



## Article

# Ethnicity and Other Determinants of Quality of Functional Outcome in Acute Ischemic Stroke: The ENCHANTED Trial

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## **Supplemental Material**

This supplemental material formed part of the original submission and has been peer reviewed.

We post it as supplied by the authors.

Supplement to: Chen X, Wang X, Delcourt C, et al. Ethnicity and other determinants of quality of functional outcome in acute ischemic stroke: the ENCHANTED trial

**Table I. Characteristics of included and excluded patients**

<b>Characteristics</b>	<b>Excluded (n=541)</b>	<b>Included (n=4016)</b>	<b>P value</b>
Age (years)	71.4 (12.4)	66.1 (12.6)	<0.0001
Female	214/541 (39.6)	1508/4016 (37.6)	0.370
Non-Asian	250/541 (46.2)	1324/4016 (33.0)	<0.0001
Asian	291/541 (53.8)	2692/4016 (67.0)	<0.0001
Chinese	183/291 (62.9)	2079/2692 (77.2)	<0.0001
Other Asian	108/291 (37.1)	613/2692 (22.8)	<0.0001
Clinical features			
Systolic BP (mmHg)	152.2 (20.5)	153.8 (18.6)	0.284
Diastolic BP (mmHg)	85.7 (13.5)	86.3 (12.6)	0.285
Heart rate (beats per minute)	81.8 (17.0)	78.9 (15.1)	0.0004
NIHSS score	14 (8-20)	7 (5-12)	<0.0001
GCS score	14 (11-15)	15 (14-15)	<0.0001
Medical History			
Hypertension	375/534 (70.2)	2562/4012 (63.9)	0.004
Previous stroke	116/541 (21.4)	707/4016 (17.6)	0.032
Coronary artery disease	113/534 (21.2)	531/4012 (13.2)	<0.0001
Atrial fibrillation	175/532 (32.9)	633/4010 (15.8)	<0.0001
Diabetes mellitus	131/534 (24.5)	797/4012 (19.9)	0.014
Hypercholesterolemia	101/534 (18.9)	606/4012 (15.1)	0.026
Current smoker	99/531 (18.6)	909/4009 (22.7)	0.040
Pre-stroke function (mRS)			
No symptoms	387/533 (72.6)	3391/4010 (84.6)	<0.0001
No significant disability	146/533 (27.4)	619/4010 (15.4)	<0.0001
Medication at time of admission			
Antihypertensive agents	285/534 (53.4)	1790/4012 (44.6)	0.0001
Warfarin anticoagulation	25/534 (4.7)	76/4009 (1.9)	0.0002
Aspirin or other anti-platelet agents	151/534 (28.3)	836/4009 (20.9)	0.0001
Glucose-lowering agents	82/534 (15.4)	502/4009 (12.5)	0.073
Lipid-lowering agents	124/534 (23.2)	722/4008 (18.0)	0.005
Final diagnosis at time of hospital separation			
Large vessel atheromatous etiology	181/471 (38.4)	1623/4007 (40.5)	0.399
Small vessel disease	32/471 (6.8)	1025/4007 (25.6)	<0.0001
Cardio-emboli	144/471 (30.6)	656/4007 (16.4)	<0.0001
Other	101/ 71 (21.4)	600/4007 (15.0)	0.0005
Randomized to low-dose alteplase treatment	201/423 (47.5)	1449/2863 (50.6)	0.252
Randomized to intensive BP lowering treatment	115/215 (53.5)	966/1981 (48.8)	0.197
Proxy-respondents	58/71 (81.7)	1502/4015 (37.4)	<0.0001

Data are n (%), mean (SD), or median (IQR). P values are based on Chi-square, t test, or Wilcoxon signed-rank test

BP denotes blood pressure, GCS Glasgow coma scale, mRS modified Rankin Scale, NIHSS National Institutes of Health Stroke Scale

**Table II: Determinants of poor health-related quality of life in thrombolized patients with acute ischemic stroke, comparing Chinese with non-Chinese**

Variables	EQ-5D utility score*		Univariable		Multivariable	
	>0.7 (2860)	≤0.7 (1156)	OR	P	OR	P
Age (years) †	64.6 (12.6)	69.6 (12.0)	1.39 (1.31-1.47)	<0.0001	<b>1.21 (1.14-1.29)†</b>	<b>&lt;0.0001</b>
Female	1005/2860 (35.1)	503/1156 (43.5)	1.42 (1.24-1.63)	<0.0001		
<b>Non-Chinese (vs Chinese)</b>	<b>1240/2860 (43.4)</b>	<b>697/1156 (60.3)</b>	<b>1.98 (1.73-2.28)</b>	<b>&lt;0.0001</b>	<b>2.25 (1.91-2.65)</b>	<b>&lt;0.0001</b>
Clinical features						
Systolic BP (mmHg)	153.6 (18.5)	154.2 (18.8)	1.00 (1.00-1.01)	0.324		
NIHSS score	6 (4-10)	11 (6-16)	1.12 (1.11-1.14)	<0.0001	<b>1.10 (1.09-1.12)</b>	<b>&lt;0.0001</b>
Medical History						
Hypertension	1799/2857 (63.0)	763/1155 (66.1)	1.15 (0.99-1.32)	0.065		
Previous stroke	487/2860 (17.0)	220/1156 (19.0)	1.15 (0.96-1.37)	0.905		
Coronary artery disease	347/2857(12.2)	184/1155 (15.9)	1.37 (1.13-1.66)	0.001		
Atrial fibrillation	381/2855 (13.4)	252/1155 (21.8)	1.81 (1.52-2.16)	<0.0001		
Diabetes mellitus	520/2857 (18.2)	277/1155 (24.0)	1.42 (1.20-1.67)	<0.0001	<b>1.44 (1.20-1.73)</b>	<b>&lt;0.0001</b>
Hypercholesterolemia	372/2857 (13.0)	234/1155 (20.3)	1.70 (1.42-2.03)	<0.0001		
Pre-stroke mRS=1	342/2857 (12.0)	277/1153 (24.0)	2.33 (1.95-2.77)	<0.0001	<b>1.69 (1.39-2.05)</b>	<b>&lt;0.0001</b>
Medication at time of admission						
Antihypertensive agents	1207/2857 (42.3)	583/1155 (50.5)	1.39 (1.22-1.60)	<0.0001		
Warfarin anticoagulation	46/2856 (1.6)	30/1153 (2.6)	1.63 (1.03-2.60)	0.039		
Aspirin or other antiplatelet agents	524/2856 (18.4)	312/1153 (27.1)	1.65 (1.41-1.94)	<0.0001		
Glucose-lowering agents	322/2856 (11.3)	180/1153 (15.6)	1.46 (1.20-1.77)	0.0002		
Lipid-lowering agents	451/2855 (15.8)	271/1153 (23.5)	1.64 (1.38-1.94)	<0.0001		
Final diagnosis at time of hospital separation						

