eAppendix 1 Search strategy

Search terms:

1. #1 (deliri* OR confus* OR confusion* OR brain syndrome OR brain failure OR Psycho?organic syndrome* OR organic psycho?yndrome OR toxic confus* OR alcohol* psychos?s OR delirium tremens OR withdrawal syndrome) kw,ti,ab

2. #2 (brain vascu* OR cerebrolvascu* OR cerebral vascu* OR cerebrovascular disease* OR cerebrovascular disorder* OR stroke OR isch?emi* OR isch?emi* attack* OR infarct* OR intracranial emboli* OR intracranial thrombo* OR intracranial h?emorrhag* OR intracranial bleed* OR carotid artery disease* OR intracranial arterial disease* OR post?stroke OR after stroke OR neurologic* deficit* OR TIAOR SAH ORAVM) kw,ti,ab

3. #3 (death OR mortality OR prognos* OR predict* OR course OR length of stay OR hospital* OR stay OR LOS OR institut* OR cogniti* OR dysfuncti* OR cognitive decline OR dement* OR function* OR Rankin scale OR quality of life OR indepnden* OR activit*) kw,ti,ab

4. #1 AND #2 AND #3

eAppendix 2 Modified Newcastle- Ottawa Quality Assessment Scale for cohort study

Selection

1) Representativeness of the exposed cohort

a) Truly representative (1 point)

b) Somewhat representative (1 point)

c) Selected group of users (0 points)

d) No description of the derivation of the cohort (0 points)

2) Selection of the non-exposed cohort

a) Drawn from the same community as the exposed cohort (1 point)

b) Drawn from a different source (0 points)

c) No description of the derivation of the non-exposed cohort (0 points)

3) Ascertainment of exposure

a) Secure record (e.g., medical records) (1 point)

b) Structured interview (1 point)

c) Written self-report (0 points)

d) No description (0 points)

e) Other (0 points)

4) Demonstration that outcome of interest was not present before follow-up

a) Yes (1 point)

b) No (0 points)

Comparability and Design[†]

1) Comparability of cohorts on the basis of the design or analysis

a) Study controls for two or more covariates (1 point)

b) Study controls for less than two covariates (0 points)

2) Longitudinal study design

a) Prospective longitudinal/cohort study (1 point)

b) Retrospective longitudinal/cohort study (0 points)

Outcome

eAppendix 3 Modified Newcastle-Ottawa Quality Assessment Scale for case-control study

1) Assessment of outcome

a) Independent blind assessment (1 point)

b) Record linkage (1 point)

c) Self-report (0 points)

d) No description (0 points)

e) Other (0 points)

2) Was follow-up long enough for outcome to occur (at least 1 month)

a) Yes (1 point)

b) No (0 points)

3) Adequacy of follow-up of cohorts

a) Complete follow-up – all subjects accounted for (1 point)

b) Subjects lost to follow-up unlikely to introduce bias – number lost less than or equal to 20%, or description provided for those lost (1 point)

c) Follow-up rate less than 80% and no description of those lost (0 points)

d) No statement (0 points)

Notably, a maximum of 9 scores can be awarded to the cohort study: 4 for selection, 3 for outcome, and 2 for comparability. A summary score estimate of 0-3 indicated low quality, 4-6 indicated moderate quality and 7-9 indicated high quality. [†]Modified for the systematic review.

1) Is the case definition adequate?

a) yes, with independent validation (1 point)

b) yes, eg record linkage or based on self reports (0 point)

c) no description (0 point)

2) Representativeness of the cases

a) consecutive or obviously representative series of cases (1 point)

b) potential for selection biases or not stated (0 point)

3) Selection of Controls

a) community controls (1 point)

b) hospital controls (0 point)

c) no description (0 point)

4) Definition of Controls

a) no history of disease (endpoint) (1 point)

b) no description of source (0 point)

Comparability

1) Comparability of cases and controls on the basis of the design or analysis

a) study controls for age, sex (1 point)

b) study controls for any additional factor (1 point)

Exposure

1) Ascertainment of exposure

a) secure record (eg surgical records) (1 point)

b) structured interview where blind to case/control status (1 point)

c) interview not blinded to case/control status (0 point)

d) written self report or medical record only (0 point)

e) no description (0 point)

2) Same method of ascertainment for cases and controls

a) yes (1 point)

b) no (0 point)

3) Non-Response rate

a) same rate for both groups (1 point)

b) non respondents described (0 point)

c) rate different and no designation (0 point)

Notably, a maximum of 9 scores can be awarded to the cohort study: 4 for selection, 2 for comparability, and 3 for exposure. A summary score estimates of 0-3 indicated low quality, 3-6 indicated moderate quality and 7-9 indicated high quality. †Modified for the systematic review. A study can be awarded a maximum of one star for each numbered item within the Selection and Exposure categories. A maximum of two stars can be given for Comparability.

eTable 1 Methodological quality for outcomes of poststroke delirium

Title	Selection				Comparability	Exposure			Total
	Case definition	Representativeness of cases	Selection of controls	Definition of controls	Comparability of cases and controls on basis of design and analysis	Assessment of exposure	Same method of ascertainment for cases and controls	Non-response rate	
Marielle W.A. van Rijsbergen, 2011	1	1	1	1	2	1	1	0	8
Peter Nydahl, 2017	0	1	1	1	2	1	1	0	7
Zikrija Dostovic, 2018	0	1	1	1	2	1	1	0	7
Zikrija Dostovic, 2021	0	1	1	1	2	1	1	0	7

Table S1 Characteristics of included studies

Author	Country	Setting	Center	Stroke Type	Total Sample, n	Delirium cases, n	Average Age, mean (SD)	Gender (M/F)	Delirium Assessment	Quality Assessment
Gustafson et al., 1991	Sweden	Stroke Unit	Single	acute IS or ICH	145	69	73.0 (10.2)	90/55	DSM-III	5
Henon et al., 1999	France	Stroke Unit	Single	acute IS or ICH	202	49	75.0 (10.7)	97/105	DSM-IV	8
Caeiro et al., 2004	Portugal	Stroke Unit	Single	all Stroke	218	29	NA	130/88	DSM-IV/ DRS	5
Sheng et al., 2006	Australia	Stroke Unit	Single	acute IS or ICH	156	39	79.2(6.7)	83/73	DSM-IV	8
Dostovicet al., 2009	Bosnia and Herzegovina	Neurology	single	acute IS or ICH and SAH	233	59	NA	NA	DSM-IV /DRS-98	5
Manuset al., 2009	UK	Stroke Unit	Single	acute IS or ICH excluding SAH	82	23	66.4 (15.9)	51/31	DSM-III/CAM	7
Dahl MH, 2010	Norway	Stroke Unit	Single	all Stroke	178	18	73.0	102/76	DSM-IV/CAM	7
Mcmanus et al., 2011	UK	Stroke Unit	Single	acute IS or ICH excluding SAH	82	23	66.4 (15.9)	51/31	DSM-III/CAM	9
Rijsbergen et al., 2011	Netherlands	Stroke Unit	multi-center	acute IS or ICH excluding SAH	122	61	75.1(10.7)	29/21	CAM	9
Oldenbeuving et al., 2011	Netherlands	Stroke Unit	multi-center	acute IS or ICH excluding SAH and TIA	527	62	72(11.2)	288/239	CAM / DRS	9
Miu et al., 2012	China	Stroke Unit	Single	acute IS excluding TIA or ICH	314	86	72.9 (10.3)	163/151	DSM-III/CAM	8
Melkas et al., 2012	Finland	Helsinki Stroke Aging Memory Cohort	Single	acute IS	263	50	70.8 (7.4)	135/128	DSM-IV	9
Mitasova et al., 2012	Czech Republic	Stroke Unit	Single	acute IS excluding TIA or ICH excluding SAH	129	55	71.2 (11.5)	72/57	DSM-IV/ CAM-ICU	8
Naidech et al., 2013	USA	ICU and Stroke Unit	Single	acute ICH	114	31	62.4 (13.8)	62/52	DSM-IV/ CAM-ICU	8
Kozak et al., 2016	Turkey	Stroke Unit	Single	acute IS excluding TIA	60	11	66.2 (12.5)	29/31	DSM-IV/DRS	6
Chan et al., 2017	Australia	Stroke Unit	Single	acute IS excluding TIA or ICH excluding SAH	156	39	79.2(6.7)	83/73	DSM-IV	8
Rosenthal et al., 2017	USA	Neuro/Spine ICU	Single	acute ICH	174	53	63.5	92/82	CAM-ICU	7
Limet al., 2017	Korea	Stroke Unit	Single	acute IS	576	38	65.2 (11.7)	368/208	CAM/ DRS-R-98	8

