



Is There an Association Between PTSD & Dementia? From Systematic Review to Retrospective Study

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Background

The relationship of PTSD and psychological trauma to cognitive impairment has received little attention. Previous data suggest hypothalamic-pituitary-adrenal axis dysfunction and abnormal CSF concentrations of serotonin, norepinephrine, substance P and interleukins in individuals with PTSD. Some investigators have found reduced hippocampal volume.

As the veteran population ages, the prevalence of dementia will increase. It is important to know what effects trauma and PTSD have on development of dementia in these patients. As a first step, to explore this relationship, we conducted a systematic review.

Systematic Review

Diseases	Positive Studies	Negative Studies
Arthritis	3	1
Asthma	2	1
Cervical dysplasia	1	0
DM	2	2
Eczema	1	0
Endometriosis	1	0
Epilepsy	1	0
Glomerulonephritis	1	0
HD/CHD	3	2
Heart Attack	1	1
HTN	2	1
Psoriasis	1	0
Stroke	1	1
Thyroid	1	3
Ulcer	2	0
Dementia	0	0

Cognitive Domains	Sample	Positive	Negative
Attentional Impairment	Veterans	5	0
	Abused Individuals	1	1
	Refugees/War Victims	2	0
	Undergraduates	0	1
	Others	1	0
Total		9	2
Learning Impairment	Veterans	4	2
	Abused Individuals	1	1
	Refugees/War Victims	1	1
	Undergraduates	0	0
Others	0	1	
Total		6	5
Memory Impairment	Veterans	2	5
	Abused Individuals	2	2
	Refugees/War Victims	0	3
	Undergraduates	0	0
	Others	1	1
Total		5	11
Executive Impairment	Veterans	3	3
	Abused Individuals	1	1
	Refugees/War Victims	1	1
	Undergraduates	1	1
	Others	1	1
Total		7	7
Visuospatial Impairment	Veterans	0	6
	Abused Individuals	0	1
	Refugees/War Victims	1	0
	Undergraduates	0	0
	Others	0	0
Total		1	7

This work was supported by the South Central MIRECC

The next step in this research agenda is to undertake a retrospective study

- Retrospective, prospective case-control study using the VA administrative databases of the South Central United States (VISN 16)
- A **cohort group** of subjects 65 years or older from October 1, 1997, through September 30, 1999, who
 - Have at least 2 VA visits
 - Have PTSD diagnosis, **or**
 - Have received Purple Heart (a proxy for trauma) with or without PTSD
- A 1-to-1 **control group** matched by age, gender and race, without PTSD or Purple Heart
- Controlling variables
 - HTN DM
 - CAD CVA
 - Alcohol abuse / dependence
 - Drug abuse / dependence

Hypothesis

- Chronic PTSD is independently associated with dementia, even after controlling for trauma and other confounding factors.

Impact

- Aggressive screening and treatment of PTSD
- Early screening for cognitive impairment

Conclusion

- PTSD is associated with an increase prevalence of dementia as per our initial analysis**

Reference

- Qureshi SU, Pyne JM, Magruder KM, Schulz PE, Kunik ME: The Link Between Post-traumatic Stress Disorder and Physical Comorbidities: A Systematic Review. Psychiatric Quarterly, pg 87-97, June 2009.

	PTSD Group N=3317	Purple Heart Group N=1384	Control N=5080	P value
Age (as in 1997)	72.70 (4.82)	72.45 (4.56)	72.60 (4.78)	.2101
Sex (male)	98.93%	99.93%	99.27%	.0025
Race (white)	78.46%	74.71%	62.38%	<.0001
Alcohol abuse & dependence and/or drug abuse & dependence	15.64%	10.02%	13.42%	<.0001

	PTSD Group	Purple Heart Group	Control	P value
Dementia	11.81%	6.79%	5.75%	<.0001
HTN	66.06	70.01	56.73	<.0001
DM	28.92	28.18	24.41	<.0001
Angina	8.40	7.15	4.82	<.0001
CAD	6.11	5.35	4.51	.0133
CHF	17.21	16.04	14.11	.0008
CVA	13.53	11.05	10.51	.0003
TIA	3.53	3.83	2.44	.0063
OA	41.15	42.12	27.01	<.0001
RA	1.87	1.81	1.54	.6700
Gout / Arthropathies	4.75	6.14	4.96	.2263
GI Ulcers	5.58	3.90	3.52	<.0001
Depression	40.05	15.17	10.53	<.0001
Bipolar	3.62	0.65	0.69	<.0001
Alcohol abuse & dependence	3.06	1.01	1.83	<.0001
Drug dependence	.80	.29	.22	.0007
Drug abuse	12.52	8.31	9.41	<.0001