Identifying and Understanding Factors Associated with Post-Stroke Anxiety

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Presenter Disclosure Information

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FINANCIAL DISCLOSURE: None

Prevailing Targets for Post-Stroke Recovery

Targets for Recovery

- Physical disabilities
- Sensory disturbances
- Communication impairments
- Cognitive dysfunction
- **Psychosocial stressors**
- **Informal Caregivers**

Targets for Secondary Prevention

- Managing blood pressure
- Controlling cholesterol levels
- Reducing blood sugar levels
- Getting active
- Eating a healthy diet
- Losing weight
- Smoking cessation
- **Managing psychosocial stressors**
  - **Post-stroke anxiety (PSA)**
  - **Post-stroke depression (PSD)**
  - **Post-traumatic stress disorder (PTSD)**
  - **Social isolation**

http://www.heart.org/en/healthy-living/healthy-lifestyle/my-life-check--lifes-simple-7

National Institutes of Health

NIH National Institute of Mental Health

"No Health Without Mental Health"

- NIMH Former Director Thomas Insel

NIH National Institute of Neurological Disorders and Stroke

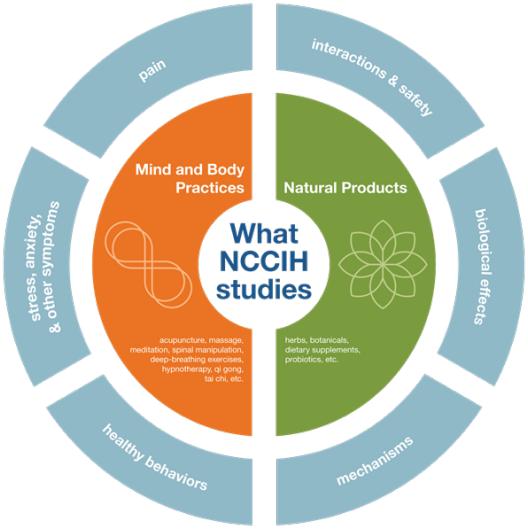
StrokeNet- focused on conducting trials in stroke prevention, treatment & **recovery**

NIH National Institute of Nursing Research

Building the Scientific Foundation for Clinical Practice

Improving the health of individuals & families by conducting research that integrates the **behavioral** & biological sciences & that develops the scientific basis for clinical practice

NIH National Center for Complementary and Integrative Health



Post-Stroke Anxiety (PSA)

- > 25% of stroke survivors develop PSA
- PSA causes further harm
  - ↑ stroke recurrence
  - ↑ death
  - ↑ disability
  - ↓ quality of life
  - cognitive impairment
- PSA treatment strategies have focused on anxiolytic medications

Am J Geriatr Psychiatry. 2016 Feb;24(2):154-60. doi: 10.1016/j.jagp.2015.06.003. Epub 2015 Jun 26.

Int J Stroke. 2013 Oct;8(7):545-59. doi: 10.1111/j.1747-4949.2012.00906.x. Epub 2012 Sep 27.

Predictors of Post-Stroke Anxiety

Table 3. Unadjusted and Adjusted ORs of Our Predictors for the Outcome of Any Anxiety Disorder at 3 Months Poststroke/TIA (n=175)

		Multivariable Logistic Regression			
	Unadjusted OR (95% CI)	Adjusted OR (95% CI)			
		Model 1	Model 2	Model 3	Model 4
Age, y (per decade increase)	0.60 (0.44–0.83)	0.67 (0.47–0.94)	0.65 (0.46–0.92)	0.65 (0.46–0.92)	0.64 (0.45–0.91)
Past diagnosis of anxiety or depression	5.71 (2.65–12.32)	4.85 (2.21–10.66)	4.51 (2.01–10.12)	4.66 (2.10–10.31)	4.38 (1.94–9.89)
Being a woman	1.47 (0.71–3.04)		1.37 (0.61–6.14)		1.33 (0.58–3.07)
Living alone prestroke/TIA	1.33 (0.64–2.80)			1.31 (0.89–3.08)	1.29 (0.56–2.99)
Likelihood ratio test comparing models with model 1			*P*=0.4526	*P*=0.4873	*P*=0.6294

CI indicates confidence interval; OR, odds ratio; and TIA, transient ischemic attack.

Ho-Yan et al. 2018 https://www.ahajournals.org/doi/full/10.1161/STROKEAHA.117.020078

Purpose

The purpose of our study was to:

1) determine the prevalence of post-stroke anxiety

2) understand factors associated with post-stroke anxiety in a cohort of ischemic stroke survivors

Study Methods

- Design: a retrospective review of electronic health records from **August 1, 2017 to May 30, 2018**
- Sample: **194 ischemic stroke survivors**
- Criteria: ischemic stroke survivors screened for PSA using the **Generalized Anxiety Disorder 7-item** (GAD-7) scale 2 to 8 weeks post-hospitalization

Statistical Methods

- Univariable analyses were used to determine significance ($p<0.05$)
- Comparisons between groups were performed using the independent samples t-test for continuous variables and the chi-square test for categorical variables

Stoke Transitions Education and Prevention Clinic: STEP

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A Part of UTHealth

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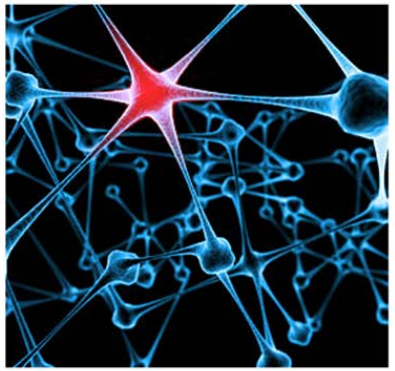
New clinics devoted to post-stroke care, education

RELATED HEALTHCARE PROVIDERS

Anjail Z. Sharrief, MD, MPH

Sean I. Savitz, MD

Two new clinics devoted to treatment and education for patients who have suffered a stroke or transient ischemic attack (TIA) have opened at UT Physicians.



