

## Introduction

The focus of the project is on two questions.

1) Are there disparities in self-management behavior and associated psycho-social factors between patient populations of different socio-economic status (SES)?

2) Does the relationship between psychosocial factors and self-management vary by SES?

Answers are needed to inform administrators, clinicians, and policy makers of the nature of disparities that exist among people living with epilepsy and the potential impact of strategies to reduce or eliminate them.

## Objectives

To determine differences across socio-demographic groups in self-management and the relation between antecedent factors and self-management.

## Methods

### Study Sites

**Kelsey-Seybold Clinic (KS)** is a large multi-specialty medical organization in Houston with 22 clinics and over 300 physicians. Patients are largely from middle-class, employed, populations with private insurance coverage primarily through HMO- or PPO-type plans. Epilepsy patients are referred to the KS Epilepsy Clinic where there are three general neurologists, one epileptologist, and a nurse epilepsy specialist.

**The Ben Taub General Hospital (BT)** is one of two public general hospitals in Houston that serve about 275,000 primarily low-income, uninsured and Medicaid-covered patients a year. The BT Epilepsy Clinic primarily serves Hispanics and black adults. Many patients are also managed by a primary physician in one of 11 community health centers operated by the public hospital system.

## Methods (cont'd)

### Patient Selection

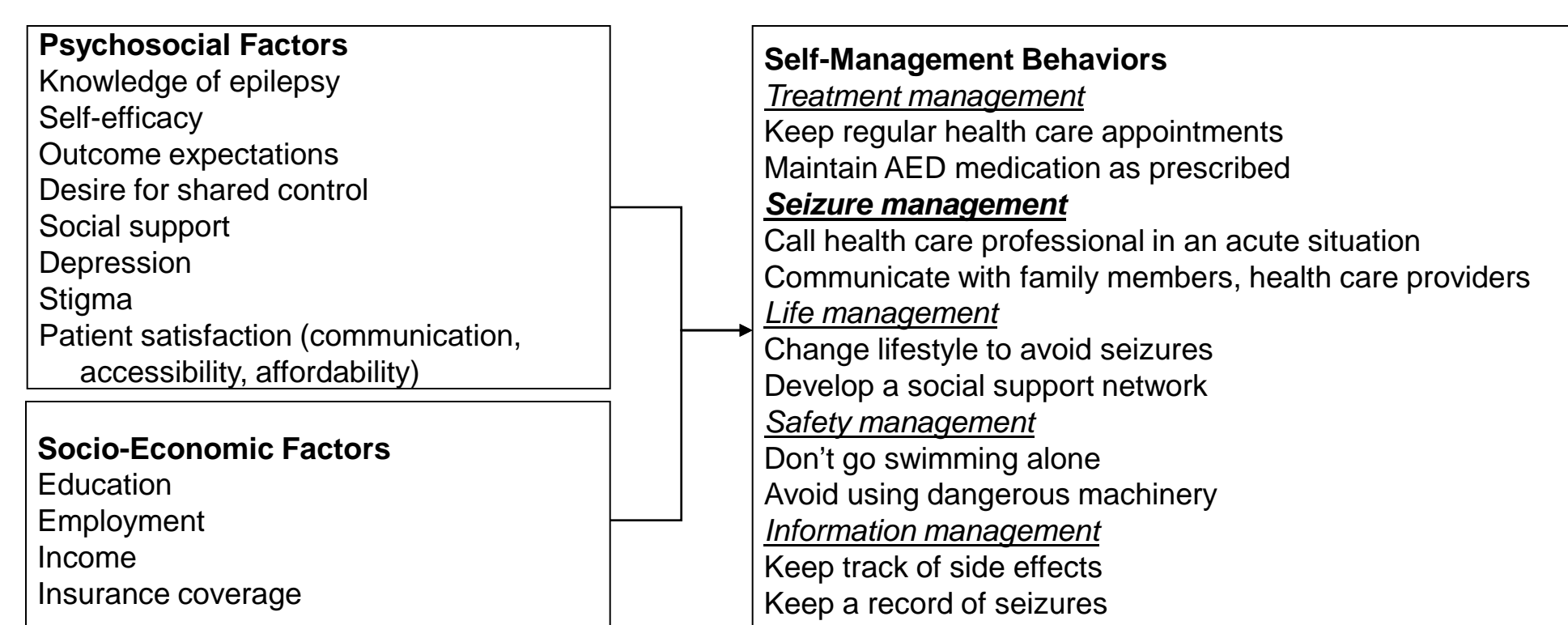
A previously identified cohort of 437 patients at the two clinical sites and had been enrolled in the CDC-funded Epilepsy Care and Outcomes Study were asked to complete the self-management survey (KS: n=297; BT: n=140). The patients were recruited for the original study during their regular visits at each site over a period of one year in 2007-2008. Inclusion criteria were that participants had a diagnosis of epilepsy, were 12 years of age and older, with no progressive cerebral disease or other progressively degenerative neurological disorder. Clinicians identified patients that met the inclusion criteria and offered them or their surrogates (typically caregivers or guardians) the chance to participate in the study.

