

Table 5: Hypertension as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study name	Country	Ethnicity	Continent	Sample size	Odds ratio	Lower Limit	Upper Limit
Akpalu et al. (2022)	Nigeria & Ghana	Ghana Akan=22% Ga=4.1% Ewe=3.1% Nigeria Hausa=18.3% Yoruba=38% Others=14.5%	West Africa	3553	50.7	6.6	392.7
de Mast et al. (2016)	Tanzania	NR	East Africa	527	1.8	1.2	2.8
Fekih-Mrissa et al. (2013)	Tunisia	NR	North Africa	184	24	8.09	71.2
Saidi et al. 2007	Tunisia	NR	North Africa	498	6.288	1.57	25
Akpa et al. (2021)	Nigeria & Ghana	NR	West Africa	7066	15.47	10.84	22.07
Amu et al. (2005)	Nigeria	NR	West Africa	160	2.68	1.29	5.59
O'Donnell et al. (2016)	Mozambique, Nigeria, South Africa, Sudan, and Uganda	NR	Africa	1949	2.98	2.72	3.28
O'Donnell et al. (2010)	Mozambique, Nigeria, South Africa,	NR	Africa	646	4.96	3.11	7.91

	Sudan, and Uganda						
Sarfo et al. (2018)a	Ghana	NR	West Africa	3296	30.84	11.37	83.61
Sarfo et al. (2020)	Nigeria & Ghana	NR	West Africa	2944	66.63	20.78	213.72
Sarfo et al. (2022)	Nigeria & Ghana	Ghana Akan=21.6 % Gal/Adang e=3.8% Ewe=1.9% Others=2.0 % Nigeria Yoruba=36. 1% Igbo=4.2% Hausa=18.0 % Others=1.8 %	West Africa	2431	10.34	6.91	15.45
Walker, R. W., et al. (2013)	Tanzania	Zaramo=9. 4% Chagga=58 .5% Ndengerek o=7.2% Others=24. 9%	East-Africa	598	2.14	1.09	4.17
Owolabi & Agunloye (2013)	Nigeria	NR	West Africa	708	0.43	0.21	0.88
Chehaibi et al. (2013)	Tunisia	NR	North Africa	388	26.428 7	15.254	45.788 8
Saidi et al. (2010)	Tunisia	NR	North Africa	778	3	2.43	3.7

Namale et al. (2018)	Sub-Saharan Africa	NR	Sub-Saharan Africa	2003	1.66	0.78	3.55
Sarfo et al. (2018)b	Nigeria & Ghana	NR	West Africa	2118	7.98	5.24	12.17
Sarfo et al. (2018)c	Nigeria & Ghana	NR	West Africa	1080	0.8321	0.485	1.425

Table 6: Diabetes as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpalu et al. 2022	Nigeria & Ghana	Ghana Akan=22% Ga=4.1% Ewe=3.1% Nigeria Hausa=18.3% Yoruba=38% Others=14.5%	West Africa	3553	4.0	2.1	7.7
O'Donnell et al. 2016	Mozambique, Nigeria, South Africa, Sudan, and Uganda	NR	Africa	1949	2.98	2.72	3.28
Owolabi & Agunloye, 2013a	Nigeria	NR	West Africa	708	2.01	0.79	5.14
de Mast et al. (2016)	Tanzania	NR	East Africa	527	2.5	1.01	6.5
Fekih-Mrissa et al. (2013)	Tunisia	NR	North Africa	184	36.7	8.49	159
Akpa et al. (2021)	Nigeria & Ghana	NR	Nigeria	7066	2.79	2.22	3.50
Amu et al. (2005)	Nigeria	NR	West Africa	160	3.23	1.09	5.71
Sarfo et al. (2020)a	Nigeria & Ghana	NR	West Africa	2944	2.56	2.00	3.28
Sarfo et al. 2018a	Ghana	NR	West Africa	3296	5.80	2.05	16.36

