

# Depression in Persons with Epilepsy and Associated Findings from the Epilepsy Impact Project

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## ABSTRACT

**Objective:** To assess disease related burden of depression among persons with epilepsy (PWE), asthma and no chronic ailments (NoProb) in a general population sample.

**Methods:** 3,278 subjects from a general population epidemiologic study were mailed a follow-up survey containing: Mood Disorder Questionnaire (MDQ) and questions about depression symptoms and consulting; QOLIE/SF-36, Adverse Events Profile (AEP), Social Concerns Index (SCI) and questions about seizure severity and impact. Results were post-weighted to match US demography and adjusted to control for demographic differences between groups.

**Results:** Survey response rate was 41% (775 PWE, 395 asthma and 341 NoProb). Ever consulting for depression was reported among 31% of PWE, 22% of asthma and 7% of NoProb groups ( $p < .001$ ). CESD diagnostic threshold for major/moderate depression was reached in 37% of PWE, 28% of asthma and 8% of NoProb ( $p < .001$ ). Among PWE who also reported depression, there was greater disease burden versus those with no depression, on AEP, SCI and overall quality of life, as well as seizure recency, severity, emotional effect and physical effect ( $p < .01$  for all).

**Conclusions:** Depression is more common among PWE versus asthma or NoProb and depression in PWE is associated with greater disease burden, seizure activity and impact.



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## INTRODUCTION

- Depressive symptoms in persons with epilepsy (PWE) are common.
  - A tertiary center survey of 175 outpatients indicated comorbidity of 55% of epilepsy with depression compared with 30% of matched controls. Suicide attempts were 4 times more common in epilepsy.
  - Community Hospital-Based Survey of Temporal lobe epilepsy vs. normal and psychiatric controls revealed depression and anxiety in TLE, however less severe than psychiatric controls.
  - A large community-based survey suggested that 29% persons with epilepsy have a diagnosis of depression.
- The impact of epilepsy has been described in a community survey.
  - A community-based survey in the UK by medical records and postal questionnaire revealed that seizure control correlated with: anxiety, depression, impact of epilepsy, perceived stigma, and marital and employment status. These problems persisted even in those seizure-free.
- There are abundant tertiary center-based studies but there is a need for clarification of rates of depression in the community-based epilepsy population.
- The objective of the current study was to determine the incidence and impact of co-morbid depression in epilepsy in a community-based sample.

## SURVEY METHODOLOGY

- 3,278 US adults surveyed; 41% responded
- Balanced with 2000 US Census data for age, gender, region, household size

### Survey Contents\*:

- Demographics - Age, sex, race
- Medical Diagnosis of epilepsy, asthma, and no chronic disease (NoProb).
- History of consulting a HCP for depression
- Centers for Epidemiological Studies - Depression Scale (CES-D):** A self-report 20-item scale assessing the frequency or duration of depressed mood, feelings of guilt and worthlessness, loss of appetite, and sleep disturbance during the previous week.
- Seizure severity questionnaire (SSQ):** Assesses the warning aura, ictal, and post-ictal phases of the type of seizures most commonly experienced by the patient. Items used Likert scales with 7-point responses with lower scores representing lesser impact.
- Adverse Events Profile (AEP):** Assesses the frequency of 19 disease related problems or side effects (Always a problem to Never a problem.) Scored on 4-point scale, items are summed to create a total score; higher scores indicate greater adverse impact.
- EFA Social Concerns Index (SCI):** 20-items assessing epilepsy/seizure related social concerns or worries. The sum of the items scored on 4-point scale yield total score; higher scores indicate greater social concern.
- Quality of Life in Epilepsy (QOLIE):** Assesses well-being across seven domains, Seizure Worry, Overall QoL, Emotional well-being, Energy/Fatigue, Medication effects, Cognitive functioning, and Social functioning; higher scores indicate better quality of life.

\*Results were postweighted to match US demography and adjusted to control for demographic differences between groups.

## STUDY DEMOGRAPHICS

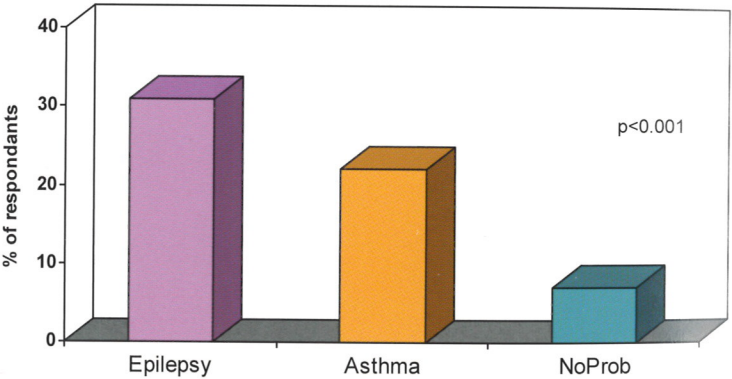
	Epilepsy	Asthma	NoProb
N	775	395	341
Mean age (years)	43	42	44
Percent Female	47	60	48
Percent White	90	86	87
Percent Black	4	7	4

## RESULTS

### Co-morbidity of Depression

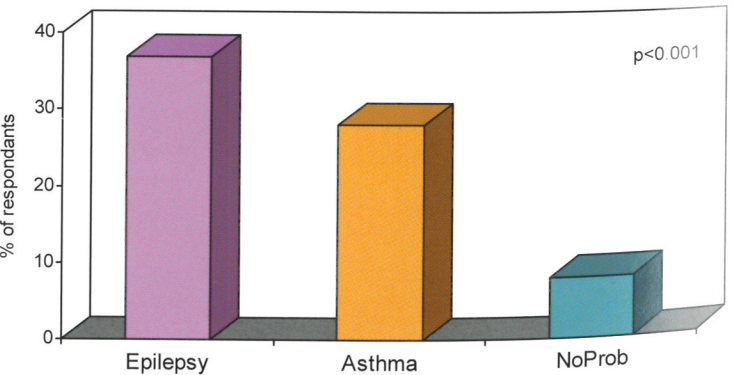
**Figure 1. Consulted a healthcare practitioner for depression**

Significantly more people with epilepsy reported consulting for depression than people with asthma and people with no chronic disease.



