Supplementary Materials

Longitudinal associations of domain-specific subjective cognitive decline with plasma Alzheimer's biomarkers and cognitive change

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Supplementary Methods

Mild cognitive impairment (MCI) and dementia diagnostic criteria

MCI diagnostic criteria were as follows:

(1) a cognitive complaint reported by the patient, an informant, or a clinician;

(2) objective impairment in ≥ 1 cognitive domain;

(3) largely preserved functional abilities;

(4) failure to meet the criteria for dementia.

Dementia diagnostic criteria were as follows:

(1) the presence of multiple cognitive deficits, including memory impairment and at least one additional disturbance (e.g., aphasia, apraxia, agnosia, or executive dysfunction);

(2) deficits that interfere with social or occupational functioning;

(3) objective evidence of a significant decline from a previous level of functioning;

(4) exclusion of cognitive deficits occurring solely during delirium.

Supplementary Table 1. Means of cognitive scores in the total sample and by subjective cognitive decline complaints (*n* = 2,326)

Variables	Total sample, (*n* = 2,326)	SCD (*n* = 1,398)	Non-SCD (*n* = 928)	*P* value
Baseline SCD domain				
Global	-0.03 (1.00)	0.83 (0.48)	-0.85 (0.59)	< 0.001
Memory	-0.11 (0.99)	0.19 (0.86)	-0.57 (1.00)	< 0.001
Language	-0.07 (0.95)	0.17 (1.05)	-0.39 (0.65)	< 0.001
Execution	-0.10 (0.90)	0.10 (1.07)	-0.38 (0.48)	< 0.001
Attention	-0.01 (0.99)	0.24 (1.12)	-0.34 (0.64)	< 0.001
Endline SCD domain				
Global	0.02 (1.00)	0.23 (0.95)	-0.29 (1.00)	< 0.001
Memory	-0.03 (0.95)	0.09 (0.91)	-0.21 (0.98)	< 0.001
Language	-0.09 (0.93)	-0.02 (0.97)	-0.19 (0.85)	< 0.001
Execution	-0.10 (0.88)	-0.05 (0.93)	-0.16 (0.81)	0.003
Attention	-0.07 (0.92)	0.00 (0.98)	-0.18 (0.83)	< 0.001
△ SCD domain				
Global	0.00 (1.00)	-0.01 (0.94)	0.01 (1.06)	0.815
Memory	0.00 (1.00)	0.05 (0.98)	-0.07 (1.03)	0.009
Language	0.00 (1.00)	0.04 (1.06)	-0.06 (0.91)	0.028
Execution	0.00 (1.00)	0.03 (1.05)	-0.03 (0.92)	0.189
Attention	0.00 (1.00)	0.04 (1.07)	-0.05 (0.90)	0.066
Baseline OCD domain				
Global	0.04 (0.91)	-0.05 (0.93)	0.19 (0.85)	< 0.001
Memory	0.26 (0.91)	0.15 (0.88)	0.39 (0.91)	< 0.001
Language	0.34 (0.92)	0.25 (0.91)	0.46 (0.91)	< 0.001
Execution	0.14 (0.94)	-0.04 (0.93)	0.30 (0.93)	< 0.001
Attention	0.33 (0.88)	0.22 (0.90)	0.45 (0.84)	< 0.001

Endline OCD domain				
Global	-0.04 (0.97)	-0.14 (0.99)	0.11 (0.92)	< 0.001
Memory	0.24 (1.00)	0.14 (0.99)	0.38 (1.00)	< 0.001
Language	0.21 (0.97)	0.17 (0.98)	0.27 (0.95)	0.020
Execution	0.14 (0.97)	0.05 (1.00)	0.25 (0.92)	< 0.001
Attention	0.25 (0.98)	0.13 (0.95)	0.43 (1.00)	< 0.001
△ OCD domain				
Global	0.00 (1.00)	-0.02 (1.02)	0.03 (0.97)	0.228
Memory	0.00 (1.00)	-0.02 (0.98)	0.02 (1.03)	0.403
Language	0.00 (1.00)	0.01 (1.00)	-0.02 (1.00)	0.502
Execution	0.00 (1.00)	-0.01 (1.04)	0.01 (0.97)	0.859
Attention	0.00 (1.00)	-0.08 (0.92)	0.09 (1.09)	0.001

Differences between two groups were analyzed by T or variance or the Wilcoxon rank sum tests for numerical variables. OCD: Objective cognitive domains; SCD: subjective cognitive decline; Δ: change.

