

contents

Table S1 Sensitive Analyses for Baseline Characteristics of the Study Population (Totals and Stratified According to Sleep Duration, and Alcohol Consumption).

Table S2 Sensitive Analyses for Cross-Sectional Association Between Sleep Duration per Night, Alcohol Consumption (time per month), covariates, and Global Cognitive Function at Baseline Using Generalized Linear Model

Table S3 Sensitivity Analyses for Mean Difference in Rate of Change in Global Cognitive Decline During Follow-up Using Generalized Estimating Equation

Figure S1 Sensitivity Analyses for the Trajectory of Late Life Cognitive Decline with Age.

Table S1. Sensitive Analyses for Baseline Characteristics of the Study Population (Totals and Stratified According to Sleep Duration, and Alcohol Consumption).

	All	Sleep duration (hours per night) (n=10248)			<i>p</i> value	Alcohol Consumption (time per month) (n=10272)			<i>p</i> value
		≤6h	7-8h	≥9h		Non-drinkers	≤1	>1	
N (%)	11204	5055(49.3)	4327(42.2)	866(8.5)		6589(64.1)	852(8.3)	2831(27.6)	
Age (years), mean (SD)	59.02(10.16)	59.03(10.09)	59.07(10.21)	58.71(9.86)	0.506	58.98(10.09)	59.18(10.07)	59.06(10.19)	0.708
Gender(women), n (%)	5818(51.9)	2627(52.0)	2207(51.0)	473(54.7)	0.136	3423(52.0)	431(50.6)	1472(52.0)	0.730
Education level, n (%)					0.253				0.265
No formal education or illiterate	3030(27.1)	1371(27.2)	1132(26.2)	261(30.3)		1735(26.4)	238(28.0)	808(28.6)	
Did not finish primary school	1960(17.6)	895(17.8)	730(16.9)	148(17.2)		1143(17.4)	156(18.4)	503(17.8)	
Finished middle school	5865(52.5)	2637(52.3)	2321(53.8)	434(50.4)		3499(53.3)	430(50.6)	1446(51.3)	
Higher and further education	266(2.4)	119(2.4)	110(2.6)	16(1.9)		163(2.5)	22(2.6)	53(1.9)	
Others	46(0.4)	18(0.4)	20(0.5)	2(0.2)		26(0.4)	4(0.5)	11(0.4)	

Living with a partner, n (%)	8980(80.1)	4056(80.3)	3449(79.9)	698(80.9)	0.825	5295(80.5)	680(79.8)	2267(80.2)	0.069
Cigarette consumption, n (%)	4451(39.7)	1962(38.8)	1726(39.9)	316(36.5)	0.148	2609(39.7)	339(39.9)	1155(40.9)	0.540
Blood pressure, mean (SD), mm Hg									
Systolic	130.53(21.75)	130.20(21.61)	130.98(22.08)	131.29(21.99)	0.290	130.67(21.89)	132.14(23.31)	130.02(21.23)	0.123
Diastolic	75.86(12.21)	75.78(12.19)	76.01(12.44)	76.03(11.92)	0.781	75.89(12.19)	76.30(13.82)	75.80(11.96)	0.508
Body mass index (kg/m ²)	23.46(3.98)	23.46(4.01)	23.45(4.00)	23.44(3.96)	0.845	23.39(3.97)	23.46(3.75)	23.61(4.14)	0.166
Cognitive function domain scores (z- scores), mean (SD)									
The memory score	0.08(1.01)	0.09(1.00)	0.15(1.01)	0.14(0.98)	0.020	0.11(1.03)	0.26(0.99)	0.12(0.97)	0.001
The orientation test score	0.09(0.96)	0.13(0.95)	0.16(0.92)	0.11(0.93)	0.117	0.10(0.95)	0.28(0.84)	0.18(0.90)	<0.001
The executive score	0.03(1.04)	0.34(0.91)	0.38(0.88)	0.34(0.90)	0.091	0.27(0.92)	0.50(0.83)	0.51(0.83)	<0.001
The total z scores	0.11(0.99)	0.08(1.00)	0.15(0.98)	0.12(0.96)	0.023	0.05(1.01)	0.30(0.93)	0.21(0.93)	<0.001
Hypertension, n (%)	2728(24.3)	1282(25.5)	1022(23.7)	208(24.0)	0.114	1615(24.7)	211(24.9)	683(24.3)	0.924
Diabetes, n (%)	621(5.5)	305(6.1)	236(5.5)	36(4.2)	0.065	379(5.8)	62(7.4)	132(4.7)	0.008
Dyslipidemia, n (%)	1026(9.2)	494(10.0)	396(9.3)	69(8.1)	0.185	623(9.7)	86(10.3)	247(8.9)	0.369
Coronary heart disease, n (%)	1300(11.6)	696(13.9)	444(10.3)	83(9.7)	<0.001	761(11.6)	98(11.6)	335(11.9)	0.931
Stroke, n (%)	212(1.9)	108(2.1)	67(1.6)	19(2.2)	0.091	127(1.9)	11(1.3)	59(2.1)	0.338
Chronic lung disease,	1050(9.4)	576(11.4)	335(7.8)	69(8.0)	<0.001	593(9.1)	92(10.8)	269(9.6)	0.219