**Figure 2. CES-D diagnostic threshold for moderate/major depression**

Significantly more people with epilepsy met the diagnostic threshold for depression than people with asthma and people with no chronic disease.

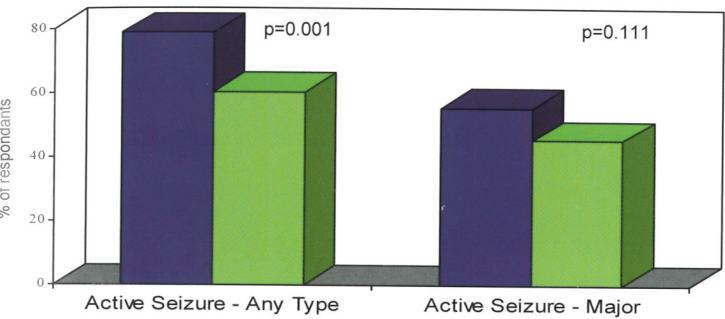


## Epilepsy +/- Depression

	DEMOGRAPHICS	
	Epilepsy w/ Depression	Epilepsy w/o Depression
N	235	540
Mean age (years)	41	43
Percent Female	55	43
Percent White	87	92
Percent Black	8	3

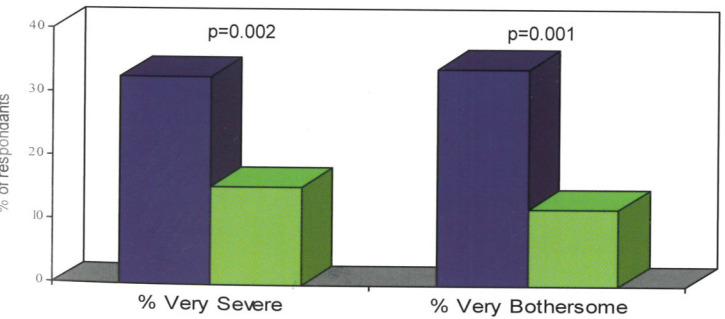
**Figure 3. SSQ - Seizure Recency**

PWE with active seizures (within last 2 years) is higher with co-morbid depression.



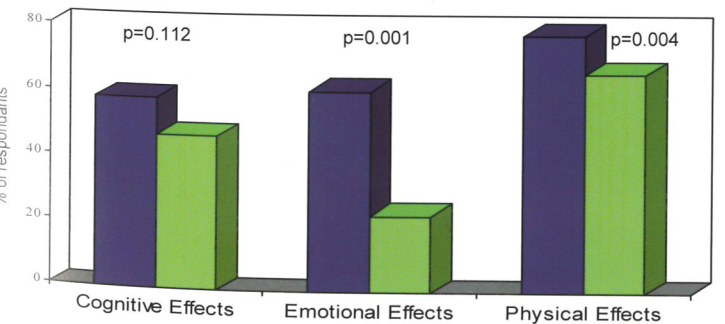
**Figure 4. SSQ - Seizure Severity**

Overall seizure severity and bothersomeness is higher with co-morbid depression.



**Figure 5. SSQ - Seizure Impact**

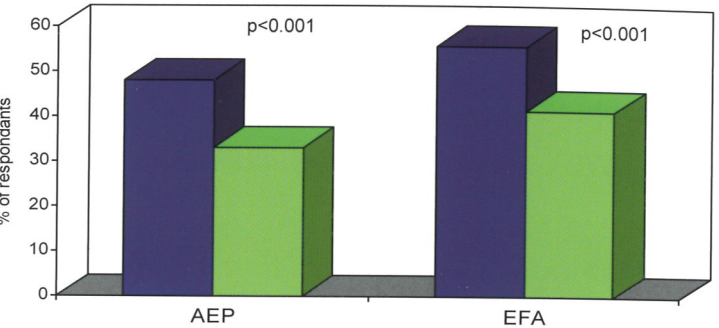
Cognitive, emotional and physical effects are more frequent with co-morbid depression.



## Epilepsy +/- Depression

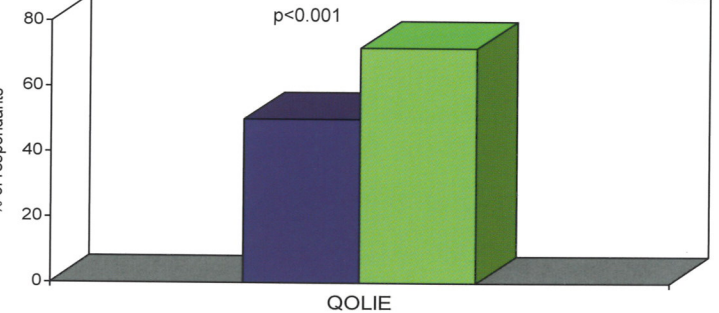
**Figure 6. Adverse Events Profile and EFA Social Concerns Index**

People with epilepsy and depression had a greater adverse event burden and more social concerns compared with people with epilepsy alone.



**Figure 7. Quality of Life in Epilepsy**

People with epilepsy and depression reported lower quality of life.



## CONCLUSIONS

Depression is more common in epilepsy versus asthma or no chronic disease.

Depression in epilepsy is associated with:

- worse seizure severity and impact,
- greater medication adverse event burden, and
- lower quality of life.

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