Sarfo et al. 2020b	Nigeria & Ghana	NR	West Africa	1365	2.11	1.29	3.46
Sarfo et al. 2022	Nigeria & Ghana	Ghana Akan=21.6% Gal/Adange=3.8% Ewe=1.9% Others=2.0% Nigeria Yoruba=36.1% Igbo=4.2% Hausa=18.0%	West Africa	2431	3.44	2.60	4.56
Walker et al. 2013	Tanzania	Zaramo=9.4% Chagga=58.5% Ndengereko=7.2% Others=24.9%	East Africa	598	1.38	0.35	5.39
Namale et al. 2018	Sub-Saharan Africa	NR	Sub-Saharan Africa	2003	2.39	1.14	5.03
Sarfo et al. 2018c	Nigeria & Ghana	NR	West Africa	1080	8.68	5.50	13.71
Chehaibi et al. 2013	Tunisia	NR	North Africa	388	5.7543	3.4982	9.4655
Owolabi & Agunloye 2013b	Nigeria	NR	West Africa	252	4.4	0.14	13.63
Saidi et al. 2007	Tunisia	NR	North-Africa	498	0.851	0.498	1.454

Table 7: Alcohol as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpalu et al. 2022	Nigeria & Ghana	Ghana Akan=22% Ga=4.1% Ewe=3.1% Nigeria Hausa=18.3% Yoruba=38% Others=14.5%	West Africa	3553	0.6	0.4	0.9
O'Donnell et al. 2016	Mozambique, Nigeria, South Africa, Sudan, and Uganda	NR	Africa	1949	2.09	1.64	2.67
Owolabi & Agunloye, 2013a	Nigeria	NR	West Africa	708	7.7	0.26	22.7
Fekih-Mrissa et al. 2013	Tunisia	NR	North Africa	184	1.55	0.584	4.13
Namale et al. 2018a	Sub-Saharan Africa	NR	Sub-Saharan Africa	2003	1.26	0.68	2.35
Sarfo et al. 2018b	Nigeria & Ghana	NR	West Africa	2118	1.58	1.02	2.47
Sarfo et al. 2018c	Nigeria & Ghana	NR	West Africa	1080	1	0.3493	2.7235

Table 8: Smoking as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpalu et al. 2022	Nigeria & Ghana	Ghana Akan=22% Ga=4.1% Ewe=3.1% Nigeria Hausa=18.3% Yoruba=38% Others=14.5%	West Africa	3553	1.67	0.40	6.97
O'Donnell et al. 2016	Mozambique, Nigeria, South Africa, Sudan, and Uganda	NR	Africa	1949	1.67	1.49	1.87
de Mast et al. 2016	Tanzania	NR	East Africa	527	3.4	2.2	5.5
Fekih-Mrissa et al. 2013	Tunisia	NR	North Africa	184	0.681*	0.371	1.25
Saidi et al. 2007	Tunisia	NR	North Africa	498	1.716	0.169	17.397
Amu et al. 2005	Nigeria	NR	West Africa	160	10.01	1.23	81.06
Fekadu et al. 2019	Ethiopia	NR	East Africa	116	3	1.06	8.47
O'Donnell et al. 2010	Mozambique, Nigeria, South Africa, Sudan, and Uganda	NR	Africa	646	2.18	1.07	4.43
Sarfo et al. 2018a	Ghana	NR	West Africa	3296	3.8346	1.947	7.5516

Sarfo et al. 2018b	Nigeria & Ghana	NR	West Africa	2118	5.52	0.36	84.5
Sarfo et al. 2020	Nigeria & Ghana	NR	West Africa	2944	14.27	2.09	97.47
Walker et al. 2013	Tanzania	Zaramo=9.4% Chagga=58.5% Ndengereko=7.2% Others=24.9%	East Africa	598	2.72	1.49	4.96
Namale et al. 2018	sub-Saharan Africa	NR	sub-Saharan Africa	2003	1.02	0.59	1.79
Sarfo et al. 2018c	Nigeria & Ghana	NR	West Africa	1080	1.93	1.00	3.69