### Measurement

The self-management questionnaire consisted of a battery of nine standardized scales. It was designed to be self-administered and take 45 minutes to complete within the context of a patient's regular clinic visit. The questionnaire was pilot tested for readability, understandability, and time-on-task with a sample of KS and BT patients prior to administration. The scales included:

- *Epilepsy Self-Management Scale*
- *Epilepsy Knowledge Scale*
- *Epilepsy Self-efficacy Scale Outcome expectations*
- *Shared Control portion of the Multidimensional Desire for Control Scale*
- *Personal Resource Questionnaire 85 Part 2*
- *Center for Epidemiologic Studies Depression Scale*
- *Modified Parent Stigma Scale Patient Satisfaction Questionnaire-III*

Figure 1: Framework for Epilepsy Self-Management & Antecedent Factors



## Results

1. The socioeconomic characteristics of BT patients were significantly different from the KS patients with respect to education, employment, income, and insurance.

	Total Sample	Clinic Site BT	KS	Significant P value
Sample Size	238	71	167	
Demographics	%	%	%	
Age group				NS
18-40 years	50.6	47.9	51.9	
41-64 years	40.7	47.9	37.5	
≥65 years	8.7	4.2	10.6	
Mean Age(SD)	40.9 (15.5)	40.8 (13.1)	40.9 (16.4)	NS
Gender				NS
Male	41.6	40.8	41.9	
Female	58.4	59.2	58.1	
Race/Ethnicity				0.00
Hispanic	23.1	39.4	16.2	
White	47.5	12.7	62.3	
Black	26.9	45.1	19.2	
Others	2.5	2.8	2.4	
Marital Status				0.00
Married	48.1	28.6	56.3	
Not Married	16.5	30.0	10.8	
Never Married	35.4	41.4	32.9	
Socio-Economic Status				
Education				0.00
<High School Deg	15.6	28.6	10.2	
High School Deg	20.7	32.9	15.6	
College or Higher	63.7	38.6	74.3	
Employment				0.00
Employed FT	38.5	11.6	49.7	
Employed Part-T	10.3	15.9	7.9	
Both FT & PT	2.6	2.9	2.4	
Unemployed	48.7	69.6	40.0	
Income				0.00
<100% FPL	28.8	61.4	14.5	
100-200% FPL	18.3	30.0	13.2	
>200 FPL	52.8	8.6	72.3	
Insurance				0.00
Medicaid	7.3	17.6	3.0	
Medicare	6.8	8.8	6.0	
Private	55.1	0	77.7	
Combined	9.0	2.9	11.4	
None	21.8	70.6	1.8	
Seizures				
One or More Seizures Last 3 Months	50.1	70.0	37.4	0.00

3. Self-efficacy and social support had the strongest correlation with self-management among the psychosocial factors for all patients and for patients at each site.

Self-Management Sub-Scales	Correlation Coef. (Sig P value)	BT (Sig P value)	KS (Sig P value)
Med Management	.55 (.00)	.58 (.00)	.58 (.00)
Info Management	.75 (.00)	.70 (.00)	.76 (.00)
Safety Management	.61 (.00)	.66 (.00)	.59 (.00)
Seizure Management	.66 (.00)	.62 (.00)	.70 (.00)
Lifestyle Management	.68 (.00)	.76 (.00)	.63 (.00)
Psychosocial Factors			
Knowledge	.15 (.02)	.24 (.04)	.05
Self Efficacy	.27 (.00)	.43 (.00)	.31 (.00)
Outcome Expectation	.11	.29 (.01)	.07
Control	-.02	-.03	.02
Social Support	.19 (.00)	.30 (.01)	.20 (.00)
Depression	-.06	-.37 (.00)	.01
Stigma	.077	-.06	.09
Patient Satisfaction	-.04	-.21	-.09

2. The per item average score for overall self-management, information management, and safety management was higher for BT patients compared to KS patients (all p < 0.05), and similar on medication management, seizure management, and lifestyle management.