Variables	EQ-5D utility score*		Univariable		Multivariable	
	>0.7 (2860)	≤0.7 (1156)	OR	P	OR	P
Large vessel atheromatous etiology	1125/2853 (39.4)	498/1154 (43.2)	1.17 (1.02-1.34)	0.030	<b>1.45 (1.23-1.70)</b>	<b>&lt;0.0001</b>
Small vessel disease	836/2853 (29.3)	189/1154 (16.4)	0.47 (0.40-0.56)	<0.0001		
Cardio-emboli	404/2853 (14.2)	252/1154 (21.8)	1.69 (1.42-2.02)	<0.0001		
Others	405/2853 (14.2)	195/1154 (16.9)	1.23 (1.02-1.48)	0.030		
Randomized to low-dose alteplase treatment	998/1994 (50.1)	451/869 (51.9)	0.93 (0.79-1.09)	0.363		
Randomized to intensive BP lowering treatment	732/1477 (49.6)	234/504 (46.4)	1.13 (0.93-1.39)	0.225		
Proxy-respondents	861/2859 (30.1)	641/1156 (55.5)	2.89 (2.51-3.33)	<0.0001	<b>2.35 (2.01-2.74)</b>	<b>&lt;0.0001</b>

Data are n (%), mean (SD), median (IQR), or odds ratio (95% confidence interval). P values are based on Chi-square, T test, Wilcoxon signed-rank test, simple or multiple logistic regression.

BP denotes blood pressure, EQ-5D EuroQol 5-dimensional questionnaire, mRS modified Rankin scale, NIHSS National Institutes of Health Stroke Scale, OR odds ratio

\*Good (above) and poor (below) mean scores on the EQ-5D

†per 10-year increase

**Table III: Determinants of poor health-related quality of life in thrombolized patients with acute ischemic stroke, comparing non-Asian vs. Chinese**

Variables	EQ-5D utility score*		Univariable		Multivariable	
	>0.7 (2460)	≤0.7 (943)	OR	P	OR	P
Age (years) †	65.1 (12.7)	70.3 (12.1)	1.41 (1.32-1.50)	<0.0001	<b>1.16 (1.08-1.25)†</b>	<b>&lt;0.0001</b>
Female	871/2460 (35.4)	421/943 (44.6)	1.47 (1.26-1.71)	<0.0001		
<b>Non-Asian (vs. Chinese)</b>	840/2460 (34.2)	484/943 (51.3)	2.03 (1.75-2.37)	<0.0001	<b>2.21 (1.85-2.64)</b>	<b>&lt;0.0001</b>
Clinical features						
Systolic BP (mmHg)	154.8 (17.6)	155.5 (18.1)	1.00 (1.00-1.01)	0.312		
NIHSS score	6 (4-10)	10 (6-16)	1.12 (1.11-1.14)	<0.0001	<b>1.11 (1.09-1.13)</b>	<b>&lt;0.0001</b>
Medical History						
Hypertension	1559/2457 (63.5)	635/942 (67.4)	1.19 (1.02-1.40)	0.031		
Previous stroke	435/2460 (17.7)	193/943 (20.5)	1.20 (0.99-1.45)	0.061		
Coronary artery disease	317/2457(12.9)	164/942 (17.4)	1.42 (1.16-1.75)	0.001		
Atrial fibrillation	317/2455(12.9)	204/942 (21.7)	1.87 (1.54-2.27)	<0.0001		
Diabetes mellitus	456/2457(18.6)	236/942 (25.1)	1.47 (1.23-1.76)	<0.0001	<b>1.50 (1.23-1.84)</b>	<b>&lt;0.0001</b>
Hypercholesterolemia	329/2457 (13.4)	204/942 (21.7)	1.79 (1.47-2.17)	<0.0001		
Pre-stroke mRS=1	319/2457 (13.0)	251/940 (26.7)	2.44 (2.03-2.94)	<0.0001	<b>1.57 (1.27-1.93)</b>	<b>&lt;0.0001</b>
Medication at time of admission						
Antihypertensive agents	1064/2457 (43.3)	489/942 (51.9)	1.41 (1.22-1.64)	<0.0001		
Warfarin anticoagulation	37/2457 (1.5)	21/941 (2.2)	1.49 (0.87-2.56)	0.146		
Aspirin or other antiplatelet agents	446/2457 (18.2)	264/941 (28.1)	1.76 (1.48-2.10)	<0.0001		
Glucose-lowering agents	287/2457 (11.7)	155/941 (16.5)	1.49 (1.21-1.84)	0.0002		
Lipid-lowering agents	372/2456 (15.2)	219/941 (23.3)	1.70 (1.41-2.05)	<0.0001		
Final diagnosis at time of hospital separation						