The Stroke, Transitions, Education and Prevention (STEP) Clinic and the Transient Ischemic Attack (TIA) Clinic are located in the UT Professional Building, 6410 Fannin.

The STEP clinic will take an integrated approach for patients who have suffered a stroke or TIA, including managing common risk factors and assessing for complications such as depression, fatigue, and cognitive impairment. The clinic team will counsel patients about their personal risk factors and develop a treatment plan that includes lifestyle changes.

Generalized Anxiety Disorder 7-item

Generalized Anxiety Disorder 7-item (GAD-7) scale

Over the last 2 weeks, how often have you been bothered by the following problems?	Not at all sure	Several days	Over half the days	Nearly every day
1. Feeling nervous, anxious, or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it's hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3
Add the score for each column	+	+	+	
Total Score *(add your column scores)* =				

If you checked off any problems, how difficult have these made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all _____
Somewhat difficult _____
Very difficult _____
Extremely difficult _____

Source: Spitzer RL, Kroenke K, Williams JBW, Lowe B. A brief measure for assessing generalized anxiety disorder. *Arch Inern Med.* 2006;166:1092-1097.

Psychiatric Comorbidity and Sleep Disturbances

- Patient Health Questionnaire (PHQ-9)
- Epworth Sleepiness Scale (ESS)

Results: Prevalence of Post-Stroke Anxiety

- 25% of the 194 stroke survivors had a GAD-7 score ≥ 10, which indicates the presence of moderate to severe anxiety

- 31.76% of females had a GAD-7 score ≥ 10 compared to 19.63% males ($p = .0537$)

Results

	All	GAD-7 ≥ 10	GAD-7< 10	Univariable Analysis		
				P value	OR	95% CI
N	194	48	144			
Age at Stroke, *Mean* (year) ± SD	60.75 ± 14.92	58.88 ± 14.60	60.96 ± 14.84	0.40		
Male sex	107 (55%)	21 (20%)	86 (80%)	0.05	0.52	0.27-1.02
Race						
Non-Hispanic Black	52 (27%)	16 (33%)	36 (25%)	0.34		
Non-Hispanic White	76 (40%)	14 (29%)	62 (43%)			
Hispanic	32 (17%)	8 (17%)	24 (17%)			
Other	32 (17%)	10 (21%)	22 (15%)			
Marital Status						
Single	32 (17%)	13 (28%)	19 (14%)	**0.0006**		
Married	83 (44%)	11 (23%)	71 (51%)			
Separated	9 (5%)	1 (2%)	7 (5%)			
Divorced	27 (14%)	13 (28%)	14 (10%)			
Widowed	24 (13%)	8 (17%)	16 (11%)			
Other	14 (7%)	1 (2%)	13 (9%)			

1. Values are in n (percentage). 2. Sums may not equal 100% due to missing data.

Results

	All	GAD-7 ≥ 10	GAD-7< 10	Univariable Analysis		
				P value	OR	95% CI
Ischemic Stroke Type						
Transient Ischemic Attack	21 (11%)	8 (17%)	12 (8%)	0.09		
Ischemic	167 (86%)	37 (77%)	129 (90%)			
Ischemic with Hemorrhagic Transformation	6 (3%)	3 (6%)	3 (2%)			
NIHSS,[2] *Mean* ± SD						
	6.83 ± 6.81	6.71 ± 6.26	6.86 ± 7.02	0.90		
Modified Rankin Scale[3]						
0-1	69 (68%)	20 (87%)	49 (63%)	0.029	0.25	0.07-0.93
≥2	32 (32%)	3 (13%)	29 (37%)			
GAD-7 Score, *Mean* ± SD						
	5.76 ± 5.74	14.19 ± 3.49	2.95 ± 2.87	**< .0001**		
PHQ-9 Score, *Mean* ± SD						
	7.47 ± 6.40	13.15 ± 5.81	5.48 ± 5.38	**< .0001**		
ESS Score, *Mean* ± SD						
	8.39 ± 5.45	11.34 ± 5.49	7.44 ± 5.13	**< .0001**		
New or Adjusted Anti-depressant Medication[4]						
	33 (17%)	16 (35%)	15 (11%)	**0.0001**	0.22	0.10-0.50

1. Values are in n (percentage). Sums may not equal 100% due to missing data. 2. NIHSS on hospital admission. 3. Modified Rankin Scale at Neurology Clinic visit. 4. Neurology Clinic new or adjusted change in anti-depressant medication from hospital discharge anti-depressant status.

Conclusions

- PSA is common after ischemic stroke and may occur more frequently in women and those who are single, divorced, or widowed

- Post-stroke trials of psychological interventions should consider PSA and its relationship to excessive daytime sleepiness and depression as well as treatment approaches for concurrent co-morbid conditions

Future Directions

- Ongoing data abstraction of electronic health records to include additional records (n=322), hemorrhagic stroke cases & additional inpatient clinical variables

- Breath-based meditation intervention

Acknowledgements

- Anjail Sharrief, MD, MPH
- Sean Savitz, MD
- Tahani Casameni Montiel, BBA
- Stanley G. Cron, MSPH
- Munachi N. Okpala, NP
- Evelyn Hinojosa
- Andrea Ancer Leal
- Nicole Baltazar