n (%)									
Asthma, n (%)	375(3.3)	211(4.2)	108(2.5)	30(3.5)	<0.001	213(3.2)	28(3.3)	103(3.7)	0.605

Table S2. Sensitive Analyses for Cross-Sectional Association Between Sleep Duration per Night, Alcohol Consumption (time per month), covariates, and Global Cognitive Function at Baseline Using Generalized Linear Model

	B,95%CI, P Value							
	The memory score		The orientation test score		The executive score		The total z scores	
	Model1 ^a (n=7414)	Model2 ^b (n=5848)	Model1 ^a (n=7725)	Model2 ^b (n=6130)	Model1 ^a (n=9332)	Model2 ^b (n=7439)	Model1 ^a (n=6994)	Model2 ^b (n=5517)
Sleep duration (hours per 24h period)								
≤6h	-0.140	-0.147	-0.055	-0.034	-0.049	-0.076	-0.119	-0.127
	-0.233 to -0.047	-0.252 to -0.041	-0.141 to 0.030	-0.130 to 0.061	-0.133 to 0.035	-0.171 to 0.018	-0.211 to -0.028	-0.230 to -0.0024
<i>P</i> value	0.003	0.006	0.202	0.480	0.249	0.113	0.011	0.016
7-8h	REF	REF	REF	REF	REF	REF	REF	REF
≥9h	-0.011	0.029	-0.105	-0.051	0.007	0.037	-0.004	0.034
	-0.182 to 0.159	-0.168 to 0.226	-0.261 to 0.051	-0.228 to 0.127	-0.148 to 0.162	-0.141 to 0.214	-0.173 to 0.165	-0.160 to 0.228

<i>P</i> value	0.896	0.771	0.185	0.577	0.928	0.687	0.962	0.731
Whether exposed to alcohol (time per month)								
Non-drinkers	REF	REF	REF	REF	REF	REF	REF	REF
<=1	0.356	0.248	0.165	0.161	0.196	0.026	0.401	0.279
	0.046 to 0.666	-0.131 to 0.628	-0.110 to 0.441	-0.167 to 0.489	-0.077 to 0.469	-0.293 to 0.345	0.097 to 0.706	-0.087 to 0.644
<i>P</i> value	0.025	0.199	0.240	0.337	0.160	0.873	0.010	0.135
>1	0.107	0.130	0.052	0.067	0.332	0.335	0.243	0.261
	-0.079 to 0.292	-0.085 to 0.344	-0.118 to 0.222	-0.126 to 0.260	0.165 to 0.500	0.144 to 0.526	0.058 to 0.427	0.049 to 0.472
<i>P</i> value	0.260	0.236	0.548	0.494	<0.001	0.001	0.010	0.016
Age(years)	0.002	0.001	0.000	-0.001	0.001	0.001	0.002	0.002
	-0.001 to 0.004	-0.001 to 0.004	-0.002 to 0.002	-0.003 to 0.002	-0.001 to 0.004	-0.001 to 0.004	-0.001 to 0.004	-0.001 to 0.004
<i>P</i> value	0.163	0.317	0.973	0.570	0.206	0.290	0.157	0.282
Gender	0.019	0.016	0.008	0.001	0.014	-0.008	0.023	0.014
	-0.031 to 0.068	-0.041 to 0.072	-0.037 to 0.054	-0.050 to 0.052	-0.030 to 0.059	-0.058 to 0.042	-0.026 to 0.073	-0.042 to 0.069
<i>P</i> value	0.460	0.586	0.725	0.966	0.528	0.756	0.352	0.629