Variables	EQ-5D utility score*		Univariable		Multivariable	
	>0.7 (2460)	≤0.7 (943)	OR	P	OR	P
Large vessel atheromatous etiology	1008/2453 (41.1)	414/941 (44.0)	1.13 (0.97-1.31)	0.125		
Small vessel disease	696/2453 (28.4)	133/941 (14.1)	0.42 (0.34-0.51)	<0.0001		
Cardio-emboli	329/2453 (13.4)	199/941 (21.2)	1.73 (1.43-2.10)	<0.0001		
Others	355/2453 (14.5)	175/941 (18.6)	1.35 (1.11-1.65)	0.003		
Randomized to low-dose alteplase treatment	846/1684 (50.2)	349/685 (51.0)	1.03 (0.86-1.23)	0.754		
Randomized to intensive BP lowering treatment	680/1370 (49.6)	219/466 (47.0)	0.90 (0.73-1.11)	0.325		
Proxy-respondents	705/2459 (28.7)	539/943 (57.2)	3.32 (2.84-3.88)	<0.0001	<b>2.84 (2.38-3.37)</b>	<b>&lt;0.0001</b>

Data are n (%), mean (SD), median (IQR), or odds ratio (95% confidence interval). P values are based on Chi-square, T test, Wilcoxon signed-rank test, simple or multiple logistic regression.

BP denotes blood pressure, EQ-5D EuroQol 5-dimensional questionnaire, mRS modified Rankin scale, NIHSS National Institutes of Health Stroke Scale, OR odds ratio

\*Good (above) and poor (below) mean scores on the EQ-5D

†per 10-year increase

**Table IV: Determinants of poor health-related quality of life in thrombolized patients with acute ischemic stroke, comparing other Asian vs. Chinese**

Variables	EQ-5D utility score*		Univariable		Multivariable	
	>0.7 (2020)	≤0.7 (672)	OR	P	OR	P
Age (years) †	63.0 (11.7)	67.6 (11.0)	1.43 (1.32-1.55)	<0.0001	<b>1.33 (1.22-1.45)†</b>	<b>&lt;0.0001</b>
Female	657/2020 (32.5)	275/672 (40.9)	1.44 (1.20-1.72)	<0.0001		
<b>Other Asian (vs. Chinese)</b>	400/2020 (19.8)	213/672 (31.7)	1.88 (1.55-2.29)	<0.0001	<b>2.19 (1.75-2.74)</b>	<b>&lt;0.0001</b>
Clinical features						
Systolic BP (mmHg)	153.3 (18.4)	153.4 (18.5)	1.00 (1.00-1.01)	0.914		
NIHSS score	7 (4-11)	12 (8-16)	1.14 (1.12-1.16)	<0.0001	<b>1.12 (1.10-1.14)</b>	<b>&lt;0.0001</b>
Medical History						
Hypertension	1259/2017 (62.4)	433/671 (64.5)	1.10 (0.91-1.31)	0.327		
Previous stroke	360/2020 (17.8)	141/672 (21.0)	1.22 (0.99-1.52)	0.069		
Coronary artery disease	229/2017(11.4)	111/671 (16.5)	1.55 (1.21-1.98)	0.001		
Atrial fibrillation	237/2017(11.8)	146/671 (21.8)	2.09 (1.66-2.62)	<0.0001		
Diabetes mellitus	376/2017(18.6)	158/671 (23.6)	1.34 (1.09-1.66)	0.006	<b>1.38 (1.09-1.75)</b>	<b>0.007</b>
Hypercholesterolemia	111/2017 (5.5)	65/671 (9.7)	1.84 (1.34-2.54)	0.0002		
Pre-stroke mRS=1	156/2017 (7.7)	103/670 (15.4)	2.17 (1.66-2.83)	<0.0001	<b>1.74 (1.29-2.33)</b>	<b>0.0003</b>
Medication at time of admission						
Antihypertensive agents	723/2017 (35.9)	291/671 (43.4)	1.37 (1.15-1.64)	0.001		
Warfarin anticoagulation	22/2016 (1.1)	18/670 (2.7)	2.50 (1.34-4.70)	0.004		
Aspirin or other antiplatelet agents	261/2016 (13.0)	124/670 (18.5)	1.53 (1.21-1.93)	0.0004		
Glucose-lowering agents	208/2016 (10.3)	90/670 (13.4)	1.35 (1.04-1.76)	0.027		
Lipid-lowering agents	166/2016 (8.2)	91/670 (13.6)	1.75 (1.34-2.30)	<0.0001		
Final diagnosis at time of hospital separation						



Variables	EQ-5D utility score*		Univariable		Multivariable	
	>0.7 (2020)	≤0.7 (672)	OR	P	OR	P
Large vessel atheromatous etiology	964/2014 (47.9)	384/671 (57.2)	1.46 (1.22-1.74)	<0.0001	<b>1.62 (1.32-1.98)</b>	<b>&lt;0.0001</b>
Small vessel disease	676/2014 (33.6)	119/671 (17.7)	0.43 (0.34-0.53)	<0.0001		
Cardio-emboli	204/2014 (10.1)	122/671 (18.2)	1.97 (1.55-2.52)	<0.0001		
Others	135/2014 (6.7)	46/671 (6.9)	1.03 (0.72-1.45)	0.891		
Randomized to low-dose alteplase treatment	668/1353 (49.4)	263/496 (53.0)	1.16 (0.94-1.42)	0.164		
Randomized to intensive BP lowering treatment	579/1161 (49.9)	147/324 (45.4)	0.84 (0.65-1.07)	0.152		
Proxy-respondents	679/2019 (33.6)	416/672 (61.9)	3.21 (2.68-3.84)	<0.0001	<b>2.44 (2.01-2.98)</b>	<b>&lt;0.0001</b>

Data are n (%), mean (SD), median (IQR), or odds ratio (95% confidence interval). P values are based on Chi-square, T test, Wilcoxon signed-rank test, simple or multiple logistic regression.

