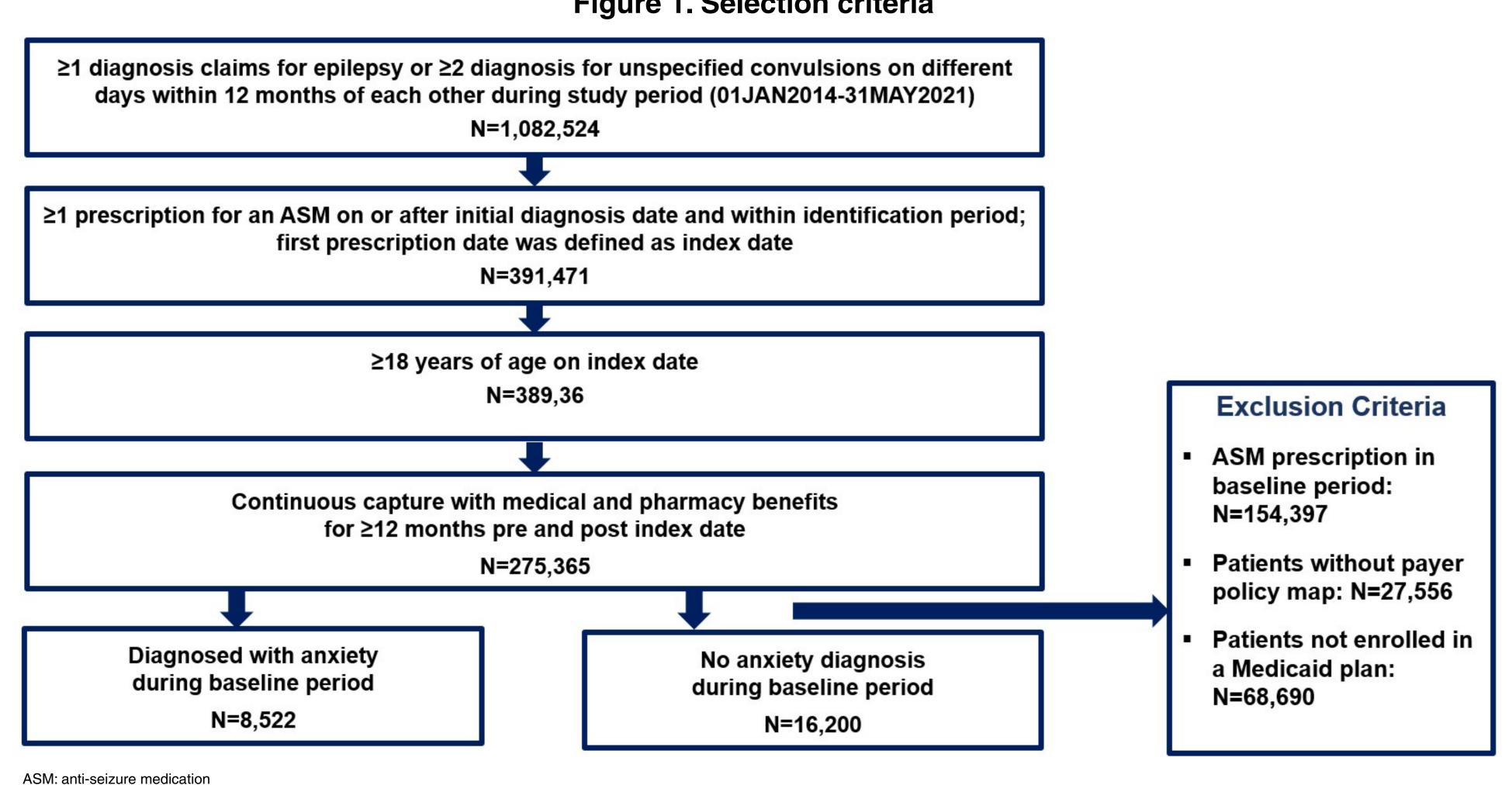
A retrospective observational study was conducted among patients enrolled in a US Medicaid health plan in the STATinMED RWD Insights all-payer medical and pharmacy claims data population, providing insight to approximately 80% of the US healthcare system.