Supplementary Table 2. The association between baseline SCD domains and objective cognition domains change

Baseline SCD domain	**Model 1 β (95%CI)**	***t*, *P* value**	**Model 2 β (95%CI)**	***t*, *P* value**	**Model 3 β (95%CI)**	***t*, *P* value**
Global	△OCD-Memory					
	-0.02 (-0.08, 0.03)	-0.849, *P* = 0.396	-0.01 (-0.07, 0.05)	-0.362, *P* = 0.717	-0.01 (-0.08, 0.05)	-0.430, *P* = 0.667
	△OCD-Language					
	-0.01 (-0.06, 0.05)	-0.038, *P* = 0.970	0.01 (-0.05, 0.07)	0.215, *P* = 0.830	0.01 (-0.05, 0.07)	0.226, p = 0.821
	△OCD-Execution					

	-0.01 (-0.07, 0.08)	-0.112, *P* = 0.911	0.03 (-0.04, 0.11)	0.842, *P* = 0.400	0.03 (-0.04, 0.11)	0.873, *P* = 0.383
	△OCD-Attention					
	-0.02 (-0.08, 0.03)	-0.859, *P* = 0.390	-0.01 (-0.06, 0.05)	-0.162, *P* = 0.872	0.01 (-0.06, 0.06)	0.159, *P* = 0.873
	△OCD-Global					
	-0.03 (-0.08, 0.01)	-1.421, *P* = 0.156	-0.01 (-0.06, 0.04)	-0.428, *P* = 0.669	-0.01 (-0.06, 0.04)	-0.381, *P* = 0.703
	△OCD-Global					
Memory	0.01 (-0.03, 0.05)	0.385, *P* = 0.700	0.04 (-0.01, 0.08)	1.667, *P* = 0.096	0.03 (-0.01, 0.07)	1.479, *P* = 0.139
Language	-0.02 (-0.06, 0.02)	-0.884, *P* = 0.377	-0.01 (-0.05, 0.04)	-0.133, *P* = 0.894	-0.01 (-0.05, 0.04)	-0.159, *P* = 0.873
Execution	-0.03 (-0.08, 0.02)	-1.208, *P* = 0.227	-0.01 (-0.05, 0.04)	-0.073, *P* = 0.942	0.01 (-0.05, 0.05)	-0.111, *P* = 0.912
Attention	-0.02 (-0.07, 0.02)	-1.036, *P* = 0.300	-0.01 (-0.05, 0.04)	-0.094, *P* = 0.925	-0.01 (-0.05, 0.04)	-0.123, *P* = 0.902
	△OCD-Memory					
Memory	-0.01 (-0.06, 0.04)	-0.555, *P* = 0.579	-0.01 (-0.05, 0.05)	-0.031, *P* = 0.976	-0.01 (-0.06, 0.05)	-0.157, *P* = 0.875
	△OCD-Language					

Language	-0.01 (-0.05, 0.04)	-0.131, P = 0.896	0.01 (-0.04, 0.05)	0.192, P = 0.848	0.01 (-0.04, 0.05)	0.211, P = 0.833
	△OCD-Execution					
Execution	-0.04 (-0.11, 0.03)	-1.106, P = 0.269	-0.02 (-0.10, 0.05)	-0.637, P = 0.524	-0.03 (-0.10, 0.05)	-0.744, P = 0.457
	△OCD-Attention					
Attention	-0.01 (-0.05, 0.05)	-0.018, P = 0.985	0.01 (-0.04, 0.06)	0.337, P = 0.736	0.01 (-0.04, 0.06)	0.344, P = 0.731

Results were derived from linear regression models. Model 1: Crude model; Model 2: Demographic adjusted model (adjusted variables: age, education, sex, and residence); Model 3: Full covariate adjusted model (adjusted variables: sex, age, education, residence, marriage, stable income, satisfaction with income, living alone, number of living siblings, number of close friends, frequency of interacting with neighbors, personality, smoking, drinking, physical activities, intellectual activities, hypertension, diabetes, coronary heart disease, hyperlipidemia, cerebrovascular disease, insomnia, and GDS). OCD: Objective cognitive domains; SCD: subjective cognitive decline; GDS: geriatric depression scale; CI: confidence interval; Δ: change.

Supplementary Table 3. The association between endline SCD domains and objective cognition domains change

Endline SCD domain	**Model 1 β (95%CI)**	***t*, *P* value**	**Model 2 β (95%CI)**	***t*, *P* value**	**Model 3 β (95%CI)**	***t*, *P* value**
Global	△OCD-Memory					
	-0.10 (-0.15, -0.03)	-3.902, P < 0.001	-0.10 (-0.16, -0.04)	-3.604, P < 0.001	-0.08 (-0.14, -0.02)	-2.656, P = 0.008