BP denotes blood pressure, EQ-5D EuroQol 5-dimensional questionnaire, mRS modified Rankin scale, NIHSS National Institutes of Health Stroke Scale, OR odds ratio

\*Good (above) and poor (below) mean scores on the EQ-5D

†per 10-year increase

**Table V: Determinants of poor health-related quality of life in thrombolized patients with acute ischemic stroke, comparing non-Asian vs. other Asian**

Variables	EQ-5D utility score*		Univariable		Multivariable	
	>0.7 (1240)	≤0.7 (697)	OR	P	OR	P
Age (years) †	66.4 (13.3)	70.5 (12.6)	1.28 (1.19-1.38)	<0.0001	<b>1.16 (1.07-1.26)†</b>	<b>0.0003</b>
Female	482/1240 (38.9)	310/697 (44.5)	1.26 (1.04-1.52)	0.016		
<b>Non-Asian (vs. other Asian)</b>	840/1240 (67.7)	484/697 (69.4)	1.08 (0.89-1.32)	0.441		
Clinical features						
Systolic BP (mmHg)	151.7 (20.3)	153.4 (19.9)	1.00 (1.00-1.01)	0.0823		
NIHSS score	7 (4-10)	10 (6-15)	1.10 (1.08-1.12)	<0.0001	<b>1.08 (1.06-1.10)</b>	<b>&lt;0.0001</b>
Medical History						
Hypertension	780/1240 (62.9)	458/697 (65.7)	1.13 (0.93-1.37)	0.217		
Previous stroke	179/1240 (14.4)	106/697 (15.2)	1.06 (0.82-1.38)	0.643		
Coronary artery disease	148/1240 (11.9)	93/697 (13.3)	1.14 (0.86-1.50)	0.368		
Atrial fibrillation	208/1238 (16.8)	154/697 (22.1)	1.40 (1.11-1.77)	0.004		
Diabetes mellitus	208/1240 (16.8)	160/697 (23.0)	1.48 (1.17-1.86)	0.001	<b>1.43 (1.12-1.83)</b>	<b>0.004</b>
Hypercholesterolemia	304/1240 (24.5)	199/697 (28.6)	1.23 (1.00-1.52)	0.052		
Pre-stroke mRS=1	209/1240 (16.9)	200/696 (28.7)	1.99 (1.59-2.48)	<0.0001	<b>1.75 (1.37-2.22)</b>	<b>&lt;0.0001</b>
Medication at time of admission						
Antihypertensive agents	627/1240 (50.6)	386/697 (55.4)	1.21 (1.01-1.46)	0.042		
Warfarin anticoagulation	33/1239 (2.7)	21/695 (3.0)	1.14 (0.65-1.98)	0.647		
Aspirin or other antiplatelet agents	341/1239 (27.5)	236/695 (34.0)	1.35 (1.11-1.66)	0.003		
Glucose-lowering agents	149/1239 (12.0)	115/695 (16.6)	1.45 (1.12-1.89)	0.006		
Lipid-lowering agents	364/1238 (29.4)	232/695 (33.4)	1.20 (0.99-1.47)	0.069		
Final diagnosis at time of hospital separation						

Variables	EQ-5D utility score*		Univariable		Multivariable	
	>0.7 (1240)	≤0.7 (697)	OR	P	OR	P
Large vessel atheromatous etiology	278/1239 (22.4)	198/696 (28.5)	1.37 (1.11-1.70)	0.003	<b>1.26 (1.01-1.58)</b>	<b>0.042</b>
Small vessel disease	300/1239 (24.2)	126/696 (18.1)	0.69 (0.55-0.87)	0.002		
Cardio-emboli	275/1239 (22.2)	183/696 (26.3)	1.25 (1.01-1.55)	0.042		
Others	320/1239 (25.8)	169/696 (24.3)	0.92 (0.74-1.14)	0.453		
Randomized to low-dose alteplase treatment	482/951 (50.7)	290/557 (52.1)	1.06 (0.86-1.30)	0.605		
Randomized to intensive BP lowering treatment	205/423 (48.5)	102/218 (46.8)	0.94 (0.67-1.30)	0.688		
Proxy-respondents	338/1240 (27.3)	327/697 (46.9)	2.36 (1.94-2.86)	<0.0001	<b>1.75 (1.42-2.16)</b>	<b>&lt;0.0001</b>

Data are n (%), mean (SD), median (IQR), or odds ratio (95% confidence interval). P values are based on Chi-square, T test, Wilcoxon signed-rank test, simple or multiple logistic regression.

BP denotes blood pressure, EQ-5D EuroQol 5-dimensional questionnaire, mRS modified Rankin scale, NIHSS National Institutes of Health Stroke Scale, OR odds ratio