Education level	0.021	0.017	0.014	0.012	0.018	0.015	0.025	0.024
	0.008 to 0.033	0.002 to 0.032	0.002 to 0.026	-0.001 to 0.025	0.006 to 0.030	0.002 to 0.028	0.012 to 0.037	0.010 to 0.039
<i>P</i> value	0.002	0.023	0.024	0.077	0.003	0.025	0.001	0.001
Marriage	0.002	0.007	-0.013	-0.007	-0.002	0.001	0.002	0.008
	-0.017 to 0.021	-0.014 to 0.028	-0.030 to 0.004	-0.026 to 0.012	-0.019 to 0.015	-0.018 to 0.020	-0.017 to 0.021	-0.013 to 0.029
<i>P</i> value	0.825	0.519	0.138	0.473	0.843	0.898	0.818	0.457
Blood pressure								
Systolic	NA	-0.002	NA	0.000	NA	-0.001	NA	-0.001
		-0.005 to 0.002		-0.002 to 0.001		-0.002 to 0.001		-0.004 to 0.002
<i>P</i> value		0.309		0.851		0.446		0.537
Diastolic	NA	0.000	NA	-0.001	NA	-0.001	NA	0.000
		-0.002 to 0.002		-0.004 to 0.002		-0.004 to 0.002		-0.002 to 0.002
<i>P</i> value		0.864		0.436		0.403		0.938
Body mass index (kg/m2)	NA	0.000	NA	0.000	NA	-0.004	NA	-0.004
		-0.007 to 0.007		-0.006 to 0.006		-0.010 to 0.002		-0.010 to 0.003
<i>P</i> value		0.990		0.881		0.171		0.291

Cigarette consumption	NA	0.027	NA	0.031	NA	0.011	NA	0.050
		-0.027 to 0.081		-0.018 to 0.080		-0.038 to 0.059		-0.003 to 0.103
<i>P</i> value		0.326		0.215		0.668		0.067
Hypertension	NA	0.075	NA	-0.008	NA	-0.019	NA	0.031
		0.009 to 0.140		-0.067 to 0.052		-0.078 to 0.039		-0.034 to 0.096
<i>P</i> value		0.026		0.799		0.520		0.354
Diabetes	NA	-0.078	NA	-0.014	NA	0.009	NA	-0.077
		-0.200 to 0.044		-0.125 to 0.097		-0.100 to 0.118		-0.199 to 0.045
<i>P</i> value		0.211		0.802		0.871		0.217
Dyslipidemia	NA	0.032	NA	0.016	NA	0.028	NA	0.042
		-0.067 to 0.130		-0.073 to 0.105		-0.059 to 0.115		-0.055 to 0.138
<i>P</i> value		0.527		0.727		0.525		0.397

Coronary heart disease	NA	-0.035	NA	-0.019	NA	0.006	NA	-0.045
		-0.120 to 0.050		-0.097 to 0.059		-0.071 to 0.082		-0.129 to 0.040
		0.424		0.636		0.887		0.300
Stroke	NA	-0.030	NA	0.012	NA	-0.059	NA	-0.016
		-0.226 to 0.166		-0.168 to 0.193		-0.236 to 0.117		-0.211 to 0.180
		0.762		0.895		0.509		0.875
Chronic lung disease	NA	0.002	NA	-0.013	NA	0.052	NA	0.014
		-0.092 to 0.096		-0.099 to 0.073		-0.032 to 0.136		-0.080 to 0.108
		0.970		0.765		0.222		0.777
Asthma	NA	0.155	NA	0.098	NA	-0.034	NA	0.136
		0.004 to 0.306		-0.039 to 0.235		-0.170 to 0.103		-0.012 to 0.285
		0.044		0.161		0.628		0.072