The ASM initiation date was designated as the index event date. Patients were required to be enrolled in a Medicaid health plan as of the index date and were continuously captured for 12 months pre- (baseline period) and 12 months post-index date (follow-up period).

Patients were assigned to cohorts based on presence or absence of anxiety diagnosis in the baseline period.

Demographic and clinical characteristics were assessed for the baseline period, inclusive of the index date; all-cause healthcare resource utilization (HCRU) and costs were calculated for the follow-up period.

Figure 1. Selection criteria



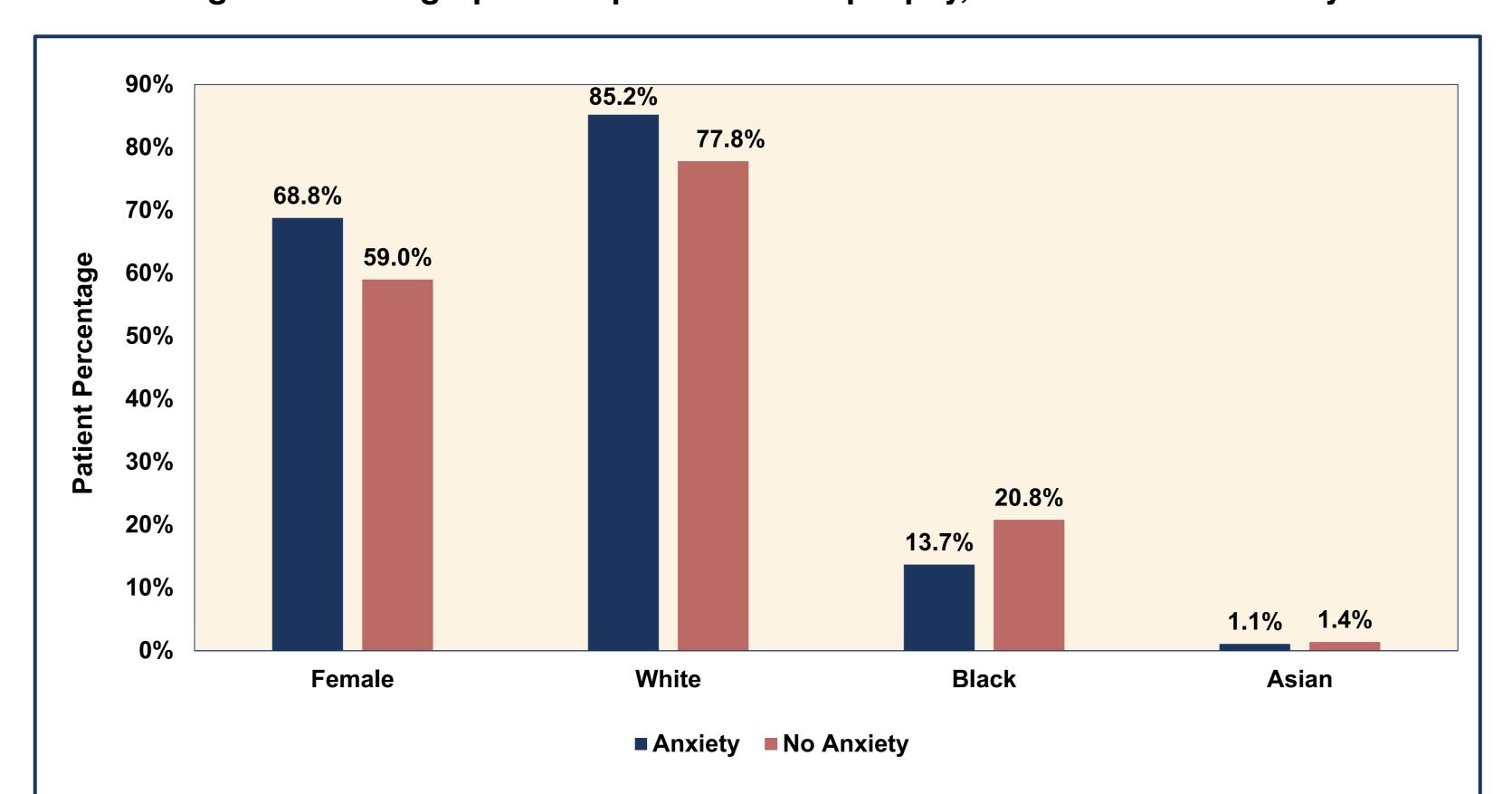