\*Good (above) and poor (below) mean scores on the EQ-5D

†per 10-year increase

**Table VI. Associations with poor HRQoL by dimension (some/moderate or severe problems vs. no problem)**

Variables	Mobility affected 1682(41.9%)	Self-care affected 1299(32.4%)	Usual activity affected 1792(44.6%)	Pain/discomfort affected 1046(26.1%)	Anxiety/depression affected 1122(27.9%)
Age (per 10 years)	1.16 (1.09-1.23)‡	1.16 (1.09-1.24)‡	1.09 (1.02-1.16)†	1.04 (0.98-1.11)	1 (0.93-1.05)
Female (F vs. M)	0.99 (0.86-1.15)	0.98 (0.83-1.15)	1.06 (0.91-1.22)	1.09 (0.94-1.27)	1.27 (1.09-1.48)†
Non-Asian (Y vs. N)	1.17 (0.98-1.40)	0.97 (0.80-1.19)	1.56 (1.30-1.88)‡	1.78 (1.49-2.14)‡	1.97 (1.64-2.35)‡
Clinical features					
Systolic BP (mmHg)	1.01 (1.00-1.01)†	1 (1-1.01)	1 (1-1.01)	1 (1-1.01)	1 (1-1.06)
NIHSS score	1.11 (1.09-1.12)‡	1.13 (1.12-1.15)‡	1.12 (1.10-1.13)‡	1.05 (1.03-1.06)‡	1.04 (1.03-1.06)‡
Medical History					
Hypertension (Y vs. N)	1.00 (0.85-1.15)	1.05 (0.89-1.24)	0.89 (0.76-1.04)	0.93 (0.79-1.09)	0.95 (0.81-1.11)
Previous stroke (Y vs. N)	0.85 (0.70-1.03)†	0.88 (0.72-1.09)	0.96 (0.79-1.17)	0.73 (0.59-0.90) †	0.96 (0.78-1.18)
Coronary artery disease (Y vs. N)	1.01 (0.82-1.25)	0.92 (0.73-1.15)	0.95 (0.77-1.19)	0.84 (0.67-1.05)	0.93 (0.75-1.18)
Atrial fibrillation (Y vs. N)	1.17 (0.92-1.49)	1.40 (1.09-1.79)†	1.25 (0.99-1.59)	1.01 (0.80-1.29)	0.93 (0.74-1.18)
Diabetes mellitus (Y vs. N)	1.46 (1.22-1.74)‡	1.57 (1.30-1.90)‡	1.30 (1.09-1.55)†	1.19 (0.99-1.44)	1.19 (1.00-1.43)
Hypercholesterolemia (Y vs. N)	1.14 (0.92-1.41)	1.22 (0.97-1.54)	1.13 (0.91-1.40)	1.19 (0.96-1.47)	1.30 (1.06-1.60)*
Pre-stroke mRS (1 vs. 0)	2.07 (1.69-2.55)‡	1.66 (1.34-2.07)‡	1.85 (1.50-2.29)‡	1.36 (1.11-1.67)†	1.09 (0.88-1.33)
Medication at time of admission					
Warfarin anticoagulation (Y vs. N)	0.95 (0.57-1.59)	1.58 (0.93-2.67)	1.60 (0.95-2.71)	1.06 (0.63-1.78)	1.43 (0.88-2.33)
Aspirin or other anti-platelet agents (Y vs. N)	1.18 (0.97-1.43)	1.08 (0.87-1.33)	1.20 (0.99-1.46)	1.28 (1.05-1.56)*	1.40 (1.16-1.70) ‡
Final diagnosis at time of hospital separation					
Large vessel atheromatous etiology	3.00 (1.72-5.22)†	2.57 (1.37-4.82)†	2.72 (1.63-4.52)‡	1.04 (0.65-1.67)	0.98 (0.62-1.54)
Small vessel disease	2.01 (1.15-3.52)*	1.44 (0.76-2.73)	1.53 (0.92-2.56)	0.93 (0.57-1.50)	0.74 (0.47-1.18)
Cardio-emboli	1.90 (1.06-3.40)*	1.42 (0.74-2.73)	1.80 (1.05-3.08)*	0.97 (0.58-1.61)	1.05 (0.65-1.71)
Other	2.00 (1.13-3.52)*	1.61 (0.85-3.07)	1.81 (1.08-3.05)*	1.02 (0.63-1.66)	1.05 (0.66-1.68)
Proxy-respondents (Y vs. N)	2.49 (2.16-2.88)‡	3.09 (2.65-3.60)‡	2.81 (2.42-3.25)‡	1.37 (1.17-1.60)‡	1.60 (1.37-1.86)‡

Data are odds ratio (95% confidence interval)

BP denotes blood pressure, HRQoL health-related quality of life, mRS modified Rankin scale, NIHSS National Institutes of Health Stroke Scale,

\*P<0.05, †P<0.01, ‡P<0.001

**Table VII. Associations of neurological impairment and EQ-5D utility scores at 90 days**

<b>Symptoms</b>	<b>r*</b>	<b>P value</b>
Unilateral weakness (and/or sensory deficit) affecting face	0.010	0.543
Unilateral weakness (and/or sensory deficit) affecting arm or hand	-0.008	0.628
Unilateral weakness (and/or sensory deficit) affecting leg or foot	<b>-0.039</b>	<b>0.016</b>
Dysphasia (disorder of language)	0.016	0.341
Homonymous hemianopia	<b>-0.035</b>	<b>0.031</b>
Visuospatial disorder (e.g. sensory or visual inattention, unable to copy pictures)	-0.027	0.101
Brainstem or cerebellar signs (e.g. nystagmus or ataxia)	0.017	0.290
Other neurological deficit	-0.029	0.074

EQ-5D denotes EuroQol 5-dimensional questionnaire, r Spearman's correlation coefficient

\*adjusted for age, sex, baseline National Institutes of Health Stroke Scale score, ethnicity

**Table VIII. Associations of symptoms and poor health-related quality of life (EQ-5D utility score  $\leq 0.7$ ) in patients with poor functional outcome (mRS scores 2-6)**

