

Systematic Review

Leukoaraiosis as a Predictor of Depression and Cognitive Impairment among Stroke Survivors: A Systematic Review

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Supplementary Table 1. Characteristics of the included studies focusing on depression.

	1st Author (Year)	Cerebrovascular Risk Factors (n) / Previous stroke	mNOS (0-8) [Selection (3); Comparability (2); Outcome (3)]
1	Guo (2022) [55]	<ul style="list-style-type: none"> Hypertension n=246, Diabetes mellitus n=135, Smoking n=135 Previous stroke n=0 	Selection (3) Comparability (2) Outcome (2) Total = 7
2	Jaroonpip atkul (2022) [54]	<ul style="list-style-type: none"> Smoking n=3, Hypertension n=11, Dyslipidemia n=12, Diabetes mellitus n=16, Ischemic heart disease n=6, Atrial fibrillation n=4 Previous stroke n=9 	Selection (3) Comparability (2) Outcome (3) Total = 8
3	Zhou (2022) [56]	<ul style="list-style-type: none"> Hypertension n=241, Diabetes mellitus n=80, Hyperlipidemia n=41, Atrial fibrillation n=33, Coronary heart disease n=6, Smoking n=90, Alcohol n=62 Previous stroke n=44 	Selection (3) Comparability (2) Outcome (2) Total = 7
4	Douven (2020) [44]	<ul style="list-style-type: none"> n/a n/a 	Selection (3) Comparability (2) Outcome (3) Total = 8
5	Bae (2019) [51]	<ul style="list-style-type: none"> Hypertension n=204, Diabetes mellitus n=112, Heart disease n=33, Hypercholesterolemia n=229 Previous stroke n=34 	Selection (3) Comparability (2) Outcome (3) Total = 8
6	Carnes- Vendrell (2019) [58]	<ul style="list-style-type: none"> Alcohol n=38, Smoking n=23, Diabetes mellitus n=30, Hypertension n=56, Hypercholesterolemia n=37, Atrial fibrillation n=5 Previous stroke n=14 	Selection (2) Comparability (2) Outcome (3) Total = 7
7	Pavlovic (2016) [59]	<ul style="list-style-type: none"> Hypertension n=264, Diabetes mellitus n=76, Hypercholesterolemia n=245, Smoking n=99, Coronary artery disease n=46, Peripheral artery disease n=19, atrial fibrillation n=13, Carotid stenosis >50% n=20 Previous stroke n/a 	Selection (3) Comparability (2) Outcome (3) Total = 8
8	Tanislav (2015) [46]	<ul style="list-style-type: none"> Hypertension n=961, Diabetes mellitus n=195, Hyperlipidemia n=637, Obesity n=459, Tobacco smoking n=1103, Cardiovascular disease n=165, Physical inactivity n=924, Obstructive sleep apnea n=72, Sleep ≤6 h at night 	Selection (2) Comparability (1) Outcome (2) Total = 5

time n=367, Regular alcohol consumption n=1017, Higher alcohol consumption n=650

- Previous stroke n=0

Notes. n/a = not available; n = number; mNOS = modified Newcastle-Ottawa Scale.

Supplementary Table 2. Characteristics of included studies focusing on cognition.

1 st Author (Year)	Cerebrovascular Risk Factors (n) / Previous stroke	mNOS (0-8) [Selection (3); Comparability (2); Outcome (3)]
1. Georgakis (2022) [68]	<ul style="list-style-type: none"> • Hypertension n=515, Diabetes mellitus n=131, Smoking n=155, Alcohol n=498, Atrial fibrillation n=133 • Previous stroke n=71 	Selection (3) Comparability (2) Outcome (3) Total = 8
2. Fruhwirth (2021) [100]	<ul style="list-style-type: none"> • Hyperlipidemia n=65, Hypertension n=61, Active smoking n=32, Diabetes mellitus n=12, Obesity n=10 • Previous stroke n/a 	Selection (3) Comparability (2) Outcome (3) Total = 8
3. Pasi (2021) [98]	<ul style="list-style-type: none"> • Smoking n=66, Alcohol n=321, Hypertension n=458, Diabetes n=121, coronary artery disease n=101, Atrial fibrillation n=99 • Previous stroke n=75 	Selection (3) Comparability (2) Outcome (3) Total = 8
4. Peng (2021) [79]	<ul style="list-style-type: none"> • Hypertension n=112, Smoking n=34, Diabetes mellitus n=48, Coronary heart disease n=32, Atrial fibrillation n=31 • Previous stroke n/a 	Selection (2) Comparability (1) Outcome (2) Total = 5
5. Sung (2021) [85]	<ul style="list-style-type: none"> • Hypertension n=90, Diabetes mellitus n=40, Hyperlipidemia n=88, Atrial fibrillation n=9 • Previous stroke n=0 	Selection (3) Comparability (2) Outcome (3) Total = 8
6. Appleton (2020) [67]	<ul style="list-style-type: none"> • Hypertension n=2607, Diabetes mellitus n=699, Atrial fibrillation n=762, Ischemic heart disease n=669, Peripheral artery disease n=117, Hyperlipidemia n=1098, Smoking n=945, Alcohol n=294 • Previous stroke: 1138 	Selection (2) Comparability (1) Outcome (3) Total = 6
7. Suda (2020) [80]	<ul style="list-style-type: none"> • Smoking n=40, Alcohol n=63, Hypertension n=78, Diabetes mellitus n=34, Dyslipidemia n=50, Ischemic heart disease n=7, Atrial fibrillation n=10 • Previous stroke n=17 	Selection (3) Comparability (2) Outcome (2) Total = 7
8. Yatawara (2020) [87] *	<ul style="list-style-type: none"> • n/a • n/a 	Selection (3) Comparability (2) Outcome (2) Total = 7

