## Systematic review of incidence, prevalence and case-fatality in 1997–2021

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Stroke is a major global cause of death and disability<sup>1</sup>. 70% of strokes occur in populations of low-middle income (LMIC); and the subsequent disease burden is greater than in populations of high-income countries <sup>1</sup>. Few epidemiological data exist for stroke in Latin America (LAC), composed primarily of  $LMIC^{2,3}$ .

The aim of this study was to determine epidemiological measures of incidence, prevalence, and 1-month case-fatality for stroke in LAC during 1997-2021.

A structured search was conducted to identify relevant references for prospective observational and cross-sectional studies in LAC populations from January 1997 to December 2021.

Background

Methods

9,242 records were screened, and 12 selected for analysis (Fig.1-2).

Meta-analysis was performed using random-effect model to obtain pooled estimates with 95% confidence intervals.

The heterogeneity across the studies was assessed through visual inspection of the forest plot and determining the Chi2 and I2 statistic. (Fig.3).

Studies quality was assessed according to the risk of bias criteria described in the Joanna Briggs Institute's guide.

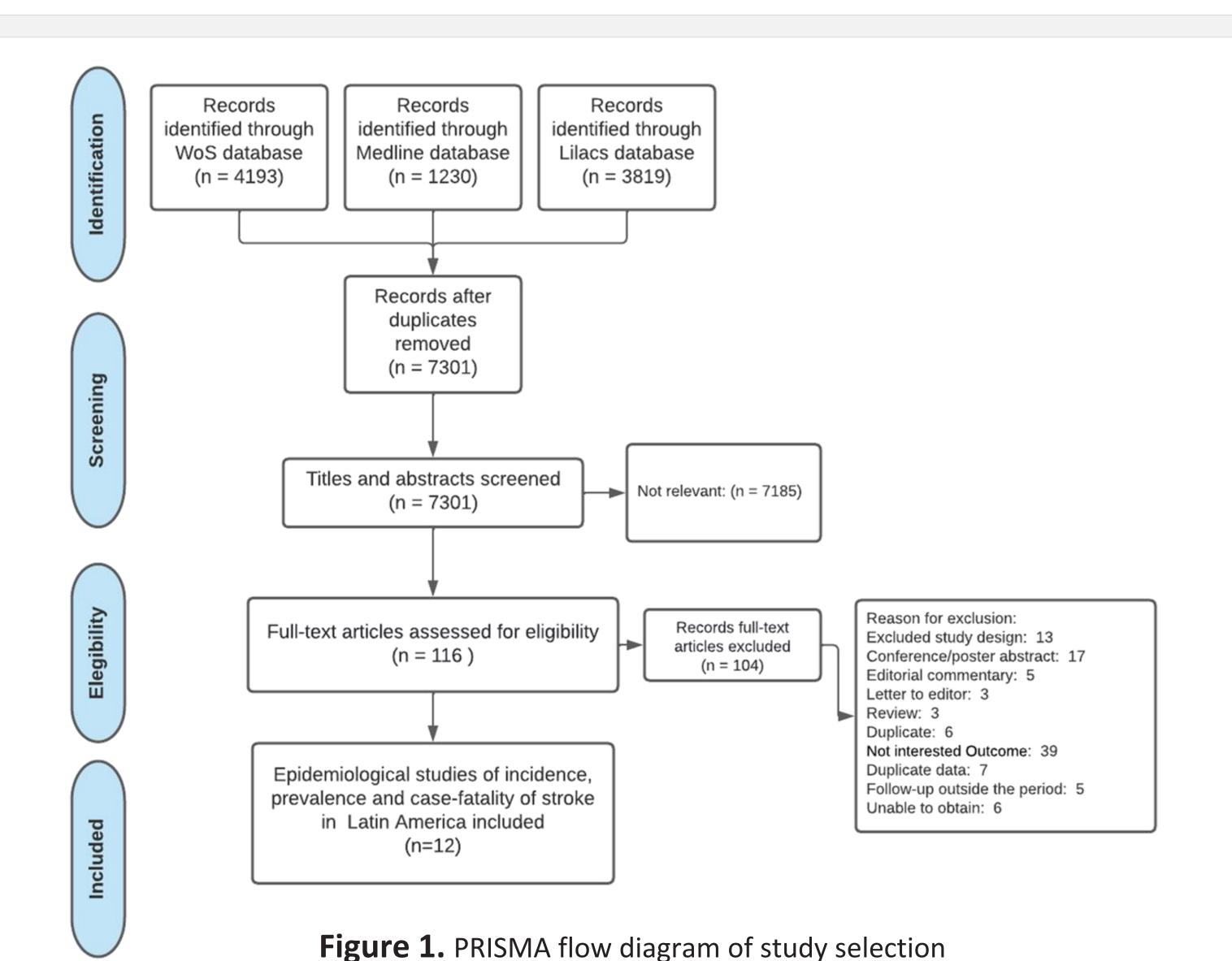




Figure 2. Location of studies assessing the incidence and prevalence of stroke in Latin America.
Latin America.