Symptoms	EQ-5D utility score*		Multivariable	
	>0.7 (N=720)	$\leq 0.7$ (N=1073)	OR (95%CI)†	P value
Unilateral weakness (and/or sensory deficit) affecting face	552/13 (77.4)	889/1067 (83.3)	1.22 (0.87-1.72)	0.240
Unilateral weakness (and/or sensory deficit) affecting arm or hand	632/ 718 (88.0)	966/1066 (90.6)	0.61 (0.36-1.03)	0.066
Unilateral weakness (and/or sensory deficit) affecting leg or foot	599/718 (83.4)	947/1066 (88.8)	<b>1.80 (1.14-2.86)</b>	<b>0.012</b>
Dysphasia	479/712 (67.3)	701/1062 (66.0)	<b>0.77 (0.59-1.00)</b>	<b>0.049</b>
Homonymous hemianopia	94/696 (13.5)	246/1012 (24.3)	1.09 (0.73-1.64)	0.668
Visuospatial disorder	98/678 (14.5)	235 997 (23.6)	0.89 (0.61-1.31)	0.564
Brainstem or cerebellar signs	61/701 (8.7)	101/1032 (9.8)	1.12 (0.74-1.69)	0.607
Other neurological deficit	76/708 (10.7)	169/1044 (16.2)	1.13 (0.79-1.63)	0.505
The number of the symptoms listed above				
$\leq 2$	113/720 (15.7)	110/1073 (10.3)	1.0	
3-4	484/720 (67.2)	647/1073 (60.3)	1.19 (0.69-2.06)	0.534
$\geq 5$	123/720 (17.1)	316/1073 (29.5)	1.47 (0.63-3.44)	0.378

CI denotes confidence interval, EQ-5D EuroQol 5-dimensional questionnaire, mRS modified Rankin scale, OR odds ratio

\*Good (above) and poor (below) mean scores on the EQ-5D

†adjusted for age, sex, baseline National Institutes of Health Stroke Scale score, ethnicity

**Table IX. Associations of symptoms and poor health-related quality of life (EQ-5D utility score  $\leq 0.7$ ) in patients with good functional outcome (mRS score 0-1)**

Symptoms	EQ-5D utility score*		Multivariable	
	>0.7 (N=2140)	$\leq 0.7$ (N=83)	OR (95%CI)†	P value
Unilateral weakness (and/or sensory deficit) affecting face	1574/2129 (73.9)	57/83 (68.7)	0.72 (0.36-1.42)	0.337
Unilateral weakness (and/or sensory deficit) affecting arm or hand	1759/2133 (82.5)	61/ 3 (73.5)	<b>0.34 (0.15-0.81)</b>	<b>0.015</b>
Unilateral weakness (and/or sensory deficit) affecting leg or foot	1667/2133 (78.2)	67/83 (80.7)	<b>3.71 (1.59-8.69)</b>	<b>0.003</b>
Dysphasia	1227/2129 (57.6)	37/83 (44.6)	0.77 (0.43-1.39)	0.390
Homonymous hemianopia	179/2102 (8.5)	15/81 (18.5)	1.68 (0.71-3.99)	0.237
Visuospatial disorder	203/2084 (9.7)	17/81 (21.0)	1.04 (0.46-2.32)	0.927
Brainstem or cerebellar signs	261/2103 (12.4)	12/82 (14.6)	0.88 (0.41-1.88)	0.736
Other neurological deficit	241/2107 (11.4)	10/83 (12.1)	0.62 (0.28-1.36)	0.233
The number of the symptoms listed above				
$\leq 2$	492/2140 (23.0)	22/83(26.5)	1.0	
3-4	1382/2140 (64.6)	47/83(56.6)	1.17 (0.41-3.32)	0.765
$\geq 5$	266/2140 (12.4)	14/83(16.9)	1.10 (0.17-6.92)	0.921

CI denotes confidence interval, EQ-5D EuroQol 5-dimensional questionnaire, mRS modified Rankin scale, OR odds ratio

\*Good (above) and poor (below) mean scores on the EQ-5D

†adjusted for age, sex, baseline National Institutes of Health Stroke Scale score, ethnicity

**Table X. Strength of association and proportion of variation in EQ-5D utility score explained by mRS score**

	Model I					Model II			
	n	r*	P†	r <sup>2</sup> *	P†	r*	P†	r <sup>2</sup> *	P†
Total participants	4016	-0.83		0.70		-0.83		0.69	
Asians	2692	-0.85	<0.0001	0.73	0.036	-0.86	<0.0001	0.74	<.0001
Non-Asians	1324	-0.77		0.63		-0.77		0.63	
Chinese	2079	-0.87	<0.0001	0.75	0.095	-0.88	<0.0001	0.81	<.0001
Non-Chinese	1937	-0.78		0.65		-0.78		0.65	

EQ-5D denotes EuroQol 5- dimensional questionnaire, mRS modified Rankin scale.

Model I used UK utility weight for all included participants

Model II used Chinese utility weight for Chinese participants and UK utility weights for other participants

\* Adjusted for age and baseline National Institutes of Health Stroke Scale score, r indicates Spearman's correlation coefficient, r<sup>2</sup> multiple regression coefficient. All correlations were statistically significant at P<0.0001.

†P for comparing coefficients between Asians and non-Asians, and between Chinese and non-Chinese.



**Table XI. Regression co-efficient (standard error) in OLS model and utility weighted (UW) mRS score**

mRS scores	Regression co-efficient	Standard error	UW mRS score
0	Reference	.	0.977
1	-0.092	0.008	0.885
2	-0.229	0.009	0.748
3	-0.401	0.009	0.576
4	-0.783	0.010	0.194
5	-1.151	0.013	-0.174
Intercept	0.977	0.005	
R <sup>2</sup>	0.764		