Table 9: Physical inactivity as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpalu et al. 2022	Nigeria & Ghana	Ghana Akan=22% Ga=4.1% Ewe=3.1% Nigeria Hausa=18.3% Yoruba=38% Others=14.5%	West Africa	3553	0.53	0.13	2.23
O'Donnell et al. 2016	Mozambique, Nigeria, South Africa, Sudan, and Uganda	NR	Africa	1949	0.60	0.52	0.70
Akpa et al. 2021	Nigeria & Ghana	NR	West Africa	7066	1.71	1.04	2.81
Amu et al. 2005	Nigeria	NR	West Africa	160	3.2	1.57	6.55
Sarfo et al. 2018a	Ghana	NR	West Africa	3296	1.6274	0.95	2.7877
Sarfo et al. 2018b	Nigeria & Ghana	NR	West Africa	2118	7.42	0.59	93.98

Table 10: Obesity as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpalu et al. 2022	Nigeria & Ghana	Ghana Akan=22% Ga=4.1% Ewe=3.1% Nigeria Hausa=18.3% Yoruba=38% Others=14.5%	West Africa	3553	1.22	0.57	2.57
Chehaibi et al. 2013	Tunisia	NR	North Africa	388	0.956	0.5942	1.5382
Saidi et al. 2007	Tunisia	NR	North Africa	498	1.107	0.803	1.526
Akpa et al. 2021	Nigeria & Ghana	NR	West Africa	7066	1.7	1.34	2.15
Amu, et al. 2005	Nigeria	NR	West Africa	160	8.53	2.02	13.80
Sarfo et al. 2018b	Nigeria & Ghana	NR	West Africa	2118	1.99	0.95	4.18
Sarfo et al. 2018c	Nigeria & Ghana	NR	West Africa	1080	1.14	0.88	1.47
O'Donnell et al. 2016	Mozambique, Nigeria, South Africa, Sudan, and Uganda	NR	Africa	1949	1.44	1.27	1.64
Owolabi & Agunloye, 2013	Nigeria	NR	West Africa	708	1.1568	0.7378	1.8136

Table 11: Added table salt as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpalu et al. 2022	Nigeria & Ghana	Ghana Akan=22% Ga=4.1% Ewe=3.1% Nigeria Hausa=18.3% Yoruba=38% Others=14.5%	West Africa	3553	1.23	0.36	4.13
Akpa et al. 2021	Nigeria & Ghana	NR	West Africa	7066	1.71	1.15	2.54
Sarfo et al. 2018b	Nigeria & Ghana	NR	West Africa	2118	1.23	0.36	4.13

Table 11: Stress as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpalu et al. 2022	Nigeria & Ghana	Ghana Akan=22% Ga=4.1% Ewe=3.1% Nigeria Hausa=18.3% Yoruba=38% Others=14.5%	West Africa	3553	1.67	1.08	2.57
Akpa et al. 2021	Nigeria & Ghana	NR	West Africa	7066	1.45	1.13	1.85
O'Donnell et al. 2016	Mozambique, Nigeria, South Africa, Sudan, and Uganda	NR	Africa	1949	2.20	1.78	2.72
Sarfo et al. 2018b	Nigeria & Ghana	NR	West Africa	2118	2.26	1.04	4.93
Sarfo et al. 2020b	Nigeria & Ghana	NR	West Africa	1365	1.68	1.03	2.77
Sarfo, et al. 2022	Nigeria & Ghana	Ghana Akan=21.6% Gal/Adange=3.8% Ewe=1.9% Others=2.0% Nigeria Yoruba=36.1% Igbo=4.2% Hausa=18.0% Others=1.8%	West Africa	2431	1.62	1.18	2.21

Table 12: Meat consumption as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpa et al. 2021	Nigeria & Ghana	NR	West Africa	7066	1.78	1.38	2.29
Sarfo et al. 2018b	Nigeria & Ghana	NR	West Africa	2118	1.5	0.52	4.35
Sarfo et al. 2020b	Nigeria & Ghana	NR	West Africa	1365	1.55	1.01	2.38
Sarfo et al. 2022	Nigeria & Ghana	Ghana Akan=21.6% Gal/Adange=3.8% Ewe=1.9% Others=2.0% Nigeria Yoruba=36.1% Igbo=4.2% Hausa=18.0% Others=1.8%	West Africa	2431	1.89	1.45	2.46