Study	Events	Total	Rate [95% CI]		SE (95%CI)	Weight
1	334	261182	127.9	[114.5-142.3]		10.01
2	352	268792	131.0	[117.6-145.4]	-	10.01
3	759	987619	76.9	[71.5-82.5]	*	10.32
3	922	1073318	85.9	[80.4-91.6]	*	10.32
4	81	76786	105.5	[83.8-131.1]		9.41
4	81	78890	102.7	[81.5-127.6]		9.46
5	292	396712	73.6	[65.4-82.5]	-	10.24
6	890	493464	180.4	[168.7-192.6]	-	→ 10.10
7	580	362259	160.1	[147.3-173.7]		10.05
7	544	370854	146.7	[134.6-159.5]		10.08
Total event	s 4835					
Total (95%	CI)	4369876	119.0	[95.9-142.1]	· · · · · ·	100.00
Heterogeni	tv: X <sup>2</sup> = 48	1.22 d.f.=9	(p = 0.000)	); I <sup>2</sup> = 98.129%	.001	
B. Overall o	rude prev	alence rate				
Study	Events	Total	Ra	te [95% CI]	SE (95%CI)	Weigh
8	41	2000	2050.0	[1475.0-2770.8]		20.02
9	246	5925	4151.9	[3658.2-4691.3]		20.14
10	193	3661	5271.7	[4570.2-6045.8]		19.86
11	157	22278	704.7	[599.1-823.5]	•	20.40
12	47	1478	3179.9	[2345.6-4206.4]	-	19.59
Total (95% CI)		35351	3060.1	[1090.6-4206.4]		100.00
Total events: 684					.05	•
Estimate of	between-	3.16429 , d. -study variar ity rate at 1	nce T <sup>2</sup> = 0.	.000); I <sup>2</sup> = 98.83% 0004		
Study	Events	Total	Case-fat	ality (%)[95% CI]	SE (95%CI)	Weigh
1	67	334	20.1	[15.9-24.8]		24.20
	15	81	18.5	[10.8-28.7]		8.64
4	15					9.05
4 4	14	81	17.3	[9.8-27.3]		5.0.
		81 292	17.3 23.3	[9.8-27.3] [18.6-28.6]		20.65
4	14			-	-	20.6
4 5	14 68 219	292	23.3	[18.6-28.6]		20.65 37.46
4 5 6	14 68 219 <b>CI)</b>	292 890	23.3 24.6	[18.6-28.6] [21.8-27.6]		
4 5 6 <b>Total (95%</b> Total ever	14 68 219 CI) nts: 383	292 890 <b>1678</b>	23.3 24.6 <b>22.0</b>	[18.6-28.6] [21.8-27.6]	0 .2 .4	20.65 37.46

A. Overall crude annual incidence rate

Figure 3. Latin American epidemiological measures; incidence, prevalence, and 1-month case-fatality for stroke.

This review contribute to our understanding regarding the burden caused by stroke in LAC. Large variation was detected in the stroke crude incidence and prevalence rates in the region.

Even though previous reports have considered LAC within the lowest stroke burden regions in the world,<sup>4</sup> this information contributes to evidencing wide differences between countries.

More research is required in middle low or low-income populations in LAC, given their low representation.

<sup>1.</sup> Feigin VL, Forouzanfar MH, Krishnamurthi R, et al. Global and regional burden of stroke during 1990–2010: findings from the Global Burden of Disease Study 2010. The Lancet 2014; 383: 245–255.

<sup>2.</sup> Saposnik G, Del Brutto OH. Stroke in South America: A Systematic Review of Incidence, Prevalence, and Stroke Subtypes. Stroke 2003; 34: 2103–2107.

<sup>3.</sup> Camargo ECS, Bacheschi LA, Massaro AR. Stroke in Latin America. Neuroimaging Clin N Am 2005; 15: 283–296. 4. Krishnamurthi RV, Ikeda T, Feigin VL. Global, Regional and Country-Specific Burden of Ischaemic Stroke, Intracerebral Haemorrhage and Subarachnoid Haemorrhage: A Systematic Analysis of the Global Burden of Disease Study 2017. Neuroepidemiology 2020; 54: 171–179.