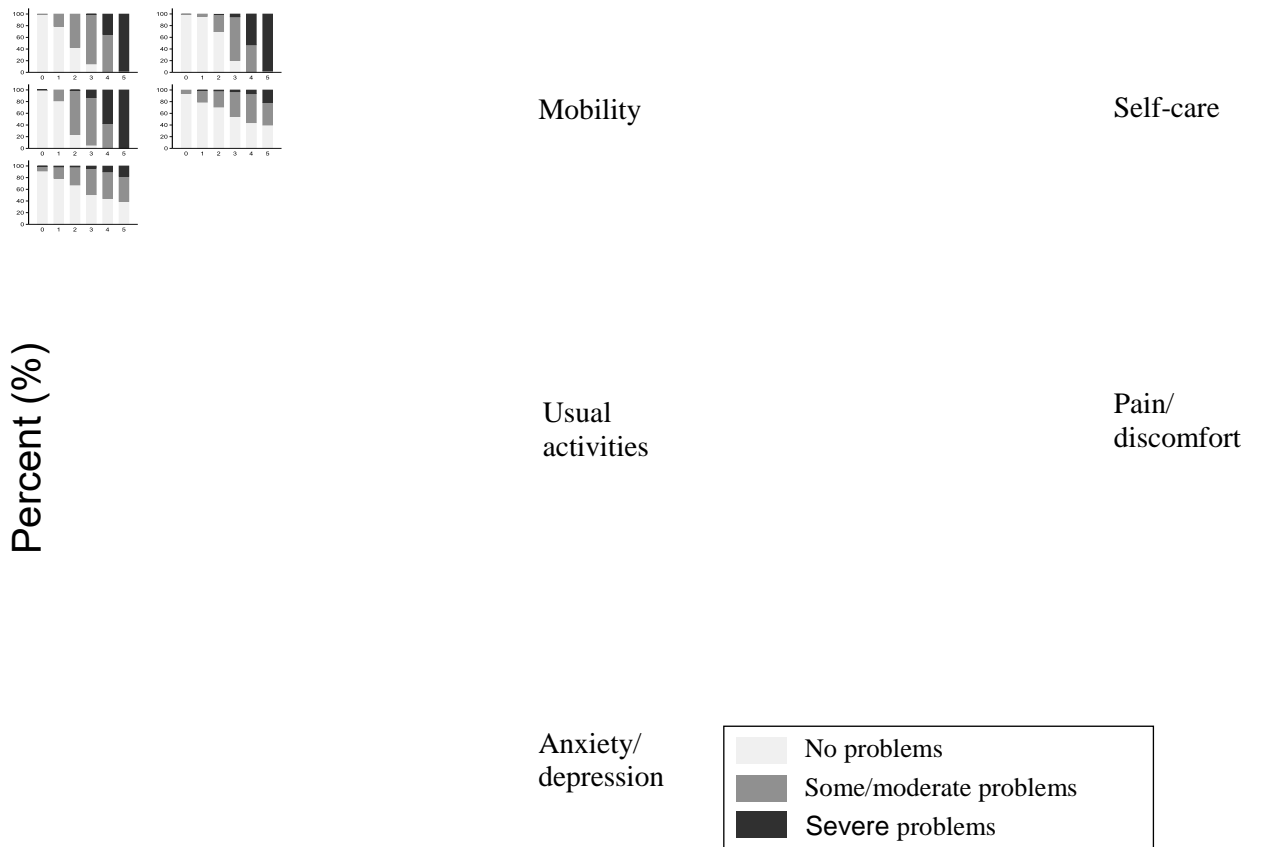
OLS denotes ordinary least squares, mRS modified Rankin Scale, UW utility weighted.

**Table XII. Regression co-efficient (standard error) in OLS model and UW-mRS scores using Chinese utility weights for Chinese patients and UK utility weights for others**

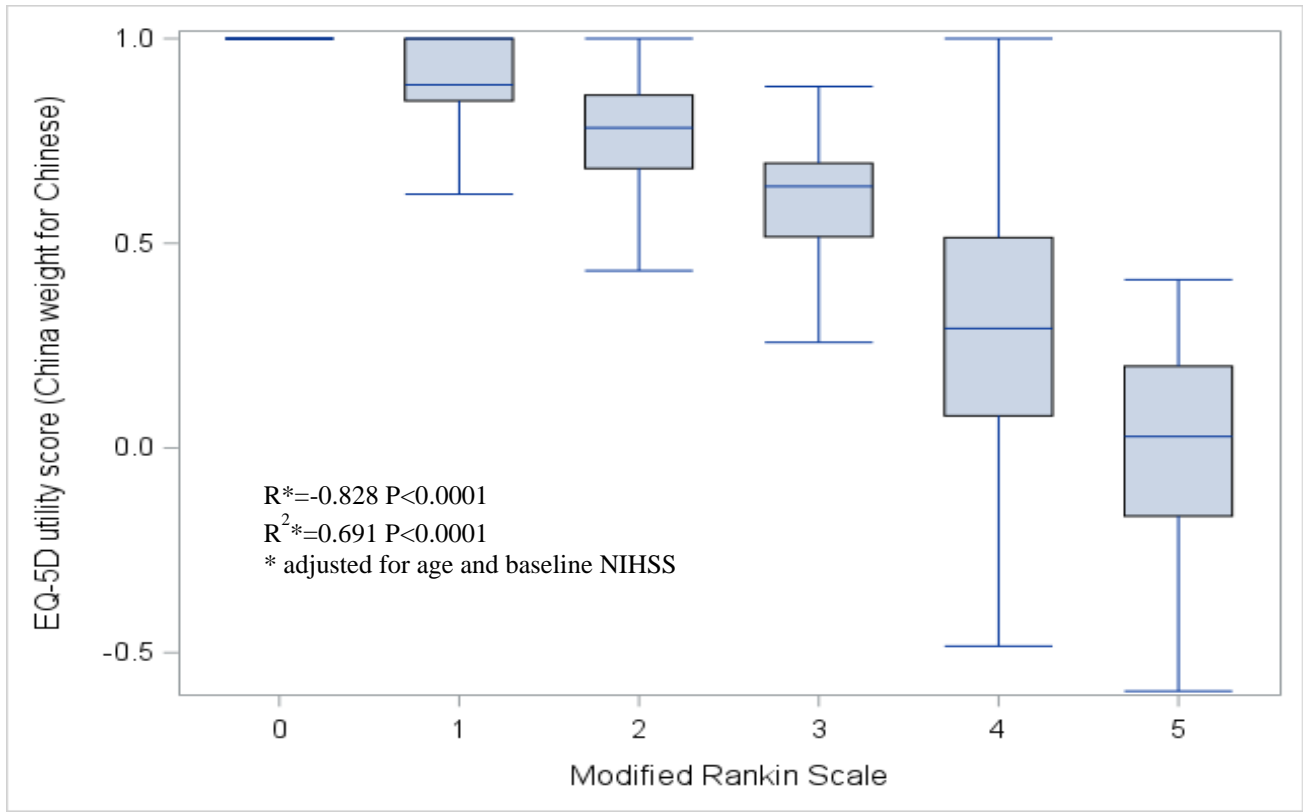
mRS score	Regression co-efficient	Standard error	UW-mRS score
0	Reference		0.977
1	-0.088	0.007	0.889
2	-0.230	0.008	0.747
3	-0.396	0.009	0.581
4	-0.701	0.010	0.276
5	-0.993	0.012	-0.016
Intercept	0.977	0.005	
R <sup>2</sup>	0.732		