Results

Of the 24,722 patients who met the inclusion criteria, 8,522 were included in the anxiety cohort; 16,200 were included in the non-anxiety cohort (Figure 1).

Patients with anxiety were slightly younger (42.5 vs 43.7 years, p<0.0001) and were more likely to be female (68.8% vs 59.0%, p<0.0001) than patients without anxiety (Figure 2).

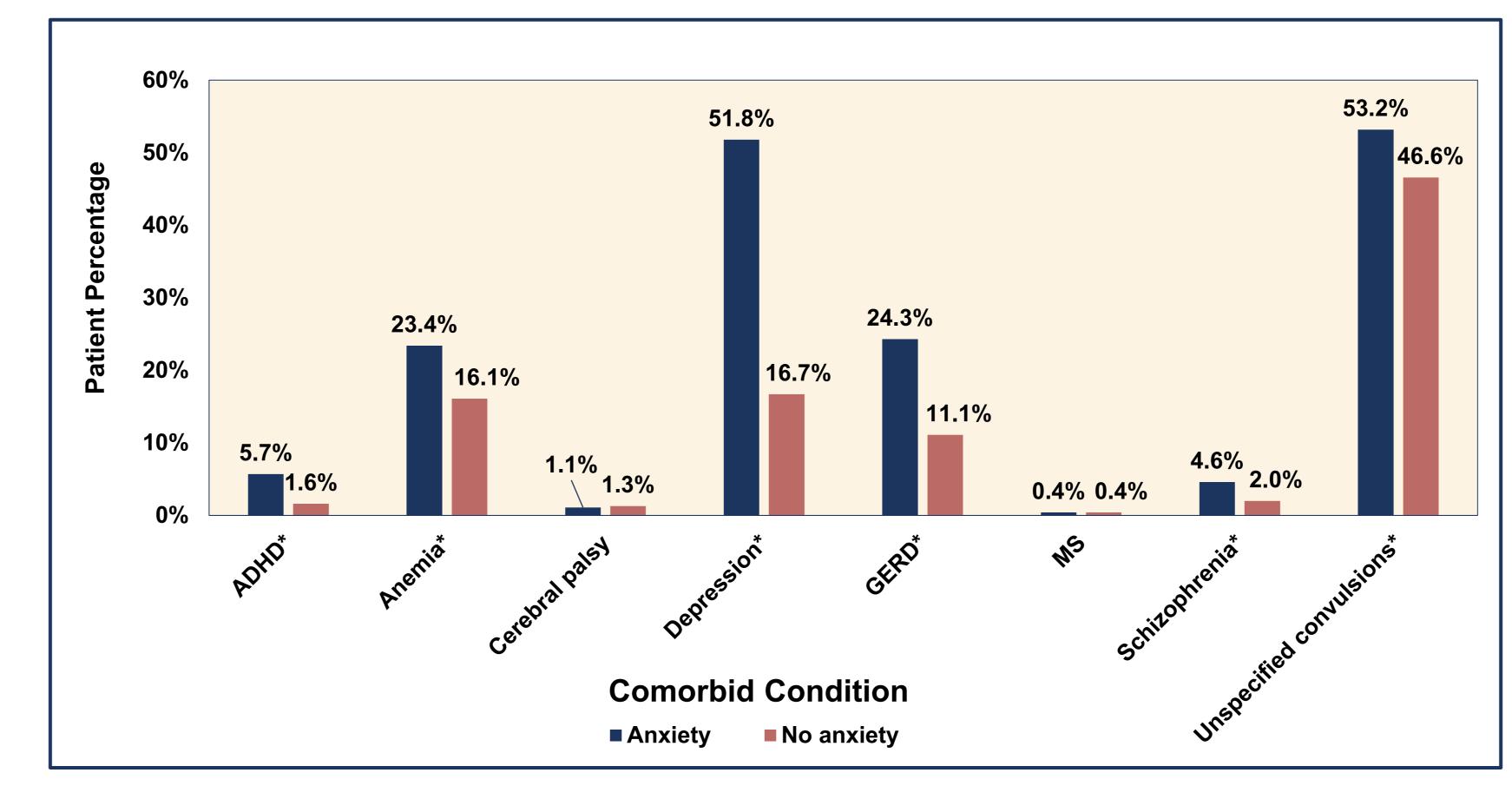
Patients with anxiety also had a significantly higher mean Charlson comorbidity index (CCI) score (2.0 vs 1.7, p<0.05) and higher rates of gastroesophageal reflux disease (24.3% vs 11.1%), anemia (23.4% vs 16.1%), and depression (51.8% vs 16.7%, all p<0.05; Figure 3).