Study	Country	Setting	Center	Stroke type	N	n	Age	Sex	Assessment	Score
Nydahl et al., 2017	Germany	Stroke Unit	Single	acute IS and ICH including TIA	309	33	73.4(4.7)	NA	CAM	8
Ojagbemi et al., 2017	Nigeria	Neurology Department	Single	acute IS or ICH	99	33	61.1 (12.9)	52/47	CAM/DRS	7
Qu et al., 2018	China	Neurology Department	Single	acute IS	261	38	61.3 (12.0)	184/77	CAM/DRS	8
Dostovicet al., 2018	Bosnia and Herzegovina	Neurology Department	single	acute IS or ICH	200	100	NA	NA	DSM-IV/ DRS-98	7
Kotfiset al., 2019	Poland	Stroke Unit	Single	acute IS	760	121	71.6(12.5)	393/367	DSM-V/ CAM-ICU	8
Kotfiset al., 2019	Poland	Neurology Department	Single	acute IS	1001	172	71.0 (3.0)	523/478	DSM-V/ CAM-ICU	8
Zipseret al., 2019	Switzerland	Neurology Department	Single	all Stroke	1487	356	71.2 (13.3)	836/651	DSM-V/ DOS	5
Pasinska et al., 2019	Poland	Stroke Unit	Single	acute IS or ICH including TIA	750	203	71.8 (13.1)	352/398	DSM-V / CAM / CAM-ICU	9
Zaitoun et al., 2019	Egypt	ICU, Stroke Unit and Neurology	Single	All Stroke excluding TIA	74	15	60.7 (11.5)	40/34	DSM-IV	7
Aizen et al., 2019	Israel	Rehabilitation	Single	all Stroke	110	30	80.2 (8.0)	53/57	CAM/ DRS-R-98	6
Kowalska et al., 2020	Poland	Stroke Unit	Single	acute IS or ICH including TIA	750	203	71.8 (13.1)	352/398	DSM-V / CAM / CAM-ICU	8
Reznik et al., 2021	USA	Neurocritical Care and Stroke Unit	Single	acute ICH	590	348	70.5 (15.5)	309/281	DSM-V	9
Zipseret al., 2021	Switzerland	Neurology Department	Single	all Stroke	567	221	72.3 (4.2)	331/236	DSM-V/DOS	9
Silva et al., 2021	Brazil	Stroke Unit	Single	acute IS or ICH	227	71	62.5 (13.5)	121/106	CAM-ICU	9
Czyzycki et al., 2021	Poland	Neurology Department	Single	acute IS or ICH including TIA	688	169	72.4(5.1)	318/370	CAM / CAM-ICU / DSM-V /DRS-R-98	8
Stokholmet al., 2021	Denmark	Neurology Department	Single	acute IS	64	8	70 (9.8)	42/22	CAM	5
Dostovicet al., 2021	Croatia	Neurology	Single	acute IS or ICH	200	100	NA	NA	DRS-R-98	6

		Department								
Mansutti et al., 2022	Italy	Stroke Unit	multi-center	acute IS or ICH	78	27	73.1 (11.5)	46/32	4AT	5
Rollo et al.,2022	Italy	Stroke Unit	Single	acute IS or ICH	103	36	75(3.0)	62/41	RASS / CAM-ICU	8
Nerdal et al., 2022	Norway	Stroke Unit	Multi-center	acute IS or ICH	139	13	71.4 (13.4)	73/68	CAM	8
Droś et al., 2023	Poland	Stroke Unit	Single	acute IS or ICH including TIA	750	203	74 (3.16)	352/398	bCAM/ CAM-ICU/ DSM-V	9

Abbreviations: 4AT: 4 A's Test; bCAM: abbreviated version of the Confusion Assessment Method; CAM: Confusion Assessment Method; CAM-ICU: Confusion Assessment Method of the Intensive Care Unit; CAM-S: Confusion Assessment Method of Severity; DOS: Delirium Observation Screening; DRS: Delirium Rating Scale; DSM: Diagnostic and Statistical Manual of Mental Disorders; ICH: intracranial cerebral hemorrhage; ICU: Intensive Care Unit; IS: ischemic stroke; NA = not available; RASS: Richmond Agitation Sedation Scale; SAH: subarachnoid hemorrhage; TIA: transient ischemic attack; USA: United States of America; UK: United Kingdom

Table S2 Methodological quality for outcomes of poststroke delirium

Title	Selection				Comparability		Outcome			Total
	Representativeness	Control group	Ascertainment of exposure	Outcome not at baseline	Adjusted Covariates	Study type	Assessment of outcome	Follow-up	Adequacy of follow-up of cohorts	
Yngve Gustafson, 1991	1	1	1	0	0	1	1	0	0	5
H. Henon, 1999	1	1	1	1	0	1	1	1	1	8
Lara Caeiro, 2004	1	1	1	0	0	1	1	0	0	5
Ai Zhen Sheng, 2006	1	1	1	1	0	1	1	1	1	8
Zikrija Dostovic, 2009	1	1	1	0	0	1	1	0	0	5
John Mc Manus, 2009	1	1	1	0	0	1	1	1	1	7
Dahl MH, 2010	1	1	1	0	0	1	1	1	1	7
JOHNT.MCMANUS, 2011	1	1	1	1	1	1	1	1	1	9
Marielle W.A. van Rijsbergen, 2011	1	1	1	1	1	1	1	1	1	9
A.W. Oldenbeuving, 2011	1	1	1	1	1	1	1	1	1	9
Doris Ka Ying Miu, 2012	1	1	1	1	1	1	1	1	0	8
Susanna Melkas, 2012	1	1	1	1	1	1	1	1	1	9
Adela Mitasova, 2012	1	1	1	1	1	1	1	1	0	8
Andrew M. Naidech, 2013	1	1	1	1	1	1	1	1	0	8
Hasan Huseyin Kozak, 2016	1	1	1	1	0	1	1	0	0	6
Eunice Kar Wing Chan, 2017	1	1	1	1	0	1	1	1	1	8
Lisa J. Rosenthal, 2017	1	1	1	0	0	1	1	1	1	7
Tae Sung Lim, 2017	1	1	1	1	0	1	1	1	1	8
Peter Nydahl, 2017	1	1	1	1	0	1	1	1	1	8
Akin Ojagbemi, 2017	1	1	1	1	0	1	1	1	0	7
Jianfeng Qu, 2018	1	1	1	1	0	1	1	1	1	8