Table 13: Monthly income as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpalu et al. 2022	Nigeria & Ghana	Ghana Akan=22% Ga=4.1% Ewe=3.1% Nigeria Hausa=18.3% Yoruba=38% Others=14.5%	West Africa	3553	1.61	0.87	2.99
Akpa et al. 2021	Nigeria & Ghana	NR	West Africa	7066	1.59	1.30	1.95
Sarfo et al. 2018b	Nigeria & Ghana	NR	West Africa	2118	1.37	0.69	2.75
Sarfo et al. 2022	Nigeria & Ghana	Ghana Akan=21.6% Gal/Adange=3.8% Ewe=1.9% Others=2.0% Nigeria Yoruba=36.1% Igbo=4.2% Hausa=18.0% Others=1.8%	West Africa	2431	1.72	1.24	2.39
Sarfo et al. 2018c	Nigeria & Ghana	NR	West Africa	1080	1.55	1.11	2.17

Table 14: Age as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpalu et al. 2022	Nigeria & Ghana	Ghana Akan=22% Ga=4.1% Ewe=3.1% Nigeria Hausa=18.3% Yoruba=38% Others=14.5%	West Africa	3553	2.10	0.37	11.96
Owolabi & Agunloye, 2013	Nigeria & Ghana	NR	West Africa	708	3.97	1.99	7.9
Chehaibi et al. 2013	Tunisia	NR	North Africa	388	1.1909	0.7401	1.9161
Saidi et al. 2010	Tunisia	NR	North Africa	770	1.01	0.99	1.03
Saidi et al. 2007	Tunisia	NR	North Africa	498	0.98	0.894	1.075
Akpa et al. 2021	Nigeria & Ghana	NR	West Africa	7066	2.18	1.26	3.79
Sarfo et al. 2020a	Nigeria & Ghana	NR	West Africa	2944	0.97	0.83	1.14
Sarfo et al. 2018c	Nigeria & Ghana	NR	West Africa	1080	1.03	0.96	1.12

Table 15: Cardiac causes as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
O'Donnell et al. 2016	Mozambique, Nigeria, South Africa, Sudan, and Uganda	NR	Africa	1949	3.17	2.68	3.75
Owolabi & Agunloye, 2013	Nigeria	NR	West Africa	708	3.26	0.76	14.08
Akpa et al. 2021	Nigeria & Ghana	NR	West Africa	7066	1.7	1.18	2.45
Sarfo et al. 2018b	Nigeria & Ghana	NR	West Africa	2118	8.03	1.91	33.82
Sarfo et al. 2022	Nigeria & Ghana	Ghana Akan=21.6% Gal/Adange=3.8% Ewe=1.9% Others=2.0% Nigeria Yoruba=36.1% Igbo=4.2% Hausa=18.0% Others=1.8%	West Africa	2431	1.88	1.22	2.90
Walker et al. 2013	Tanzania	Zaramo=9.4% Chagga=58.5% Ndengereko=7.2% Others=24.9%	East Africa	598	7.39	2.42	22.53
Fekadu et al. 2019 (Heart failure)	Ethiopia	NR	East Africa	116	0.21	0.07	0.68
Sarfo et al. 2018c	Nigeria & Ghana	NR	West Africa	1080	13.97	1.74	112.11
Amu et al. 2005	Nigeria	NR	West Africa	160	2.74	0.60	26.16
Fekadu et al. 2019 (atrial fibrillation)	Ethiopia	NR	East Africa	116	0.08	0.01	0.68

Table 16: Dyslipidemia as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpalu et al. 2022	Nigeria & Ghana	Ghana Akan=22% Ga=4.1% Ewe=3.1% Nigeria Hausa=18.3% Yoruba=38% Others=14.5%	West Africa	3553	2.8	1.3	6.2
Akpa et al. 2021	Nigeria & Ghana	NR	West Africa	7066	3.37	2.67	4.26
Sarfo et al. 2018b	Nigeria & Ghana	NR	West Africa	2118	2.75	1.34	5.61
Sarfo et al. 2020b	Nigeria & Ghana	NR	West Africa	2118	2.95	1.84	4.74
Sarfo et al. 2022	Nigeria & Ghana	Ghana Akan=21.6% Gal/Adange=3.8% Ewe=1.9% Others=2.0% Nigeria Yoruba=36.1% Igbo=4.2% Hausa=18.0% Others=1.8%	West Africa	2431	5.16	3.78	7.03
Sarfo et al. 2018c	Nigeria & Ghana	NR	West Africa	1080	1.27	0.88	1.83