Figure 2. Demographics of patients with epilepsy, with or without anxiety









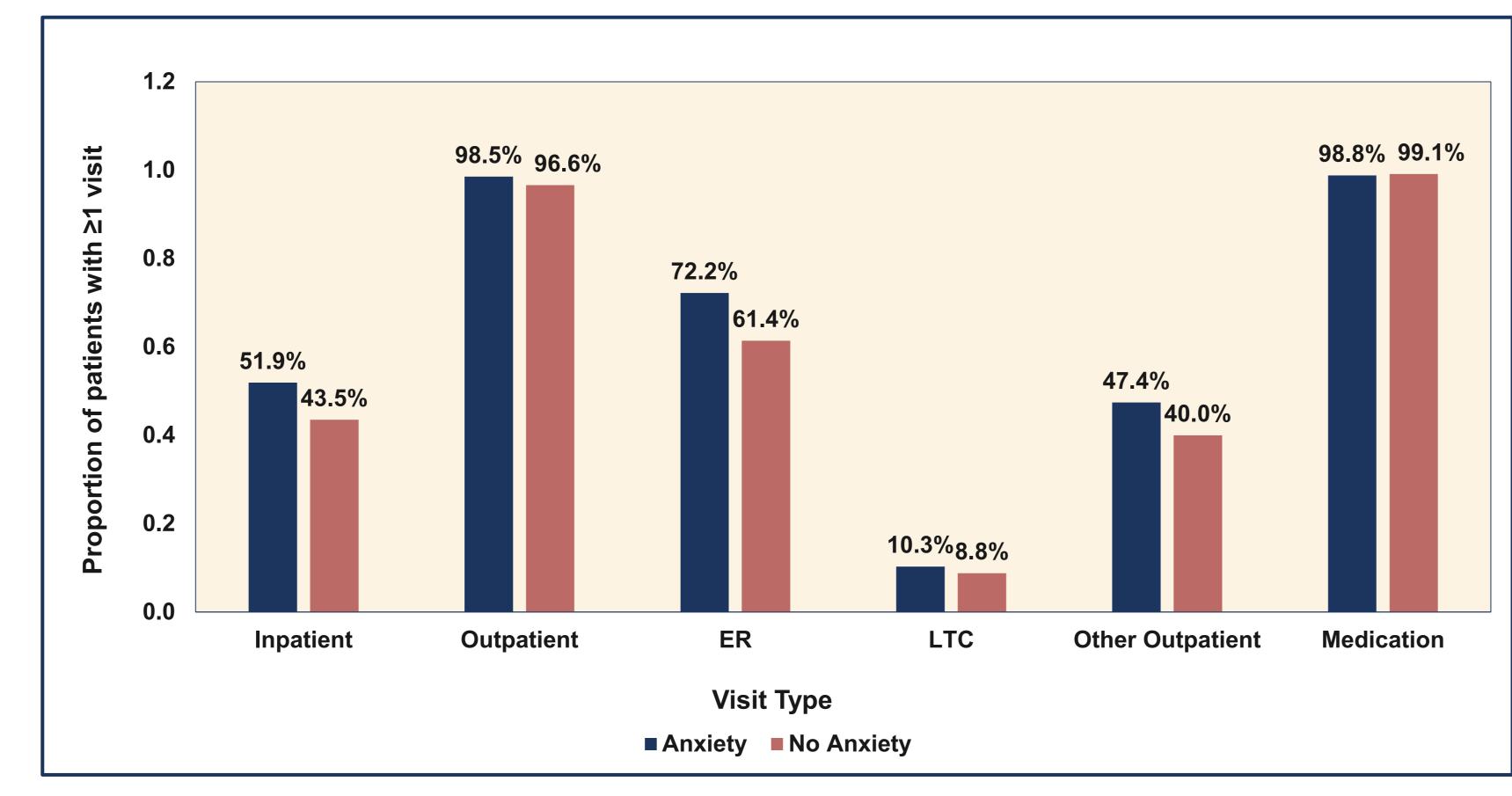
Note: Asterisk indicates a significant difference (p<0.05).