Zikrija Dostovic, 2018	1	1	1	1	0	1	1	1	0	7
Katarzyna Kotfis, 2019	1	1	1	1	0	1	1	1	1	8
Katarzyna Kotfis, 2019	1	1	1	1	0	1	1	1	1	8
Carl Moritz Zipser, 2019	1	1	1	0	0	1	1	0	0	5
Paulina Pasinska, 2019	1	1	1	1	1	1	1	1	1	9
A. M. Zaitoun, 2019	1	1	1	1	0	1	1	1	0	7
EfraimAizen, 2019	1	1	1	0	0	1	1	1	0	6
Katarzyna Kowalska, 2020	1	1	1	1	0	1	1	1	1	8
Michael E. Reznik, 2021	1	1	1	1	1	1	1	1	1	9
Carl Moritz Zipser, 2021	1	1	1	1	1	1	1	1	1	9
Ivã Taiuan Fialho Silva, 2021	1	1	1	1	1	1	1	1	1	9
Mateusz Czyzycki, 2021	1	1	1	1	1	1	1	1	0	8
Jannik Stokholm, 2021	1	1	1	0	0	1	1	0	0	5
Zikrija Dostovic, 2021	1	1	1	1	0	1	1	0	0	6
Irene Mansutti, 2022	1	1	1	0	0	1	1	0	0	5
Eleonora Rollo, 2022	1	1	1	1	0	1	1	1	1	8
Vilde Nerdal, 2022	1	1	1	1	0	1	1	1	1	8
Jakub Droś, 2023	1	1	1	1	1	1	1	1	1	9

Note: Amaximum of 9 scores can be awarded to the cohort study: 4 for selection, 3 for outcome, and 2 for comparability. A summary score estimate of 0-3 indicated low quality, 4-6 indicated moderate quality and 7-9 indicated high quality.

Table S3 The meta-analysis of outcomes for post-stroke delirium with excluding outliers

Outcomes	No.of Outliers Studies	Random Effect (95% CI)		p-value	Q-value,p-value, I^2	P-value for Egger's regression
		Pooled OR	**Pooled SMD**			
Mortality	3	5.13 (4.10-6.42)		**< 0.001**	33.41, 0.056, 34.16	0.92
LoS	8		0.60 (0.47 to 0.72)	**< 0.001**	26.01, 0.006, 57.71	0.19
Institutionalization	2	4.15 (2.95-5.84)		**< 0.001**	22.10, 0.005, 63.81	0.70
Cognitive impairment						
Continuous	1		-1.10 (-1.50 to -0.70)	**< 0.001**	3.76, 0.152, 46.83	0.92
Modified Rankin Scale						
Continuous	6		2.45 (0.22 to 4.69)	**0.031**	252.96, P < 0.001, 98.81	0.11
Quality of life						
Continuous	1		-1.52 (-2.41 to -0.63)	**0.001**	187.96, P < 0.001, 96.80	0.81

Boldface type indicates statistical significance with two-sided p < 0.05.

Abbreviations: CI: confidence interval; LoS: length of stay; OR: odds ratio; SMD: standardized mean difference

Table S4 Uni- and multivariable Meta-regression for heterogeneity-originated covariates of outcomes

Outcomes	Univariable						Multivariable			
	β	SE	95% CI	z-value	p-value	R^2 (%)	β	z-value	p-value	R^2 (%)
Mortality										
Age at Baseline, y	-0.03	0.03	-0.10 to 0.03	-1.09	0.276	0				
NIHSS	-0.03	0.07	-0.18 to 0.10	-0.52	0.606	0				
Measure of Delirium					0.557	0				
CAM	Ref.	-	-	-	-					
DSM	-0.28	0.57	-1.42 to 0.84	-0.49	0.621					
Other	1.25	1.66	-2.01 to 4.53	0.75	0.450					
Mix	0.20	0.47	-0.73 to 1.13	0.42	0.676					
Stroke Type						10.0				
ICH	Ref.	-	-	-	-		Ref.	-	-	16
IS	-1.69	0.90	-3.47 to -0.08	-1.87	0.061		-1.01	-1.07	0.284	
IS and ICH	-1.95	0.87	-3.67 to -0.24	-2.24	**0.025**		-1.51	-1.70	0.089	
Neuropsychiatric Disorders Excluded						0				
No	Ref.	-	-	-	-					
Yes	-0.07	0.29	-0.65 to 0.51	-0.24	0.808					
Duration of Follow-up, m						1.0				
< 3	Ref.	-	-	-	-		Ref.	-	-	
≥ 3	-0.69	0.30	-1.29 to -0.09	-2.26	**0.023**		-0.69	-2.18	**0.029**	
NOS scores	-0.10	0.11	-0.33 to 0.13	-0.86	0.390	0				
LoS										
Age at Baseline, y	-0.03	0.04	-0.11 to 0.05	-0.74	0.458	0				
NIHSS	-0.08	0.08	-0.25 to 0.08	-0.99	0.324	0				
Measure of Delirium					0.218	0				
CAM	Ref.	-	-	-	-					
DSM	-0.98	0.70	-2.36 to 0.39	-1.40	0.161					41
Other	-1.40	0.99	-3.36 to 0.55	-1.41	0.159					
Mix	-0.14	0.55	-1.23 to 0.95	-0.25	0.801					
Stroke Type					**0.004**	37			**0.012**	
ICH	Ref.	-	-	-	-		Ref.	-	-	

IS	-1.81	0.57	-2.94 to -0.68	-3.14	**0.001**		-1.62	-2.79	**0.005**	
IS and ICH	-1.60	0.52	-2.62 to -0.58	-3.09	**0.002**		-1.48	-2.83	**0.004**	
Neuropsychiatric Disorders Excluded						5				
No	Ref.	-	-	-	-		Ref.	-	-	
Yes	0.50	0.53	-0.53 to 1.54	0.95	0.340		0.96	2.18	**0.029**	
NOS scores	0.27	0.13	0.01 to 0.53	2.11	**0.035**	4	0.25	2.29	**0.022**	
Institutionalization										
Age at Baseline, y	-0.01	0.06	-0.13 to 0.10	-0.30	0.760	0				
NIHSS	-0.01	0.15	-0.31 to 0.28	-0.10	0.920	0				
Measure of Delirium					0.830	0				
DSM	Ref.	-	-	-	-					
Other	-0.59	0.98	-2.52 to 1.34	-0.60	0.550					
Mix	-0.12	0.62	-1.34 to 1.09	-0.21	0.836					
Stroke Type					**< 0.001**	100			**< 0.001**	100
ICH	Ref.	-	-	-	-		Ref.	-	-	
IS	-2.84	0.73	-4.28 to -1.39	-3.86	**< 0.001**		-2.84	-3.86	**< 0.001**	
IS and ICH	-1.75	0.72	-3.18 to -0.32	-2.40	**0.016**		-1.75	-2.40	**0.016**	
Neuropsychiatric Disorders Excluded						0				
No	Ref.	-	-	-						
Yes	0.43	0.45	-0.46 to 1.33	0.95	0.340					
NOS scores	0.06	0.17	-0.28 to 0.41	0.34	0.732	0				
Cognitive Decline										
Measure of Delirium						97				97
CAM	Ref.	-	-	-	-		Ref.	-	-	
DSM	6.00	0.77	4.48 to 7.51	7.75	**< 0.001**		6.00	7.75	**< 0.001**	
Functional Outcome										
Age at Baseline, y	0.21	0.23	-0.24 to 0.66	0.90	0.367	0				
NIHSS	-0.13	0.34	-0.81 to 0.55	-0.37	0.709	0				
Measure of Delirium					0.613	0				14
CAM	Ref.	-	-	-	-					
DSM	-0.14	4.39	-8.75 to 8.45	-0.03	0.972					
Other	0.54	4.39	-8.06 to 9.16	0.12	0.900					
Mix	2.98	3.32	-3.53 to 9.50	0.90	0.368					

