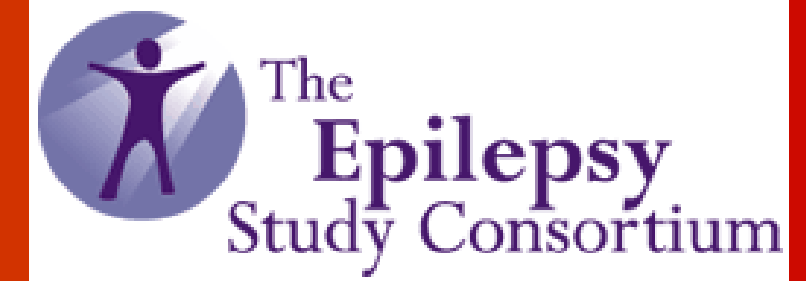


# The Relationship between Pre-Treatment Seizures and Mental Health in People with Newly Diagnosed Focal Epilepsy

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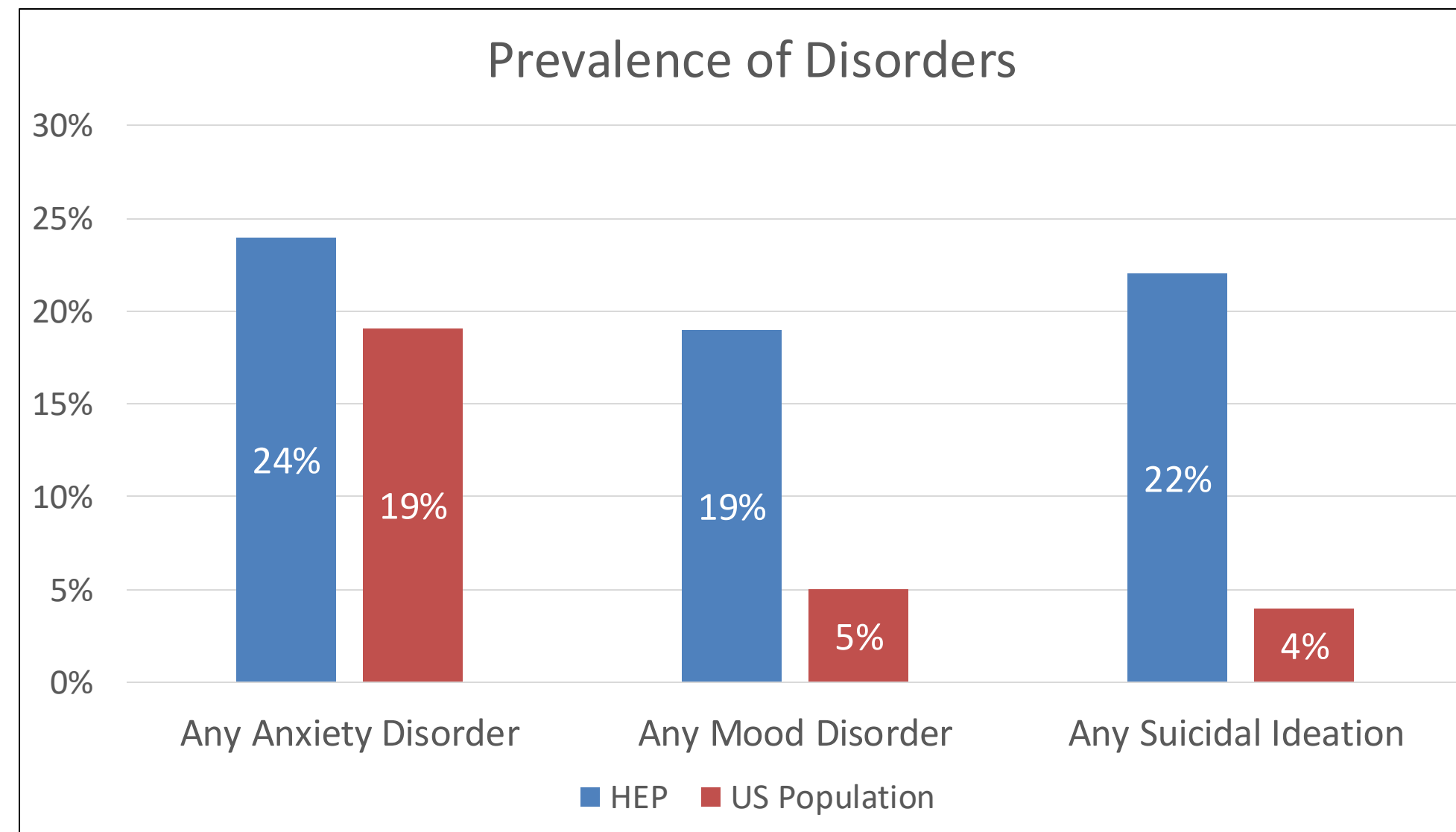


