

ONLINE SUPPLEMENT

Psychological associations of post-stroke anxiety: A systematic review and meta-analysis

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STROBE Criteria			Recommendation fulfilled?																									
	Item number		Broomfield 2014	D'Aniello	Galligan	Goldfinger	Skolarus	White	Broomfield 2013	Leppavuori	Ayerbe	Fure	Kroeders	Giaquinto	Merriman	Lassalle-Lagadec	Ghika-Schmid	Sagen	Morrison	Field	Castellanos-Pinedo	Wang	Lincoln	Barker-Collo	Tang	Kim		
TITLE and ABSTRACT	1	a)	✓	✓	✓	X	X	✓	X	X	X	X	X	X	X	X	X	X	X	✓	X	X	✓	X	X	✓		
		b)	✓	~	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	~	~	✓	~	~	~	~	~	✓	~	✓	
INTRODUCTION																												
Background/rationale	2		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	~	✓	
Objectives	3		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	~	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
METHODS																												
Study design	4		✓	✓	✓	~	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	~	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Setting	5		✓	~	~	~	~	✓	✓	X	✓	✓	✓	✓	~	✓	X	✓	~	~	✓	✓	~	~	✓	✓		
Participants	6	a)	✓	✓	✓	✓	X	✓	✓	~	~	✓	✓	✓	✓	~	X	✓	✓	✓	~	✓	✓	✓	✓	✓	~	
		b)	N/A	N/A	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Variables	7		~	X	~	~	~	~	~	~	~	~	~	~	~	X	X	~	✓	X	X	~	X	X	X	X	~	
Data sources/measurement	8		✓	✓	✓	✓	✓	✓	✓	~	✓	✓	~	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Bias	9		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	~	X	X	X	X	~	X	
Study size	10		X	X	✓	X	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Quantitative variables	11		✓	~	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	~	~	✓	✓	✓	✓	✓		
Statistical methods	12	a)	~	~	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	~	~	~	✓	✓	✓	X	✓	✓	~	~	~	~	
		b)	✓	~	X	X	X	✓	✓	✓	✓	N/A	N/A	N/A	N/A	~	X	N/A	✓	X	~	✓	✓	✓	X	✓	X	
		c)	✓	X	X	X	X	X	X	X	X	✓	X	X	X	X	X	X	✓	X	X	X	X	X	X	X	X	X
		d)	X	X	✓	X	X	✓	X	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		e)	X	X	X	X	✓	X	X	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
RESULTS																												
Participants	13	a)	✓	X	✓	X	X	✓	✓	✓	✓	✓	✓	X	✓	X	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		b)	✓	X	✓	X	X	✓	✓	✓	X	✓	✓	X	✓	X	X	✓	✓	✓	✓	X	✓	✓	X	✓	✓	
		c)	✓	X	X	X	X	✓	X	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	✓	X
Descriptive data	14	a)	✓	✓	✓	✓	✓	✓	X	✓	X	✓	✓	✓	✓	✓	X	✓	X	✓	✓	✓	✓	✓	X	✓	✓	
		b)	✓	X	X	X	✓	X	X	X	X	X	X	X	X	X	X	X	~	✓	✓	X	✓	✓	X	X	X	
		c)	N/A	N/A	N/A	N/A	N/A	X	N/A	N/A	✓	N/A	N/A	N/A	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓	N/A	N/A	X	
Outcome data	15		✓	✓	✓	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	✓	✓	✓		
Main results	16	a)	✓	✓	✓	✓	✓	~	✓	✓	X	✓	X	✓	X	X	X	✓	X	✓	✓	✓	✓	✓	✓	~	~	
		b)	✓	✓	X	✓	✓	✓	✓	N/A	✓	✓	✓	✓	✓	✓	N/A	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	
		c)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Other analyses	17		X	X	X	X	✓	X	X	✓	✓	N/A	X	X	X	X	X	X	✓	X	X	~	✓	X	✓	X		
DISCUSSION																												
Key results	18		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Limitations	19		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	X	✓	✓	✓	✓		
Interpretation	20		✓	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Generalisability	21		✓	~	✓	X	✓	✓	✓	✓	X	✓	✓	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	X	
OTHER INFORMATION																												
Funding	22		X	✓	✓	X	✓	X	X	✓	✓	X	X	X	X	✓	✓	✓	✓	X	X	X	✓	X	X	X		

Key

✓ = meets

criteria well

~ = partially

meets criteria

X = does not

meet criteria

well

N/A = not

applicable

Table I - Table summarising STROBE quality checklist for each study.