	β	SE	95% CI	t	p	I² (%)	β	t	p	N
Stroke Type					0.482	0				
ICH	Ref.	-	-	-	-					
IS	-3.10	2.58	-8.16 to 1.95	-1.20	0.229					
IS and ICH	-1.84	2.58	-6.90 to -3.21	-0.72	0.474					
Neuropsychiatric Disorders Excluded						0				
No	Ref.	-	-	-	-					
Yes	0.42	2.06	-3.61 to -4.46	0.21	0.836					
Duration of Follow-up, m						0				
< 3	Ref.	-	-	-	-					
≥ 3	-0.26	2.43	-5.04 to 4.51	-0.11	0.913					
NOS scores	1.06	0.59	-0.11 to 2.23	1.77	0.076	14	1.06	1.77	0.076	
Quality of Life										
Age at Baseline, y	-0.00	0.17	-0.34 to 0.32	-0.05	0.961	0				
NIHSS	-1.23	1.20	-3.58 to 1.12	-0.10	0.306	0				
Measure of Delirium					0.548	0				
DSM	Ref.	-	-	-	-					
Other	-0.14	3.48	-6.97 to 6.67	-0.04	0.966					
Mix	-2.36	2.30	-6.88 to 2.14	-1.03	0.303					
Stroke Type						0				
IS										
IS and ICH	-2.46	3.03	-8.41 to 3.48	-0.81	0.417					79
Measure Tools					**< 0.001**	79			**< 0.001**	
BI	Ref.	-	-	-	-		Ref.	-	-	
FIM	0.63	1.06	-1.44 to 2.70	0.59	0.551		0.53	0.48	0.629	
IADL	-8.15	1.39	-10.89 to -5.41	-5.84	**< 0.001**		-7.77	-4.97	**< 0.001**	
NOS scores	-1.10	0.69	-2.47 to 0.25	-1.60	0.110	8	-0.24	-0.62	0.534	

Boldface type indicates statistical significance with two-sided p < 0.05.

Abbreviations: BI: Barthel Index; CAM: Confusion Assessment Method; CAM: Confusion Assessment Method; CI: confidence interval; DSM: Diagnostic and Statistical Manual of Mental Disorders; FIM: Functional Independence Measure; IADL: Instrumental Activities of Daily Living; ICH: intracranial cerebral hemorrhage; IS: ischemic stroke; LoS: length of stay; NA = not available; NIHSS: National Institute of Health stroke scale; m: month; RASS: Richmond Agitation Sedation Scale; Ref.: reference; SAH: subarachnoid hemorrhage; TIA: transient ischemic attack; USA: United States of America; UK: United Kingdom; y, year

Table S5 Sensitivity analysis

Outcomes	Adjusting Level	No. of Studies	Effect Size (95% CI)	p-value	Q-value, p-value, I^2	p-value for Egger's Regression
Sensitivity Analysis						
Mortality	unadjusted, OR	18	4.22 (3.07 to 5.79)	**< 0.001**	51.90, **< 0.001**, 67.25	0.49
	inadequate Adjusted, OR	4	3.27 (1.47 to 7.27)	**0.004**	7.64, 0.05, 60.74	0.15
LoS	unadjusted, SMD	19	1.21 (0.54 to 1.88) *	**< 0.001**	1520.54, **< 0.001**, 98.81	**< 0.001**
Institutionalization	unadjusted, OR	7	4.43 (2.20 to 8.91)	**< 0.001**	41.58, **< 0.001**, 85.57	0.02
Cognitive Decline	unadjusted, OR	4	9.21 (5.35 to 15.85)	**< 0.001**	1.21, 0.74, 0.00	0.24
	unadjusted, SMD	1	-1.27 (-1.67 to -0.87)	**< 0.001**	0.00, 1.00, 0.00	-
Dementia	unadjusted, OR	2	9.45 (3.57 to 24.98)	**< 0.001**	0.43, 0.51, 0.00	-
Poor functional outcomes	unadjusted, OR	2	4.78 (2.95 to 7.76)	**< 0.001**	0.44, 0.50, 0.00	-
	unadjusted, SMD	5	2.07 (-0.09 to 4.24)	0.06	488.07, **< 0.001**, 99.18	0.90
	inadequate Adjusted, OR	2	4.16 (1.69 to 10.21)	**0.002**	0.84, 0.35, 0.00	-
	adequate Adjusted, OR	2	4.16 (1.69 to 10.21)	**0.002**	0.84, 0.35, 0.00	-
Poor Quality of Life	unadjusted, SMD	6	-2.97 (-5.41 to -0.53)	**0.017**	1030.85, **< 0.001**, 99.51	0.42
Sensitivity Analysis — Excluding Outliers						
Mortality	unadjusted, OR	3	5.13 (4.10 to 6.42)	**< 0.001**	33.41, 0.056, 34.16	0.92
LoS	unadjusted, SMD	8	0.60 (0.47 to 0.72)	**< 0.001**	26.01, **0.006**, 57.71	0.19
Institutionalization	unadjusted, OR	2	4.15 (2.95 to 5.84)	**< 0.001**	22.10, **0.005**, 63.81	0.70
Cognitive Decline	unadjusted, SMD	1	-1.10 (-1.50 to -0.70)	**< 0.001**	3.76, 0.152, 46.83	0.92
Poor functional outcomes	unadjusted, SMD	6	2.45 (0.22 to 4.69)	0.031	252.96, **< 0.001**, 98.81	0.11
Poor Quality of Life	unadjusted, SMD	1	-1.52 (-2.41 to -0.63)	**0.001**	187.96, **< 0.001**, 96.80	0.81

Boldface type indicates statistical significance with two-sided p < 0.05.

*Pooled effect size was adjusted by the trim-and-filled method.

Abbreviations: CI: confidence interval; LoS: length of stay; OR: odds ratio; SMD: standardized mean difference
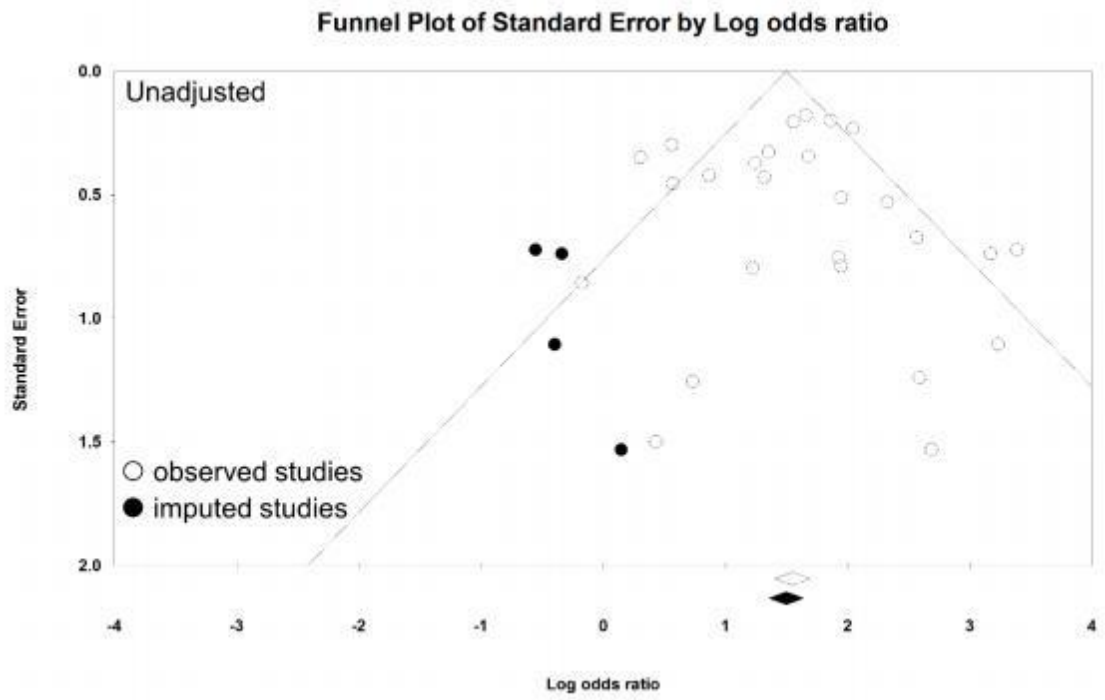
Figure S1 Funnel plot assessing publication bias on mortality of post-stroke delirium