Table S3. Sensitivity Analyses for Mean Difference in Rate of Change in Global Cognitive Decline During Follow-up Using Generalized Estimating Equation

	β (95% CI) ^a	p Value
Sleep duration (hours per 24h period)		
$\leq 6h$	-0.121 (-0.192 to -0.051)	<0.05
7-8h	REF	REF
$\geq 9h$	0.007 (-0.126 to 0.139)	0.923
Whether exposed to alcohol (time per month)		
No	REF	REF
≤ 1	0.186 (-0.056 to 0.427)	0.133
> 1	0.117 (-0.027 to 0.261)	0.112
Sleep duration * Alcohol consumption		0.057
Age (years)	-0.001 (-0.003 to 0.001)	0.213
Gender	.026 (-0.012 to 0.063)	0.183
Education level	0.012 (0.002 to 0.022)	<0.05
Marriage	0.008 (-0.006 to 0.022)	0.250
Blood pressure		

Systolic	0.001 (-0.001 to 0.002)	0.273
Diastolic	-0.001 (-0.003 to 0.001)	0.303
Body mass index (kg/m2)	-0.001 (-0.005 to 0.004)	0.721
Cigarette consumption	0.033 (-0.003 to 0.070)	0.071
Hypertension	0.031 (-0.013 to 0.075)	0.162
Diabetes	-0.089 (-0.171 to -0.006)	<0.05
Dyslipidemia	-0.059 (-0.124 to 0.006)	0.077
Coronary heart disease	-0.035 (-0.092 to 0.023)	0.234
Stroke	-0.017 (-0.149 to 0.115)	0.802
Chronic lung disease	0.027 (-0.037 to 0.090)	0.409
Asthma	0.032 (-0.068 to 0.133)	0.529