	△OCD-Language					
	-0.06 (-0.11, -0.01)	-2.403, *P* = 0.016	-0.05 (-0.10, -0.01)	-1.692, *P* = 0.091	-0.05 (-0.10, -0.01)	-1.686, *P* = 0.092
	△OCD-Execution					
	-0.06 (-0.12, 0.01)	-1.662, *P* = 0.097	0.00 (-0.07, 0.07)	-0.100, *P* = 0.920	0.01 (-0.06, 0.08)	0.210, *P* = 0.834
	△OCD-Attention					
	-0.12 (-0.17, -0.07)	-4.929, *P* < 0.001	-0.10 (-0.15, -0.05)	-3.604, *P* < 0.001	-0.08 (-0.14, -0.03)	-3.069, *P* = 0.002
	△OCD-Global					
	-0.15 (-0.19, -0.10)	-6.980, *P* < 0.001	-0.10 (-0.15, -0.06)	-4.662, *P* < 0.001	-0.10 (-0.15, -0.06)	-4.544, *P* < 0.001
	△OCD-Global					
Memory	-0.07 (-0.11, -0.03)	-3.341 *P* = 0.001	-0.04 (-0.08, 0.02)	-1.863, *P* = 0.063	-0.04 (-0.08, 0.01)	-1.804, *P* = 0.071
Language	-0.06 (-0.11, -0.02)	-2.748, *P* = 0.006	-0.04 (-0.08, 0.01)	-1.740, *P* = 0.082	-0.03 (-0.08, 0.01)	-1.530, *P* = 0.126
Execution	-0.12 (-0.17, -0.07)	-5.060, *P* < 0.001	-0.08 (-0.13, -0.04)	-3.663, *P* < 0.001	-0.09 (-0.13, -0.04)	-3.600, *P* < 0.001
Attention	-0.06 (-0.10, -0.01)	-2.576, *P* = 0.010	-0.04 (-0.08, 0.01)	-1.701, *P* = 0.089	-0.03 (-0.08, 0.01)	-1.452, *P* = 0.147

	△OCD-Memory					
Memory	-0.08 (-0.13, -0.02)	-2.864, *P* = 0.004	-0.06 (-0.12, -0.01)	-2.291, *P* = 0.022	-0.06 (-0.12, -0.01)	-2.248, *P* = 0.025
	△OCD-Language					
Language	-0.03 (-0.08, 0.02)	-1.148, *P* = 0.251	-0.02 (-0.07, 0.03)	-0.731, *P* = 0.476	-0.02 (-0.07, 0.03)	-0.629, *P* = 0.529
	△OCD-Execution					
Execution	-0.10 (-0.17, -0.02)	-2.490, *P* = 0.013	-0.06 (-0.14, 0.01)	-1.628, *P* = 0.104	-0.06 (-0.14, 0.01)	-1.507, *P* = 0.132
	△OCD-Attention					
Attention	-0.04 (-0.10, 0.01)	-1.643, *P* = 0.101	-0.03 (-0.08, 0.02)	-1.172, *P* = 0.241	-0.02 (-0.07, 0.04)	-0.622, *P* = 0.534

Results were derived from linear regression models. Model 1: Crude model; Model 2: Demographic adjusted model (adjusted variables: age, education, sex, and residence); Model 3: Full covariate adjusted model (adjusted variables: sex, age, education, residence, marriage, stable income, satisfaction with income, living alone, number of living siblings, number of close friends, frequency of interacting with neighbors, personality, smoking, drinking, physical activities, intellectual activities, hypertension, diabetes, coronary heart disease, hyperlipidemia, cerebrovascular disease, insomnia, and GDS). OCD: Objective cognitive domains; SCD: subjective cognitive decline; GDS: geriatric depression scale; CI: confidence interval; Δ: change.

Supplementary Table 4. The association between SCD domains change and objective cognition domains change

△SCD domain	**Model 1 β (95%CI)**	**t, *P* value**	**Model 2 β**	**t, *P* value**	**Model 3 β**	**t, *P* value**

			(95%CI)		**(95%CI)**	
Global	△OCD-Memory -0.09 (-0.15, -0.03)	-3.106, *P* = 0.002	-0.05 (-0.11, -0.01)	-1.785, *P* = 0.075	-0.04 (-0.10, 0.01)	-1.597, *P* = 0.111
	△OCD-Language -0.05 (-0.11, 0.01)	-1.725, *P* = 0.085	-0.04 (-0.12, 0.03)	-1.158, *P* = 0.247	-0.03 (-0.09, 0.03)	-0.934, *P* = 0.351
	△OCD-Execution -0.04 (-0.12, 0.03)	-1.205, *P* = 0.229	-0.05 (-0.10, 0.01)	-1.785, *P* = 0.750	0.01 (-0.07, 0.08)	0.166, p = 0.868
	△OCD-Attention -0.12 (-0.17, -0.07)	-4.269, *P* < 0.001	-0.08 (-0.14, -0.03)	-2.943, *P* = 0.003	-0.07 (-0.13, -0.02)	-2.573, *P* = 0.010
	△OCD-Global -0.13 (-0.18, -0.08)	-5.382, *P* < 0.001	-0.09 (-0.13, -0.04)	-3.560, *P* < 0.001	-0.08 (-0.13, -0.03)	-3.371, *P* = 0.001
Memory	△OCD-Global -0.06 (-0.11, -0.02)	-2.392, *P* = 0.017	-0.03 (-0.07, 0.01)	-1.387, *P* = 0.166	-0.02 (-0.07, 0.02)	-1.132, *P* = 0.258
Language	-0.05 (-0.09, -0.01)	-5.366, *P* < 0.001	-0.09 (-0.13, -0.04)	-3.547, *P* < 0.001	-0.08 (-0.13, -0.03)	-3.364, *P* = 0.001
Execution	-0.10 (-0.15,	-4.774,	-0.07	-3.363,	-0.07	-3.290,