Funnel Plot of Standard Error by Log odds ratio
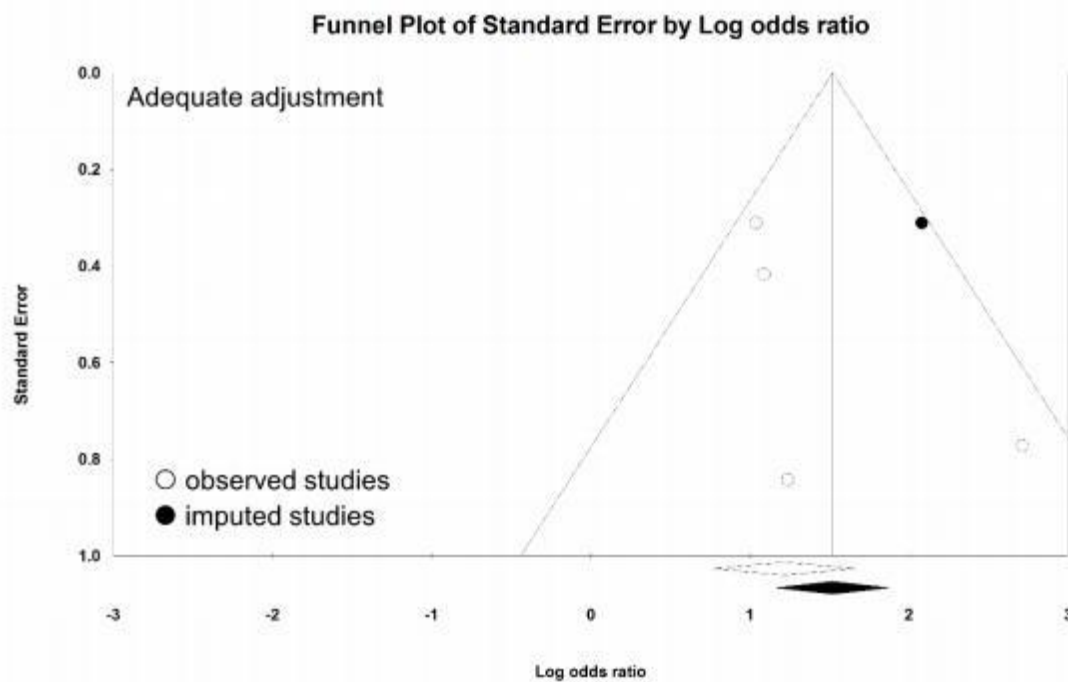
The adjusted pooled odd ratio (OR) was 4.72 with a 95% confidence interval ranging from 2.57-8.67, after simulation of 1 missing study using the trim-and-filled method.
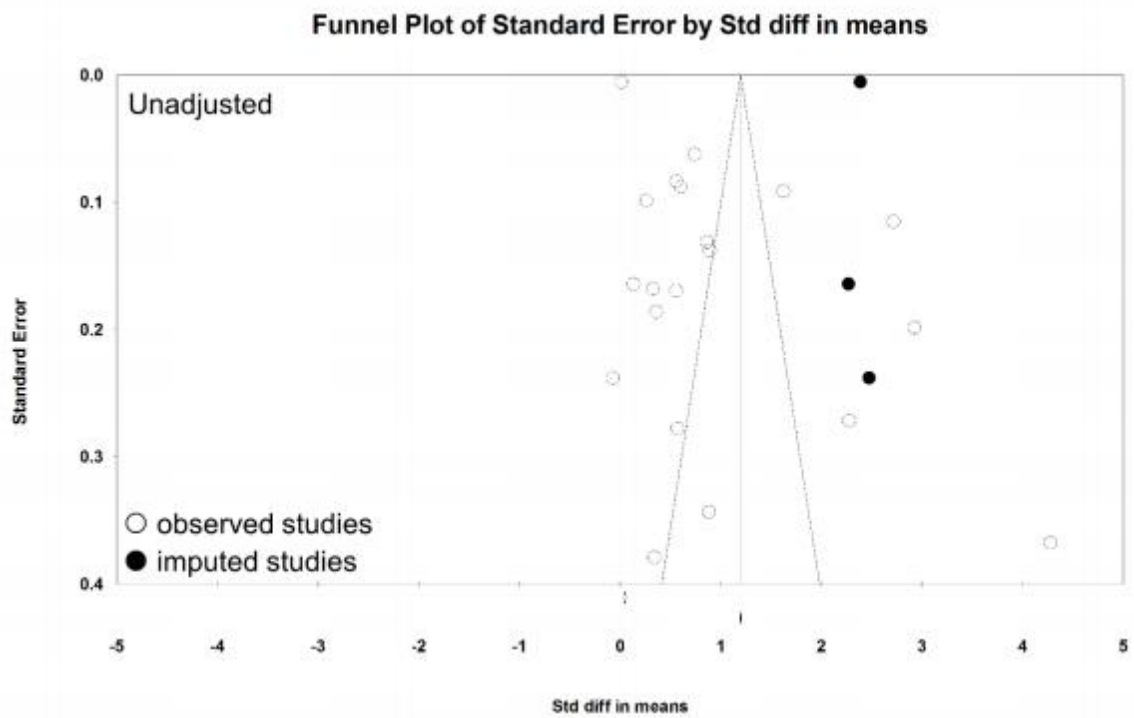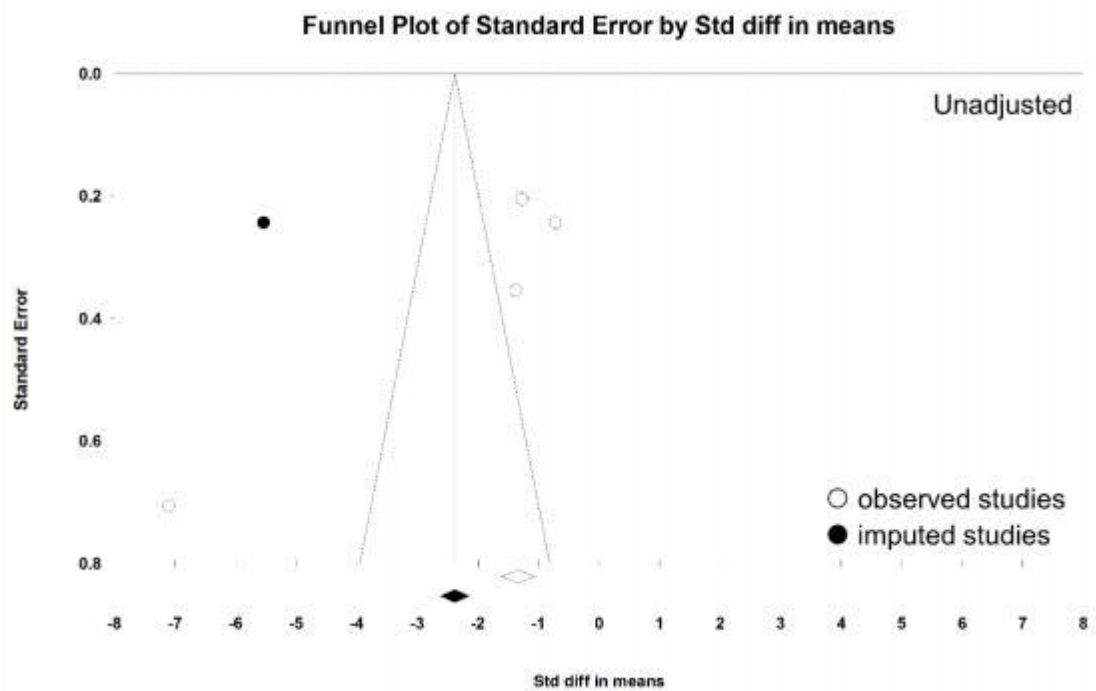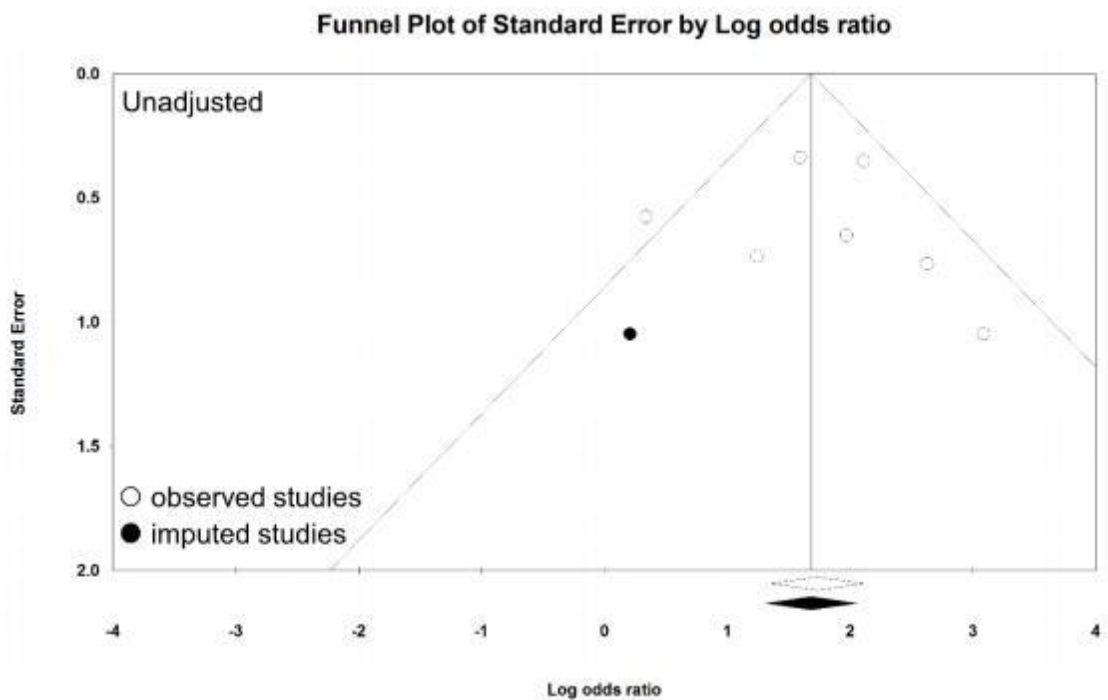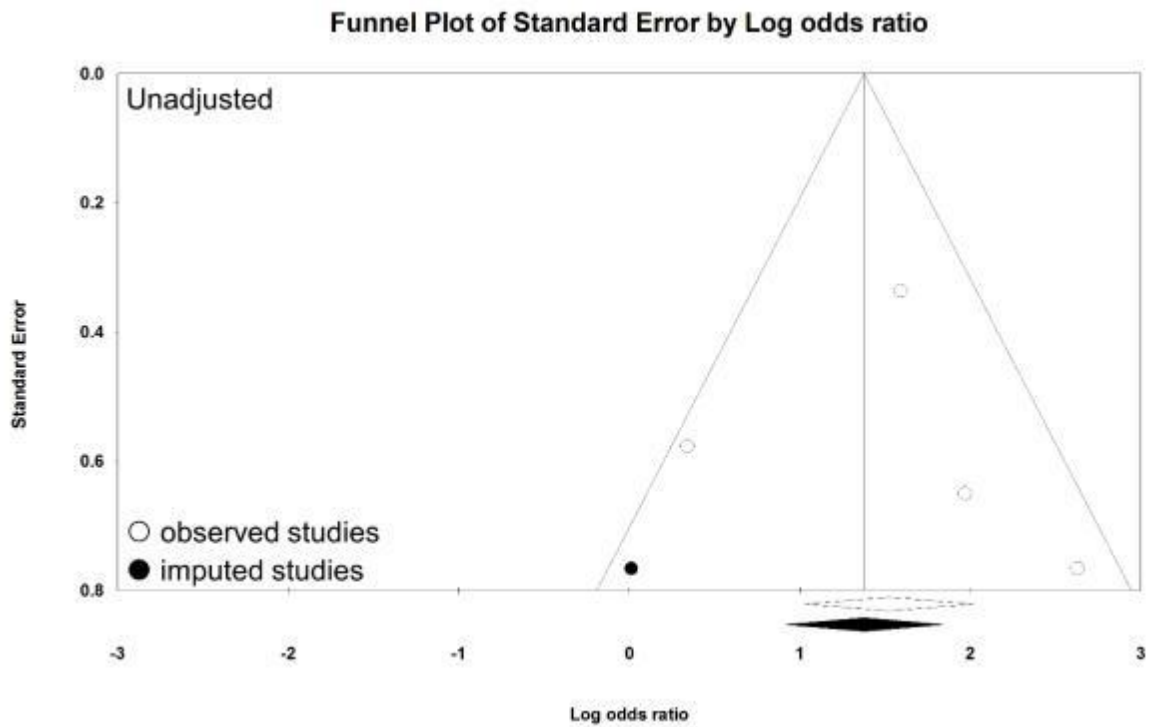