	Variables Associated with PSA	Broomfield 2014	D'Aniello	Galligan	Goldfinger	Skolarus	White	Broomfield 2013	Leppavuori	Ayerbe	Fure	Kroeders	Giaquinto	Merriman	Lassalle-Lagadec	Ghika-Schmid	Sagen	Morrison	Field	Castellanos-Pinedo	Wang	Lincoln	Barker-Collo	Tang	Kim
Demographic	Older age		X				X	X		X			X				X		X		X	X	X	X	X
	Younger age	✓✓	X		✓✓	X	✓✓	X	✓✓	X			X				X		X		X	X	X	X	X
	Female	✓✓	X		✓	X	✓✓	X	✓✓	X			X				✓✓		X		X	X	X		
	Male		X					X			X		X				X		X		X	X			
	Living alone				X						✓✓														
	Socioeconomic deprivation	✓✓			✓		✓✓																		
Pre Stroke	Anxiety							✓												✓					
	Depression					X		✓✓				✓✓													
	Fatigue																				✓				
Stroke features	Left hemisphere		X								X		X		X								✓✓		
	Right hemisphere		X					X		X		X	X											✓✓	
	Stroke severity							✓	✓✓	X												X			✓✓
	Time since stroke				X	✓							✓✓							X	X	✓✓			
	Use of anxiolytic drugs							✓✓																	
	Pathological type (ischaemic/haemorrhagic)																								
	Stroke subtype (TOAST or OCSP)																								
Post Stroke	Dementia/cognitive impairment							X	X	✓✓													✓✓		
	Disability/ADL			✓	✓✓	✓		✓	✓✓	X		✓✓	X				X				✓✓	X	X		✓✓
	Baseline anxiety						✓✓										✓✓	✓✓	✓✓		✓✓	✓✓			
	Apathy																X			✓					
	Post stroke fatigue			✓✓																					
	Post stroke depression		✓✓	✓	✓		✓✓	✓✓				✓		✓	✓		✓	✓	✓			✓	✓	✓✓	
	Sleep disturbance			✓				✓✓																	
	Physical inactivity											X													
Other	Confidence																								
	Locus of control																								
	Coping																								
	Social role/participation					✓✓	✓																		
	Social support				✓✓	X																			

Key

✓✓ = significant

association found on multivariate analysis

✓ = significant

association found on univariate analysis

X = No significant association found

Blank = study did not look at this variable

Table II - Variables associated with post-stroke anxiety.

Search Strategies

MEDLINE search strategy

1. cerebrovascular disorders/ or exp basal ganglia cerebrovascular disease/ or exp brain ischemia/ or exp carotid artery diseases/ or exp cerebrovascular accident/ or cerebrovascular trauma/ or exp hypoxia-ischaemia, brain/ or exp intracranial arterial diseases/ or exp intracranial arteriovenous malformations/ or exp "intracranial embolism and thrombosis"/ or exp intracranial hemorrhages/ or stroke/ or exp brain infarction/ or vasospasm, intracranial/ or vertebral artery dissection/
2. (stroke or poststroke or post-stroke or cerebrovasc\$ or brain vasc\$ or cerebral vasc\$ or cva\$ or apoplex\$ or SAH).tw.
3. ((brain\$ or cerebr\$ or cerebell\$ or intracran\$ or intracerebral) adj5 (isch?emi\$ or infarct\$ or thrombo\$ or emboli\$ or occlus\$)).tw.
4. ((brain\$ or cerebr\$ or cerebell\$ or intracerebral or intracranial or subarachnoid) adj5 (haemorrhage\$ or hemorrhage\$ or haematoma\$ or hematoma\$ or bleed\$)).tw.
5. hemiplegia/ or exp paresis/
6. (hemipleg\$ or hemipar\$ or paresis or paretic).tw.
7. brain injuries/ or brain injury, chronic/
8. or/1-7
9. anxiety/
10. anxiety disorders/ or agoraphobia/ or obsessive-compulsive disorder/ or panic disorder/ or phobic disorders/ or exp stress disorders, traumatic/
11. exp Anti-Anxiety Agents/
12. (anxiety or anxieties or anxious or agoraphobi\$ or phobi\$ or panic disorder\$ or panic attack\$ or (obsess\$ adj3 compuls\$) or post?traumatic stress\$ or PTSD).tw.
13. (feel\$ adj5 (apprehens\$ or dread or disaster\$ or fear\$ or worry or worried or terror)).tw.
14. manifest anxiety scale/
15. or/9-14
16. 8 and 15