ADHD: attention-deficit/hyperactivity disorder, GERD: gastroesophageal reflux disease, MS: multiple sclerosis

During follow-up, a higher percentage of patients with anxiety had inpatient (51.9% vs 43.5%), ER (72.2% vs 61.4%), and outpatient (not including ER or long-term care) visits (47.5% vs 39.9%, all p<0.05; Figure 4).

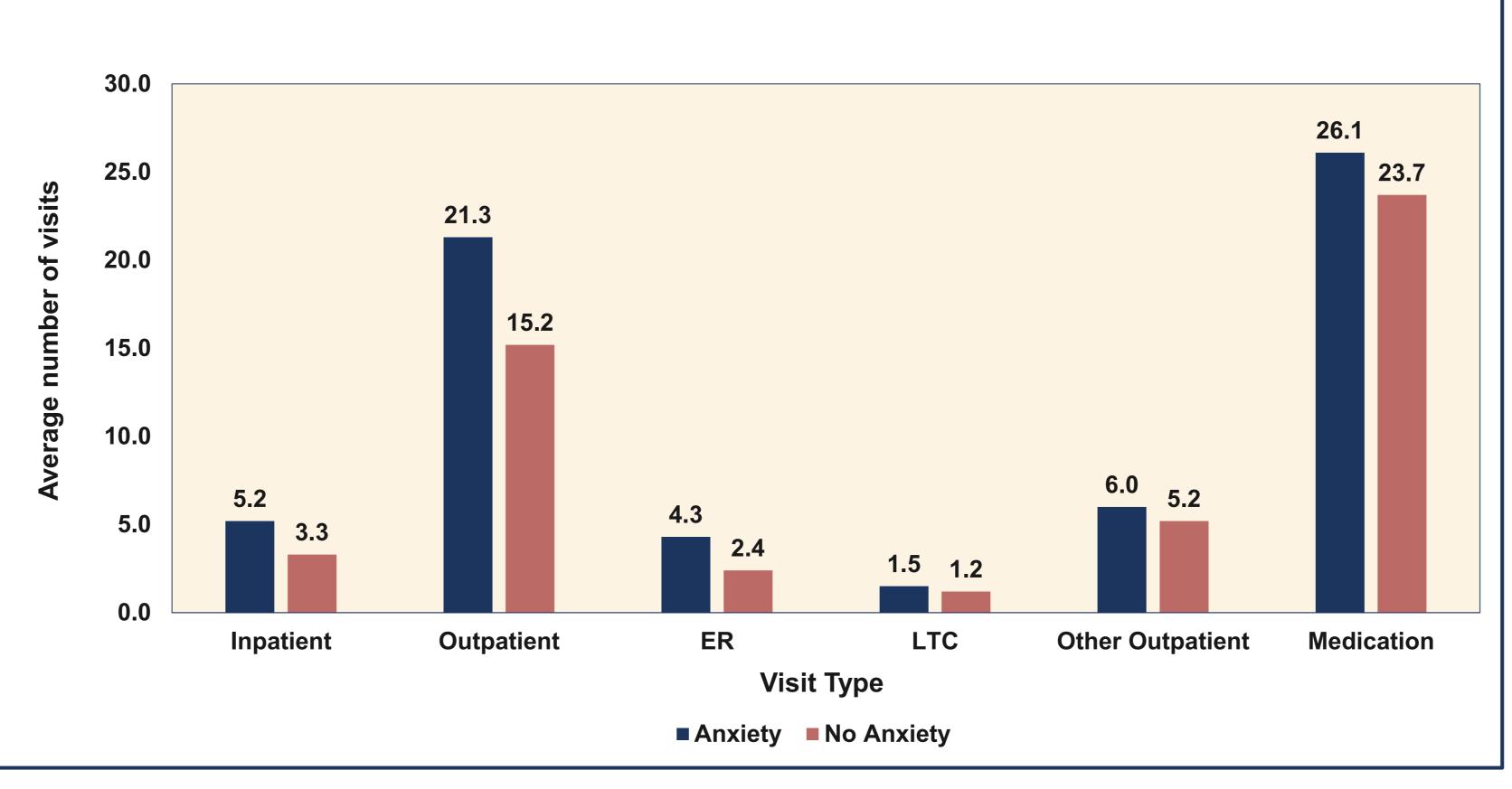
The average number of visits were also higher among patients with anxiety for inpatient (5.2 vs 3.3), outpatient (21.3 vs 15.2), and ER visits (4.3 vs 2.4, all p<0.05; Figure 5).

Figure 4. Proportion of patients with epilepsy by visit type, with or without anxiety



Note: All categories had a significant difference (p<0.05); ER, LTC, and other outpatient visits are a subset of outpatient visits