Funnel Plot of Standard Error by Log odds ratio
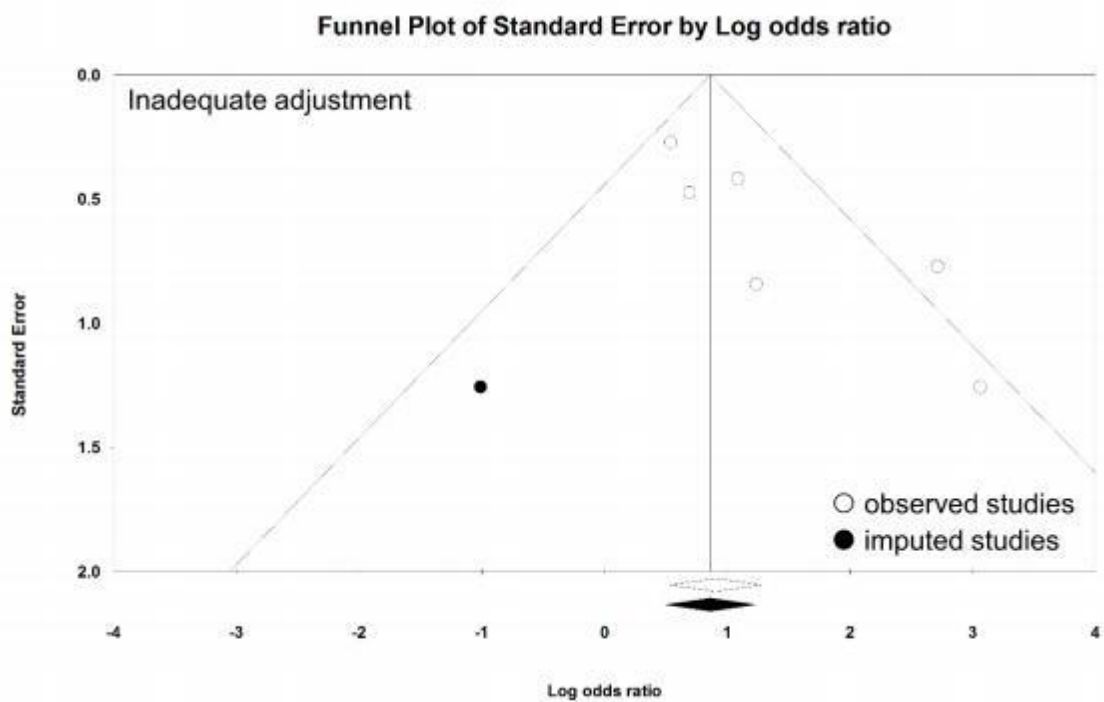
The adjusted pooled odd ratio (OR) was 2.92 with a 95% confidence interval ranging from 1.51-5.64, after simulation of 1 missing study using the trim-and-filled method.