9.	Du (2019) [69]	<ul style="list-style-type: none"> Hypercholesterolemia n=13, Diabetes mellitus n=49, Hypertension n=90, Smoking n=57 Previous stroke n/a 	Selection (3) Comparability (2) Outcome (1) Total = 6
10.	Molad (2019) [84]	<ul style="list-style-type: none"> Smoking n=89, Diabetes mellitus n=109, Dyslipidemia n=211, Hypertension n=232 Previous stroke n=0 	Selection (2) Comparability (2) Outcome (3) Total = 7
11.	Liang (2019) [78]	<ul style="list-style-type: none"> Current or previous smoking n=157, Hypertension n=292, Hyperlipidemia n=184, Diabetes mellitus n=114, Ischemic heart disease n=19, Atrial fibrillation n=17 Previous stroke n=0 	Selection (3) Comparability (2) Outcome (3) Total = 7
12.	Zamboni (2019) [89]	<ul style="list-style-type: none"> Hypertension n=260, Diabetes mellitus n=55, Atrial fibrillation n=60, Hyperlipidemia n=163, Smoking n=159 n/a 	Selection (2) Comparability (2) Outcome (2) Total = 6
13.	Hawe (2018) [65]	<ul style="list-style-type: none"> n/a Previous stroke n=0 	Selection (2) Comparability (1) Outcome (3) Total = 6
14.	Puy (2018) [66]	<ul style="list-style-type: none"> Hypertension n=206, Diabetes mellitus n=70, Hypercholesterolemia n=152, Smoking n=81, Alcohol n=15 Previous stroke n=26 	Selection (3) Comparability (2) Outcome (3) Total = 8
15.	Yatawara (2018) [86] *	<ul style="list-style-type: none"> n/a n/a 	Selection (3) Comparability (2) Outcome (3) Total = 8
16.	Divya (2017) [94]	<ul style="list-style-type: none"> Diabetes mellitus n=28, Hypertension n=44, Dyslipidemia n=24, Smoking n=18 Previous stroke n/a 	Selection (2) Comparability (2) Outcome (3) Total = 7
17.	Cao (2017) [77]	<ul style="list-style-type: none"> Hypertension n=44, Diabetes mellitus n=14, Hypercholesterolemia n=9, Smoking n=15 Previous stroke n/a 	Selection (2) Comparability (2) Outcome (2) Total = 6
18.	Molad (2017) [95]	<ul style="list-style-type: none"> Hypertension n=149, Diabetes mellitus n=64, Dyslipidemia n=138, Ischemic heart disease n=30, Smoking n=57 Previous stroke n=0 	Selection (2) Comparability (2) Outcome (3) Total = 7

19.	Sivakumar (2017) [93]	<ul style="list-style-type: none"> Hypertension n=69, Diabetes mellitus n=21, Dyslipidemia n=57 Previous stroke n=29 	Selection (2) Comparability (2) Outcome (3) Total = 7
20.	Zhang (2017) [81]	<ul style="list-style-type: none"> Hypertension n=156, Diabetes n=111, Dyslipidemia n=53, Coronary artery disease n=13, Smoking n=90 Previous stroke n=0 	Selection (3) Comparability (1) Outcome (2) Total = 6
21.	Mandzia (2016) [92]	<ul style="list-style-type: none"> Hypertension n=79, Diabetes mellitus n=16, Previous myocardial infarction n=11, Smoking n=13, Atrial fibrillation n=8, Obstructive sleep apnea n=67 Previous stroke n/a 	Selection (3) Comparability (2) Outcome (3) Total = 8
22.	Moulin (2016) [97] **	<ul style="list-style-type: none"> Ischemic heart attack n=21, alcohol 65, Hypertension n=141, Diabetes n=31, Hypercholesterolemia n=69, Smoking n=42 Previous stroke n=33 	Selection (3) Comparability (2) Outcome (3) Total = 8
23.	Benedictus (2015) [97] **	<ul style="list-style-type: none"> Hypertension n=105, Diabetes mellitus n=23, Hypercholesterolemia n= 51, Smoking n=32, alcohol n=54, atrial fibrillation n=18 Previous stroke n=25 	Selection (3) Comparability (2) Outcome (3) Total = 8
24.	Kumral (2015) [62]	<ul style="list-style-type: none"> Hypertension n=7388, Current cigarette smoker n=1678, Diabetes mellitus n=2810, Coronary heart disease n=2015, Atrial fibrillation n=1645, Hyperhomocysteinemia n=1175, Hypercholesterolemia n=3481, Hypertriglyceridemia n=2240, Higher LDL cholesterol n=4339, Lower HDL cholesterol n=5755 Previous stroke n/a 	Selection (2) Comparability (1) Outcome (3) Total = 6
25.	Nakano (2015) [71]	<ul style="list-style-type: none"> Hypertension n=91, Dyslipidemia n=66, Diabetes n=5, Atrial fibrillation n=18, Ischemic heart disease n=12 Previous stroke n/a 	Selection (2) Comparability (2) Outcome (3) Total = 7

Notes. Studies from the same group or cohort are highlighted with * and **. n/a = not available; n = number; mNOS = modified Newcastle-Ottawa Scale.

Supplementary Table 3. Characteristics of included studies focusing on depression and cognition.

1 st Author (Year)	Cerebrovascular Risk Factors (n) / Previous stroke	mNOS (0-8)	
		[Selection (3); Comparability (2); Outcome (3)]	
1. Douven (2018) [42]	<ul style="list-style-type: none"> • n/a • n/a 	Selection (3)	
		Comparability (2)	
		Outcome (3)	
		Total = 8	

Notes. n/a = not available; n = number; mNOS = modified Newcastle-Ottawa Scale