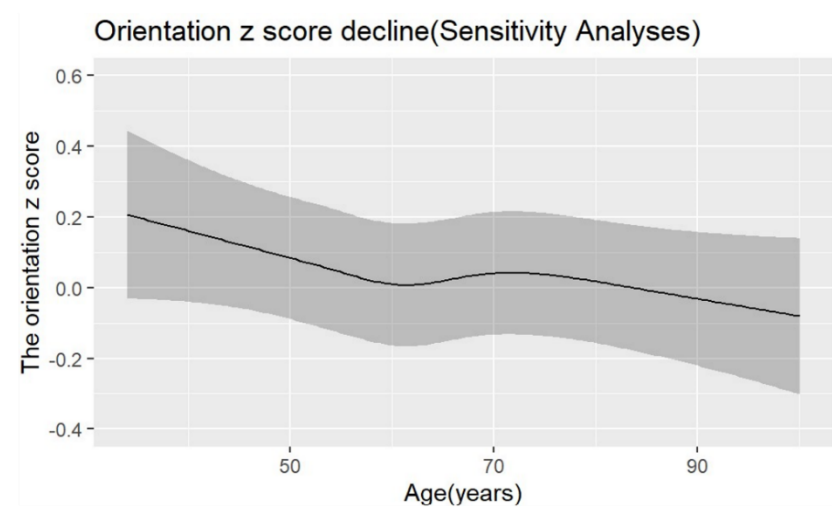
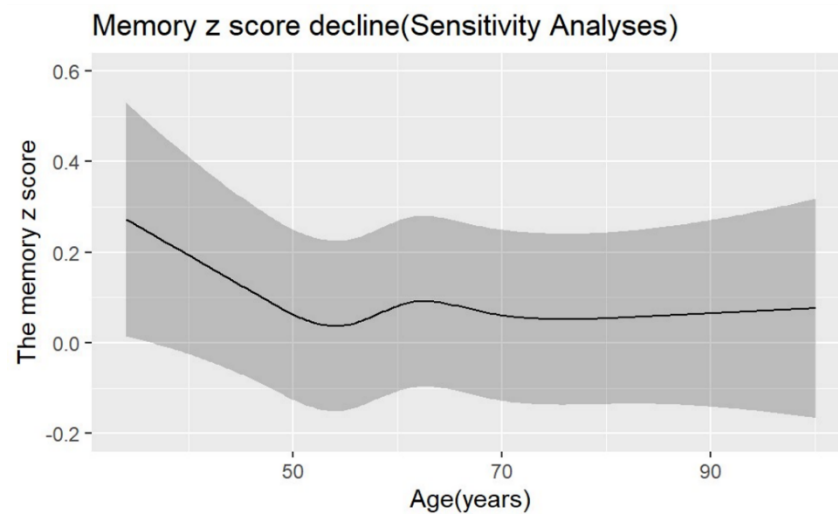
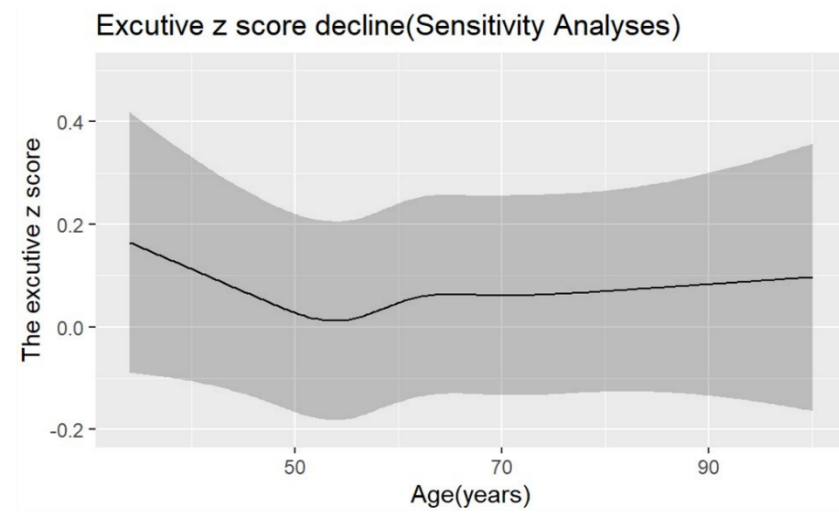
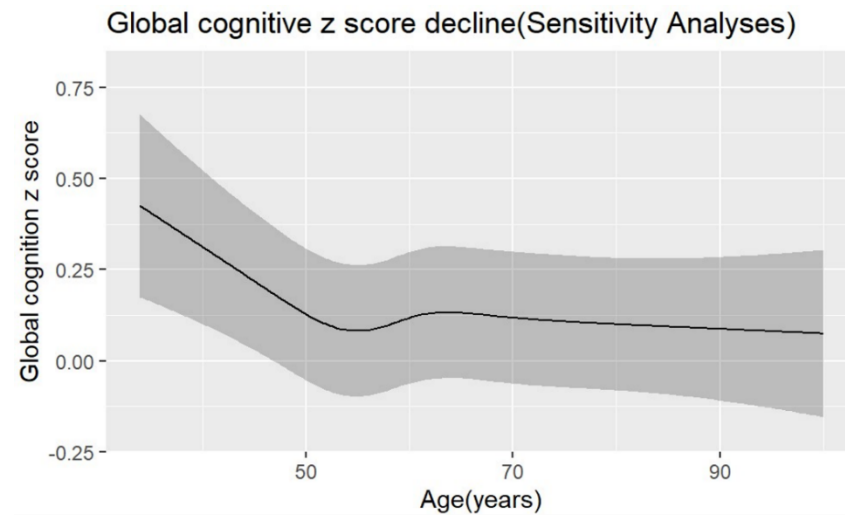


Figure S1 Sensitivity Analyses for The Trajectory of Late Life Cognitive Decline with Age.