Funnel Plot of Standard Error by Log odds ratio

The adjusted pooled odd ratio (OR) was 4.12 with a 95% confidence interval ranging from 3.08-5.50, after simulation of 4 missing study using the trim-and-filled method.

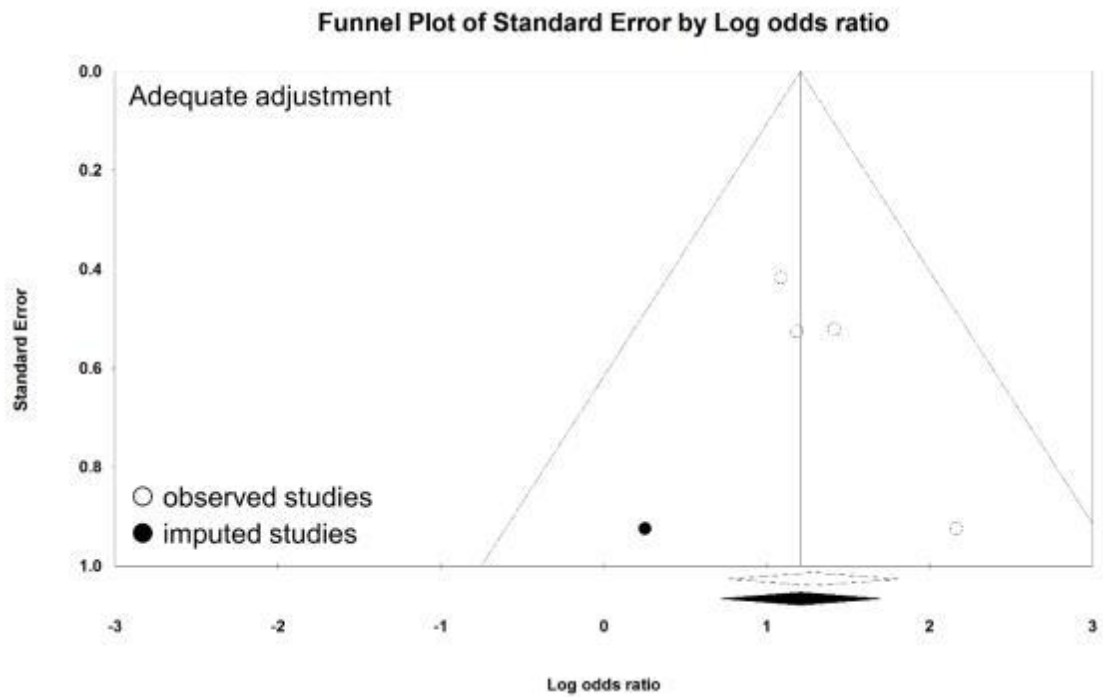**Figure S2 Funnel plot assessing publication bias on hospital stay of post-stroke delirium**

Funnel Plot of Standard Error by Std diff in means

The adjusted pooled odd ratio (OR) was 1.21 with a 95% confidence interval ranging from 0.54-1.89, after simulation of 3 missing study using the trim-and-filled method.

Figure S3 Funnel plot assessing publication bias on institutionalization of post-stroke delirium

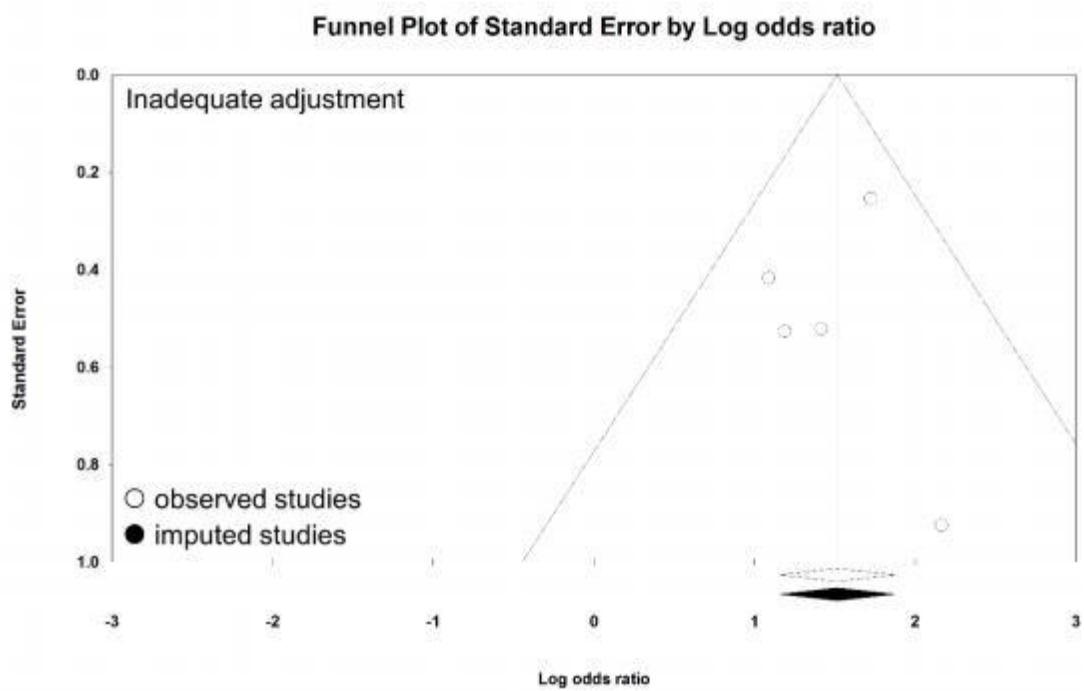Funnel Plot of Standard Error by Log odds ratio

The adjusted pooled odd ratio (OR) was 3.24 with a 95% confidence interval ranging from 2.80-3.76, after simulation of 2 missing study using the trim-and-filled method.

Figure S4 Funnel plot assessing publication bias on cognitive outcomes of post-stroke delirium

The adjusted pooled odd ratio (OR) was -3.15 with a 95% confidence interval ranging from -5.30 to -0.99, after simulation of 1 missing study using the trim-and-filled method.

The adjusted pooled standardized mean difference (SMD) was 5.19 with a 95% confidence interval ranging from 2.96-9.10, after simulation of 1 missing study using the trim-and-filled method.