## Rationale

- Previous studies demonstrated the significant mental health studies associated with epilepsy indicating the importance of mental health screening in patients with newly diagnosed focal epilepsy.
- Many patients with focal epilepsy experience delayed diagnosis, sometimes experiencing symptoms for several years prior to treatment.
- The relationship between psychiatric diagnoses and pre-diagnostic factors including pre-treatment seizure burden and demographic metrics is not well described.
- Using retrospective data from The Human Epilepsy Project 1 (HEP1), which enrolled patients with newly treated focal epilepsy, we examined whether age of enrollment, sex, employment status and pretreatment seizure burden at the time of treatment initiation was associated an increased prevalence of anxiety disorders, mood disorders, and suicidal ideation.

## Results

Figure 1. Prevalence of Disorders in HEP data and United States Population



- Out of 347, 85 (24%) met the criteria for any anxiety disorder, 65 (19%) met the criteria for any mood disorder, and 75 (22%) met the criteria for any suicidal ideation
- Any anxiety disorder was the HEP population 1.26 times elevated compared to the US population, mood disorder HEP population was 3.8 times elevated compared to the US population, and suicidal ideation HEP population was 5.5 times elevated compared to the US population.

Table 1. Odds Ratios for Anxiety, Mood Disorders, and Suicidal Ideation by Demographic and Clinical Factors

Clinical Factors	Any Anxiety Disorder	Any Mood Disorder	Any Suicidal Ideation
Totals	85 (24%)	65 (19%)	75 (22%)
OR (95% CI), p value			
Age of Enrollment	1.01 (0.99-1.03, p=0.48)	0.99 (0.97-1.02, p=0.75)	1.01 (0.99-1.03, p=0.49)
Employment			
Employed	2.39 (1.31-4.37, p<0.05)	2.43 (1.27-4.65, p<0.01)	2.30 (1.23-4.29, p<0.01)
Pretreatment Seizure Burden	1.10 (0.95-1.43, p=0.30)	1.07 (0.93-1.41, p=0.46)	1.01 (0.91-1.21, p=0.89)
Sex			
Male	0.89 (0.53-1.49, p=0.65)	1.38 (0.79-2.42, p=0.26)	0.94 (0.55-1.60, p=0.81)

- Employed participants were 2.39 times more likely to meet the criteria for any anxiety disorder (95% CI: 1.31 to 4.37, p < 0.05), 2.43 times more likely to meet the criteria for any mood disorder (95% CI: 1.27 to 4.65, p < 0.01), and 2.30 times more likely to experience suicidal ideation (95% CI: 1.23 to 4.29, p < 0.01)
- Age, sex, and pre-diagnostic seizure burden were not significantly associated with the likelihood of having anxiety disorders, mood disorders, or suicidal ideation at the time of enrollment.

## Methods

- Retrospective analysis of data from HEP1, which enrolled participants within four months of treatment initiation for focal epilepsy between 2012 and 2017 across 34 sites in the USA, Canada, Europe, and Australia.
- 347 participants over the age of 18 completed both Mini International Neuropsychiatric Interviews (MINI) and the Columbia Suicidality Severity Rating Scale (CSSRS) as well as pre-treatment medical histories.
- Pre-diagnostic seizure burden included seizure semiology, frequency, and duration. HEP exclusion criteria included seizures due to traumatic brain injury, tumors, or metabolic disorders.
- Statistical analyses were conducted utilizing JMP Pro. Age of enrollment, sex, employment status, and pretreatment seizure burden were compared to the prevalence of any anxiety disorder, any mood disorder, and suicidal ideation diagnosed through both the MINI and CSSRS using logistic regression.

## Conclusions

- **This study shows employment is a demographic factor that is statistically significant towards the prevalence of anxiety disorders, mood disorders and suicidal ideation.**
- **This finding confirms prior research in which the prevalence of anxiety disorders, mood disorders and suicidal ideation is elevated in patients with newly diagnosed focal epilepsy.**
- **This study found that age, sex, and pretreatment seizure burden did not significantly impact the prevalence of anxiety, mood disorders, or suicidal ideation in newly diagnosed focal epilepsy. However, employed individuals were more likely than unemployed individuals to experience these mental health conditions, possibly due to the additional stress of managing work alongside their diagnosis.**

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