	Total	No of Items	Maximum Score	BT	KS	Diff in Per Item Average BT-KS	Significant P value
	Per Item Average (SD)			Per Item Average (SD)	Per Item Average (SD)		
Total N	241			71	167		
Self-Management							
Overall	3.65(0.59)	38	5.00*	3.75 (.42)	3.63 (0.41)	.12	.03
Medication	4.4 (1.39)	10	5.00*	4.31 (.56)	4.44 (.49)	-.10	
Info	2.25 (.79)	8	5.00*	2.50 (.78)	2.22 (.81)	.28	.02
Safety	3.92 (.59)	8	5.00*	4.18 (.48)	3.81 (.60)	.37	.00
Seizure	4.24 (.58)	6	5.00*	4.20 (.58)	4.25 (.57)	-.05	
Lifestyle	3.32 (.73)	6	5.00*	3.46 (.83)	3.27 (.69)	.19	
Psychosocial Determinants							
Knowledge - % Correct	52.29	19	100.0	64.6	47.1	17.5	.00
Self Efficacy	8.51 (1.50)	25	10.0*	7.69 (2.22)	8.85 (.86)	-1.16	.00
Outcome Expectations	3.83 (.70)	20	5.00*	3.59 (.75)	3.94 (.66)	-.35	.00
Desire for Shared Control	4.17 (1.03)	4	5.00*	3.82 (.98)	4.32 (1.02)	-.50	.00
Social Support	5.40 (.98)	25	7.00*	4.99 (1.00)	5.57 (.93)	-.58	.00
Depression - % Moderate/High Symptoms	49.58	20	100.0	70.41	40.72	29.69	.00
Stigma	3.15 (1.57)	10	7.00*	3.75 (1.53)	2.90 (1.52)	.85	.00
Patient Satisfaction							
Communication	1.37 (.42)	7	3.00*	1.66 (.35)	1.25 (.38)	.41	.00
Affordability	2.12 (.37)	11	5.00*	2.24 (.46)	2.11 (.33)	.13	.00
Interpersonal	3.80 (.93)	7	5.00*	4.34 (.82)	3.57 (.87)	.77	.00

4. Epilepsy self-management was not strongly associated with SES in this comparison of two socio-economically diverse patient populations.

	Model 1		Model 2		Model 3	
	Beta Coefficient	P value	Beta Coefficient	P value	Beta Coefficient	P value
Self-Efficacy	0.21	.01	0.28	.00	0.35	.03
Social Support	0.19	.01	0.20	.01	0.17	.07
Gender	0.16	.02	0.18	.01	0.17	.01
Age	0.12	.13	0.10	.22	0.10	.21
Race/ethnicity	0.13	.07	0.03	.67	0.03	.68
Marital status	0.08	.32	0.05	.50	0.06	.46
OneorMoreSeizLast 3 Months	0.17	.13	0.12	.11	0.12	.11
Low-SES			0.26	.00	0.37	.47
Self-Efficacy/SES					-0.27	.58
Social Support/SES					0.17	.65
Adjusted R <sup>2</sup>	0.13		0.18		0.17	

## Discussion

The findings of significant differences between low and high SES patients on all psychosocial variables is supportive of the contention that these populations face somewhat differing challenges for managing epilepsy. However, the differences were not large and the pattern was relatively similar in terms of the relative floor/ceiling levels of the scores for both groups.

The significant association between self-efficacy and self-management found in this study supports this theoretical association as well as previous empirical work. Significant associations were also found in the current sample for social support. Social support is an important contributor to efficacy beliefs through methods of verbal persuasion and reinforcement and is related to self-management in terms of behavioral cuing. The relationship between social support from family and friends and adherence to medication regimens has been previously reported.

The finding that self-efficacy and social support were strongly associated with self-management even after adjusting for SES differences in the patients suggests that strategies to improve self-management may have general applicability across diverse populations. I

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