OLS indicates ordinary least squares, mRS modified Rankin scale, UW utility weighted.

**Figure I. Relationships between mRS scores and individual dimensions on the EQ-5D**



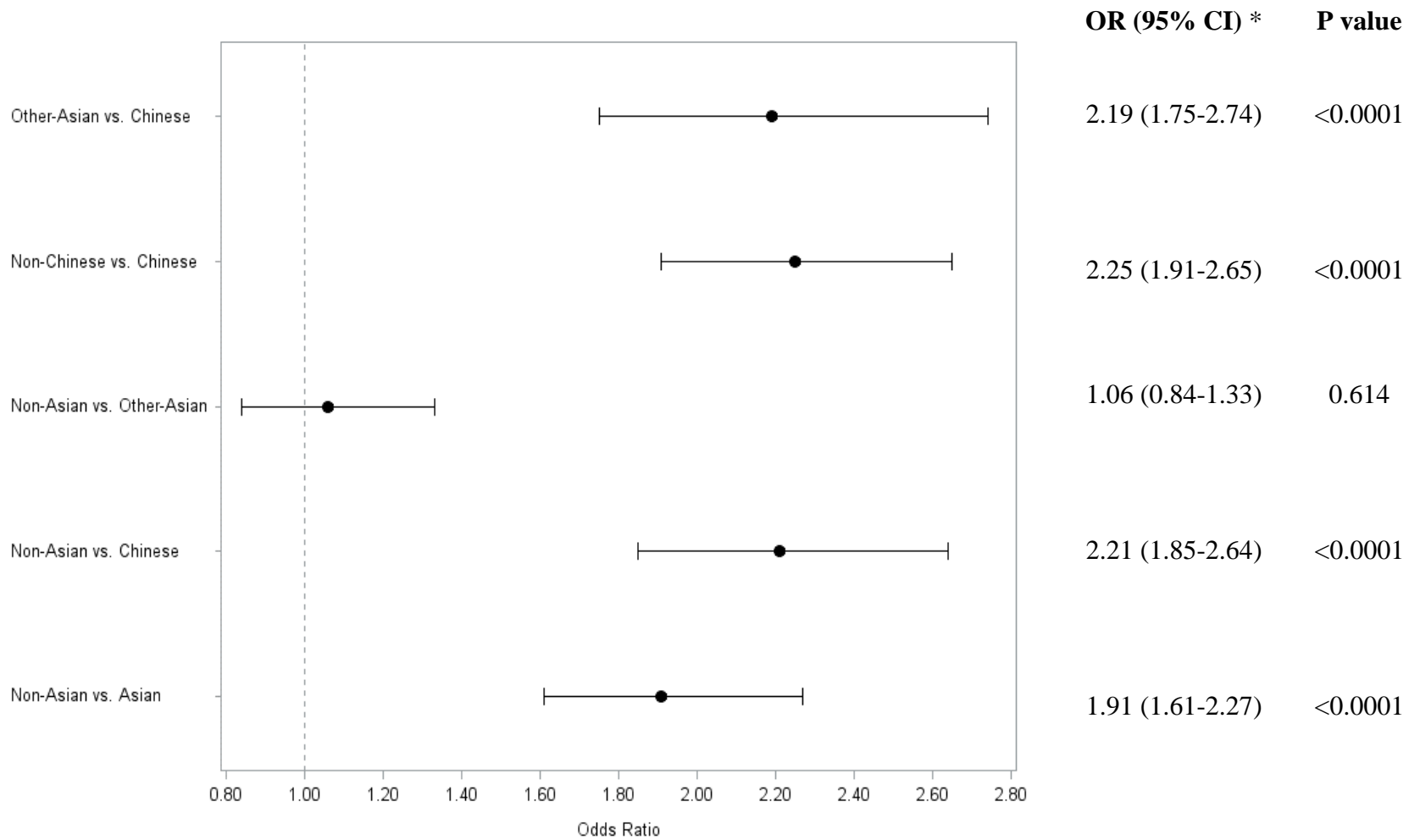
**Figure II. Relationship of mRS scores and EQ-5D utility scores using Chinese utility weight for Chinese patients and UK utility weights for other patients**



n (%)	1148 (28.6)	1075 (26.8)	637 (15.9)	521 (13.0)	411 (10.2)	224 (5.6)
Mean (SD)	0.98 (0.08)	0.89 (0.15)	0.75 (0.16)	0.58 (0.19)	0.28 (0.30)	-0.02 (0.24)

R indicates Spearman's correlation coefficient,  $R^2$  multiple regression coefficient.

**Figure III. Comparison of ethnicity effects on HRQoL by different ethnicity analytical approaches.**



CI denotes confidence interval, OR odds ratio

\*adjusted for age, baseline National Institutes of Health Stroke Scale (NIHSS) score, diabetes mellitus, pre-stroke mRS=1 (vs. 0), large vessel atheromatous etiology, and proxy-respondents.