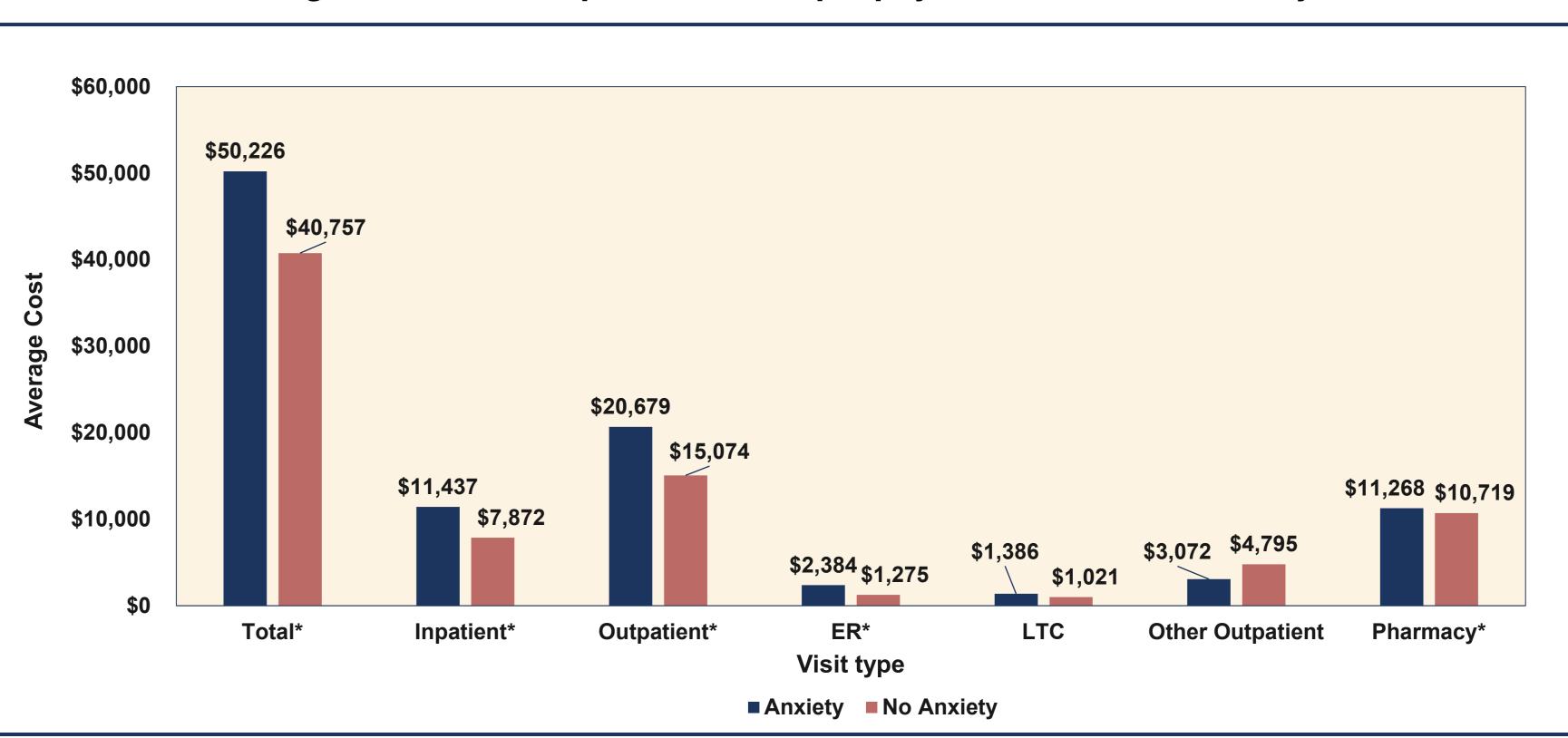
Figure 5. Number of visits for patients with epilepsy, with or without anxiety



Note: All categories had a significant difference (p<0.05); ER, LTC, and other outpatient visits are a subset of outpatient visits

Total costs were significantly higher (\$50,226 vs \$40,757) among patients diagnosed with anxiety, coinciding with higher inpatient (\$11,437 vs \$7,872) and outpatient (\$20,679 vs \$15,074) costs (all p<0.05; Figure 6).

Figure 6. Costs for patients with epilepsy, with or without anxiety



Note: An asterisk indicates a significant difference; ER, LTC, and other outpatient visits are a subset of outpatient visi ER: emergency room; LTC: long term care

Limitations

The epilepsy and anxiety cohorts were determined by diagnosis codes. The presence of a diagnosis code on a medical claim alone does not always indicate that the patient truly has a diagnosis for the disease of interest. Using the code as a rule-out criteria or miscoding is possible.

This study examined Medicaid-insured patients only; the population may not be generalizable to those with other form of insurance or no insurance at all.

Lack of adjusted analysis may have shielded the impact of important confounders on the relationship between anxiety and economic burden.

Conclusions

This real-world study revealed that comorbid anxiety and epilepsy is associated with higher utilization and costs. Special considerations are needed when managing patients with epilepsy and comorbid anxiety.

Further analysis to identify unique patient segments with high HCRU and costs is warranted.

References

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- 4 Zhong R, Chen Q, Zhang X, et al. Depressive and anxiety symptoms are predictors of seizure recurrence in adults with newly diagnosed epilepsy. *Front Psychiatr*. 2021;12:784737.