Table 17: HIV as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Walker et al. 2013	Tanzania	Zaramo=9.4% Chagga=58.5% Ndengereko=7.2% Others=24.9%	East Africa	598	5.61	2.41	13.09
Namale et al. 2018	Sub-Saharan Africa	NR	sub-Saharan Africa	2003	2.46	1.59	3.81
Sarfo et al. 2018c	Nigeria & Ghana	NR	West Africa	1080	0.8	0.37	1.73

Table 18: Gender as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Owolabi & Agunloye, 2013	Nigeria & Ghana	NR	West Africa	708	1.41	0.71	2.80
Saidi et al. 2010	Tunisia	NR	North Africa	778	0.88	0.53	1.44
Saidi et al. 2007	Tunisia	NR	North Africa	498	0.495	0.0049	4.965
Sarfo et al. 2018a	Ghana	NR	West Africa	3296	1.9948	1.1411	3.4871
Sarfo et al. 2020a	Nigeria & Ghana	NR	West Africa	2944	0.92	0.72	1.18
Sarfo et al. 2018c	Nigeria & Ghana	NR	West Africa	1080	1.43	0.99	2.05

Table 19: Education as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpa et al. 2021	Nigeria & Ghana	NR	West Africa	7066	1.37	1.04	1.82
Chang et al. 2002	Kenya, Zambia, Zimbabwe)	NR	East and Southern Africa	772	0.55 0.79	0.23 0.32	1.31 1.93
Sarfo et al. 2018b	Nigeria & Ghana	NR	West Africa	2118	3.68	1.01	13.41
Sarfo et al. 2018c	Nigeria & Ghana	NR	West Africa	1080	1.13	0.76	1.68

Table 20: Family history of cardiovascular disease (CVD) as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpalu et al. 2022	Nigeria & Ghana	Ghana Akan=22% Ga=4.1% Ewe=3.1% Nigeria Hausa=18.3% Yoruba=38% Others=14.5%	West Africa	3553	2.12	1.1	4.2
Akpa et al. 2021	Nigeria & Ghana	NR	West Africa	7066	1.5	1.20	1.86
Sarfo et al. 2018b	Nigeria & Ghana	NR	West Africa	2118	1.27	0.60	2.70
Sarfo et al. 2020b	Nigeria & Ghana	NR	West Africa	1365	2.22	1.41	3.50

Table 21: Low consumption of green vegetable as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpa et al. 2021	Nigeria & Ghana	NR	West Africa	7066	2.66	2.10	3.38
Sarfo et al. 2018b	Nigeria & Ghana	NR	West Africa	2118	2.31	1.02	5.22
Sarfo et al. 2020b	Nigeria & Ghana	NR	West Africa	1365	3.61	2.07	6.31
Sarfo et al. 2022	Nigeria & Ghana	Ghana Akan=21.6% Gal/Adange=3.8% Ewe=1.9% Others=2.0% Nigeria Yoruba=36.1% Igbo=4.2% Hausa=18.0% Others=1.8%	West Africa	2431	1.89	1.45	2.46

Table 22: Hyperhomocysteinemia as a risk factor of stroke in Africa: evidence from cohort and case control studies

Study	Country	Ethnicity	Region	Sample size	Odds ratio	Lower limit	Upper limit
Akpalu & Nyame, 2009	Ghana	NR	West Africa	3553	73.8317	33.6112	162.1816
Okubadejo et al. 2008	Nigeria	NR	West Africa	115	0.77	0.27	2.12
Fekih-Mrissa et al. 2013	Tunisia	NR	North Africa	184	109	14.5	818