17. limit 16 to humans

EMBASE search strategy

1. cerebrovascular disease/ or basal ganglion hemorrhage/ or exp brain hematoma/ or exp brain hemorrhage/ or exp brain infarction/ or exp brain ischemia/ or exp carotid artery disease/ or cerebral artery disease/ or cerebrovascular accident/ or exp intracranial aneurysm/ or exp occlusive cerebrovascular disease/ or stroke/ or stroke patient/ or stroke unit/
2. (stroke or poststroke or post-stroke or cerebrovasc\$ or brain vasc\$ or cerebral vasc\$ or cva\$ or apoplex\$ or SAH).tw.
3. ((brain\$ or cerebr\$ or cerebell\$ or intracran\$ or intracerebral) adj5 (isch?emi\$ or infarct\$ or thrombo\$ or emboli\$ or occlus\$)).tw.
4. ((brain\$ or cerebr\$ or cerebell\$ or intracerebral or intracranial or subarachnoid) adj5 (haemorrhage\$ or hemorrhage\$ or haematoma\$ or hematoma\$ or bleed\$)).tw.
5. paralysis/ or hemiparesis/ or hemiplegia/ or paresis/
6. (hemipleg\$ or hemipar\$ or paresis or paretic).tw.
7. brain injury/
8. or/1-7
9. anxiety/
10. exp anxiety disorder/
11. exp anxiolytic agent/
12. (anxiety or anxieties or anxious or agoraphobi\$ or phobi\$ or panic disorder\$ or panic attack\$ or (obsess\$ adj3 compuls\$) or post?traumatic stress\$ or PTSD).tw.
13. (feel\$ adj5 (apprehens\$ or dread or disaster\$ or fear\$ or worry or worried or terror)).tw.
14. beck anxiety inventory/ or hamilton anxiety scale/ or "hospital anxiety and depression scale"/ or self-rating anxiety scale/ or state trait anxiety inventory/
15. or/9-14

16. 8 and 15

17. limit 16 to human

PhycINFO search strategy

1. cerebrovascular disorders/ or cerebral hemorrhage/ or exp cerebral ischemia/ or cerebral small vessel disease/ or cerebrovascular accidents/ or subarachnoid hemorrhage/
2. (stroke or poststroke or post-stroke or cerebrovasc\$ or brain vasc\$ or cerebral vasc\$ or cva\$ or apoplex\$ or SAH).tw.
3. ((brain\$ or cerebr\$ or cerebell\$ or intracran\$ or intracerebral) adj5 (isch?emi\$ or infarct\$ or thrombo\$ or emboli\$ or occlus\$)).tw.
4. ((brain\$ or cerebr\$ or cerebell\$ or intracerebral or intracranial or subarachnoid) adj5 (haemorrhage\$ or hemorrhage\$ or haematoma\$ or hematoma\$ or bleed\$)).tw.
5. hemiparesis/ or hemiplegia/
6. (hemipleg\$ or hemipar\$ or paresis or paretic).tw.
7. brain injur\$.tw.
8. or/1-7
9. exp anxiety/
10. exp anxiety disorders/ or panic/ or panic attack/ or fear/
11. anxiety management/
12. state trait anxiety inventory/ or taylor manifest anxiety scale/
13. (anxiety or anxieties or anxious or agoraphobi\$ or phobi\$ or panic disorder\$ or panic attack\$ or (obsess\$ adj3 compuls\$) or post?traumatic stress\$ or PTSD).tw.
14. (feel\$ adj5 (apprehens\$ or dread or disaster\$ or fear\$ or worry or worried or terror)).tw.