Figure S5 Funnel plot assessing publication bias on dementia of post-stroke delirium

Funnel Plot of Standard Error by Log odds ratio

The adjusted pooled odd ratio (OR) was 3.73 with a 95% confidence interval ranging from 1.63-8.54, after simulation of 1 missing study using the trim-and-filled method.
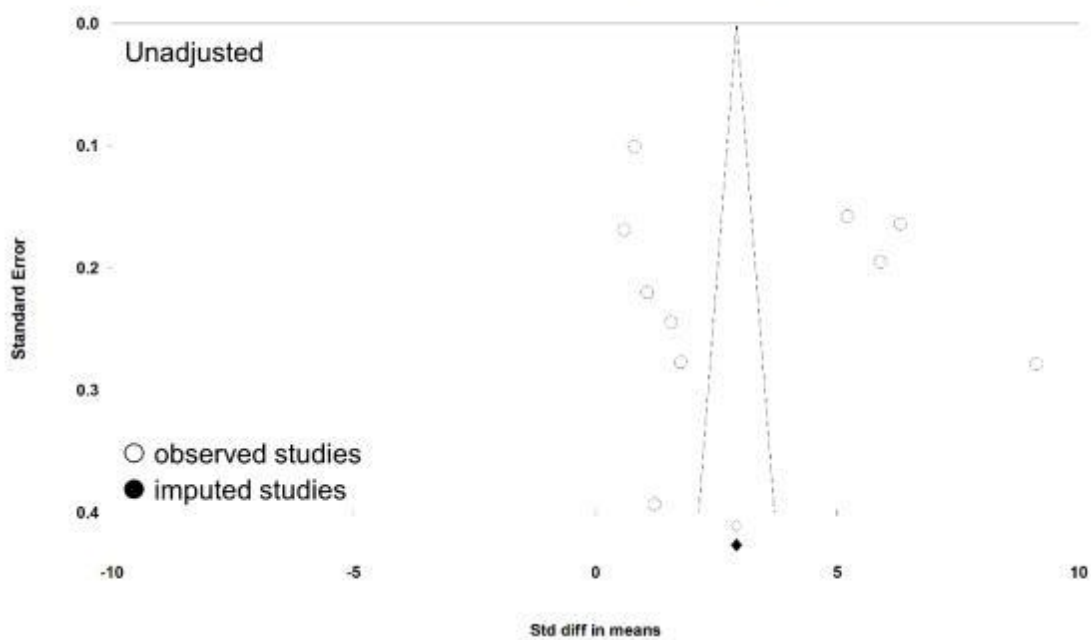
Figure S6 Funnel plot assessing publication bias on functional outcomes of post-stroke delirium

Funnel Plot of Standard Error by Log odds ratio

The adjusted pooled odd ratio (OR) was 3.35 with a 95% confidence interval ranging from 2.03-5.52, after simulation of 1 missing study using the trim-and-filled method.

Funnel Plot of Standard Error by Log odds ratio
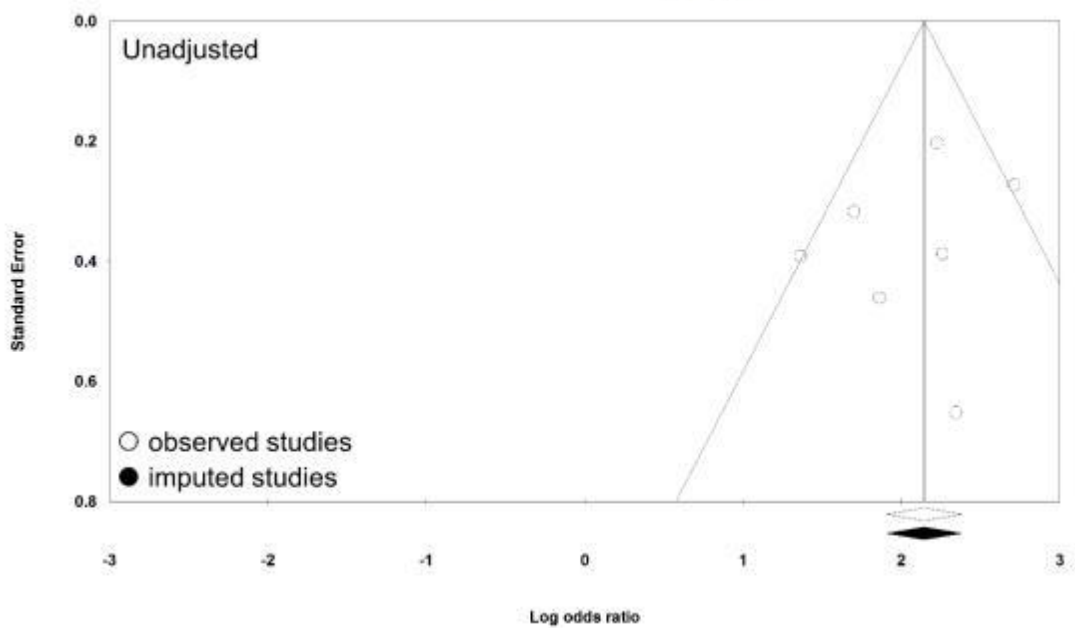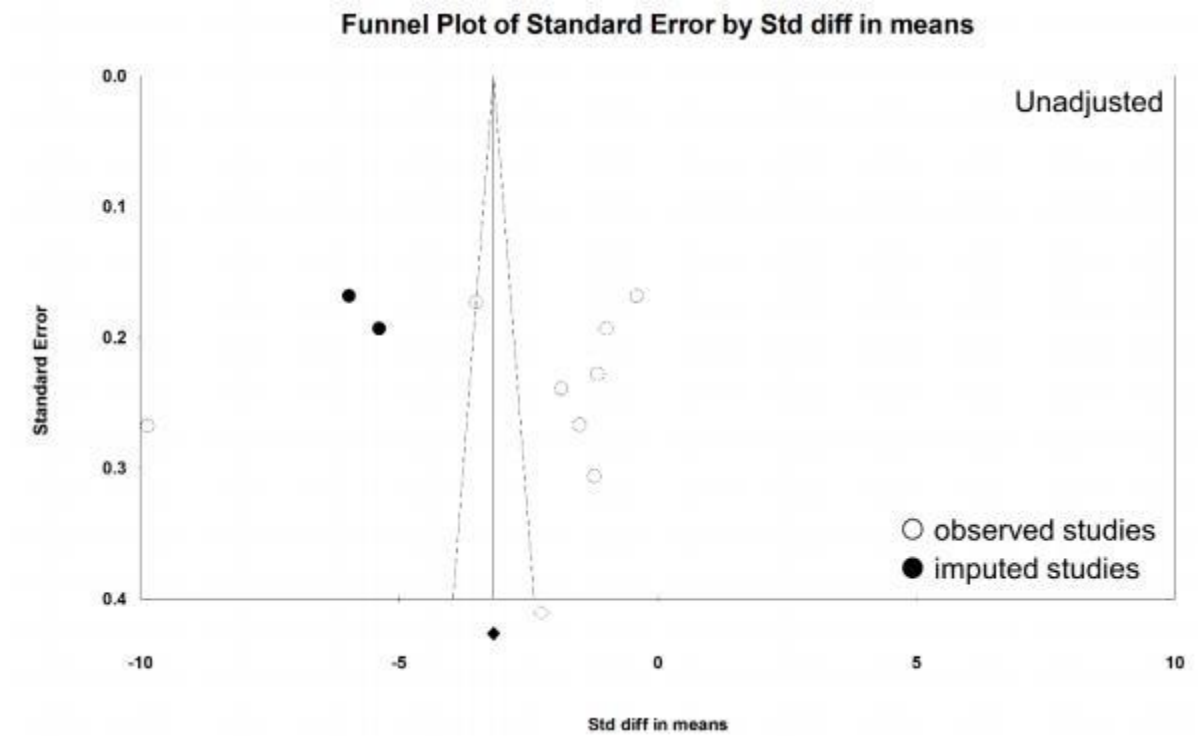
Funnel Plot of Standard Error by Std diff in means

Funnel Plot of Standard Error by Log odds ratio

Figure S7 Funnel plot assessing publication bias on life quality of post-stroke delirium

Funnel Plot of Standard Error by Std diff in means

The adjusted pooled standardized mean difference (SMD) was -3.19 with a 95% confidence interval ranging from -4.93 to -1.45, after simulation of 1 missing study using the trim-and-filled method.