15. or/9-14

16. 8 and 15

CINAHL PLUS (Cumulative Index to Nursing and Allied Health Literature) search strategy

S1. cerebrovascular disorders/ or exp carotid artery diseases/ or cerebral aneurysm/ or “cerebral embolism and thrombosis”/ or exp cerebral ischemia/ or cerebral vascular accident/ or cerebral vasospasm/ or exp intracranial hemorrhage/ or vertebral artery dissections/

S2. stroke patients/ or stroke units/

S3. TI stroke or poststroke or post-stroke or cerebrovasc\$ or brain vasc\$ or cerebral vasc\$ or cva\$ or apoplex\$ or SAH

S4. TI ((brain\$ or cerebr\$ or cerebell\$ or intracran\$ or intracerebral) AND (isch?emi\$ or infarct\$ or thrombo\$ or emboli\$ or occlus\$))

S5. TI ((brain\$ or cerebr\$ or cerebell\$ or intracerebral or intracranial or subarachnoid) AND (haemorrhage\$ or hemorrhage\$ or haematoma\$ or hematoma\$ or bleed\$))

S6. hemiplegia/

S7. TI hemipleg\$ or hemipar\$ or paresis or paretic

S8. S1 or S2 or S3 or S4 or S5 or S6 or S7

S9. exp anxiety/

S9. anxiety disorders/ or generalized anxiety disorder/ or obsessive-compulsive disorder/ or panic disorder/ or social anxiety disorders/ or stress disorders, post-traumatic/ or phobic disorders/ or trichotillomania/ or body dysmorphic disorder/ or obsessive hoarding/ or agoraphobia/ or claustrophobia/

S10. "anxiety (Saba CCC)"/ or "fear (Saba CCC)"/ or self-rating anxiety scale/ or state trait anxiety inventory/ or death anxiety scale/ or "anxiety reduction (Iowa NIC)"/ or "anxiety (NANDA)"/ or "fear (NANDA)"/ or exp antianxiety agents/

S11. (anxiety or anxieties or anxious or agoraphobi\$ or phobi\$ or panic disorder\$ or panic attack\$ or (obsess\$ adj3 compuls\$) or post?traumatic stress\$ or PTSD).tw.

S12. (feel\$ adj5 (apprehens\$ or dread or disaster\$ or fear\$ or worry or worried or terror)).tw.

S13. S9 or S10 or S11 or S12

S14. S8 and S13

AMED (Allied and Alternative Medicine) search strategy

1. cerebrovascular disorders/ or cerebral hemorrhage/ or cerebral infarction/ or cerebral ischemia/ or cerebrovascular accident/
2. (stroke or poststroke or post-stroke or cerebrovasc\$ or brain vasc\$ or cerebral vasc\$ or cva\$ or apoplexy\$ or SAH).tw.
3. ((brain\$ or cerebr\$ or cerebell\$ or intracran\$ or intracerebral) adj5 (isch?emi\$ or infarct\$ or thrombo\$ or emboli\$ or occlus\$)).tw.
4. ((brain\$ or cerebr\$ or cerebell\$ or intracerebral or intracranial or subarachnoid) adj5 (haemorrhage\$ or hemorrhage\$ or haematoma\$ or bleed\$)).tw.
5. hemiplegia/
6. (hemipleg\$ or hemipar\$ or paresis or paretic).tw.
7. 1 or 2 or 3 or 4 or 5 or 6
8. exp anxiety/ or fear/ or panic/ or exp anxiety disorders/
9. (anxiety or anxieties or anxious or agoraphobi\$ or phobi\$ or panic disorder\$ or panic attack\$ or (obsess\$ adj3 compuls\$) or post?traumatic stress\$ or PTSD).tw.
10. (feel\$ adj5 (apprehens\$ or dread or disaster\$ or fear\$ or worry or worried or terror)).tw.
11. 8 or 9 or 10
12. 7 and 11