	-0.06)	*P* < 0.001	(-0.11, -0.04)	*P* = 0.001	(-0.11, -0.03)	*P* = 0.001
Attention	-0.06 (-0.10, -0.01)	-2.568, *P* = 0.010	-0.04 (-0.08, 0.01)	-1.667, *P* = 0.096	-0.03 (-0.07, 0.01)	-1.392, *P* = 0.164
	△OCD-Memory					
Memory	-0.09 (-0.15, -0.03)	-3.106, *P* = 0.002	-0.05 (-0.11, 0.01)	-1.785, *P* = 0.075	-0.05 (-0.11, 0.01)	-1.597, *P* = 0.111
	△OCD-Language					
Language	-0.05 (-0.11, 0.01)	-1.725, *P* = 0.085	-0.03 (-0.09, 0.02)	-1.158, *P* = 0.247	-0.03 (-0.09, 0.03)	-0.934, *P* = 0.351
	△OCD-Execution					
Execution	-0.08 (-0.15, -0.01)	-2.234, *P* = 0.026	-0.05 (-0.12, 0.01)	-1.461, *P* = 0.144	-0.04 (-0.11, 0.03)	-1.252, *P* = 0.211
	△OCD-Attention					
Attention	-0.04 (-0.09, 0.01)	-1.690, *P* = 0.091	-0.03 (-0.08, 0.02)	-1.174, *P* = 0.240	-0.02 (-0.07, 0.03)	-0.643, *P* = 0.520

Results were derived from linear regression models. Model 1: Crude Model; Model 2: Demographic adjusted model (adjusted variables: age, education, sex, and residence); Model 3: Full covariate adjusted model (adjusted variables: sex, age, education, residence, marriage, stable income, satisfaction with income, living alone, number of living siblings, number of close friends, frequency of interacting with neighbors, personality, smoking, drinking, physical activities, intellectual activities, hypertension, diabetes, coronary heart disease, hyperlipidemia, cerebrovascular disease, insomnia, and GDS). OCD: Objective cognitive domains; SCD: subjective cognitive decline; GDS: geriatric depression scale; CI: confidence interval; Δ: change.

Supplementary Table 5. The association between baseline SCD domains and the occurrence of MCI and dementia

Baseline SCD domain	Incident MCI HR (95%CI)	*P* value	Incident dementia HR (95%CI)	*P* value
Global	0.99 (0.88, 1.12)	*P* = 0.909	0.86 (0.58, 1.28)	*P* = 0.462
Memory	0.97 (0.89, 1.06)	*P* = 0.541	0.76 (0.56, 1.04)	*P* = 0.082
Language	1.02 (0.93, 1.12)	*P* = 0.657	0.69 (0.51, 0.94)	*P* = 0.020
Execution	1.07 (0.97, 1.17)	*P* = 0.168	0.73 (0.51, 1.02)	*P* = 0.072
Attention	1.02 (0.93, 1.12)	*P* = 0.718	0.89 (0.66, 1.18)	*P* = 0.413

Results were derived from Cox proportional hazards models. Full covariate adjusted model (adjusted variables: sex, age, education, residence, marriage, satisfaction with income, living alone, number of living siblings, number of close friends, frequency of interacting with neighbors, personality, smoking, drinking, physical activities, intellectual activities, hypertension, diabetes, coronary heart disease, hyperlipidemia, cerebrovascular disease, insomnia, and GDS). MCI: Mild cognitive impairment; SCD: subjective cognitive decline; GDS: geriatric depression scale; HR: Hazard Ratio.

Supplementary Table 6. The association between endline SCD domains and the occurrence of MCI and dementia

Endline SCD domain	Incident MCI HR (95%CI)	*P* value	Incident dementia HR (95%CI)	*P* value
Global	1.17 (1.01, 1.24)	*P* = 0.043	1.75 (1.15, 2.67)	*P* = 0.009
Memory	1.03 (0.97, 1.13)	*P* = 0.526	1.34 (0.96, 1.87)	*P* = 0.086
Language	1.08 (0.98, 1.17)	*P* = 0.102	1.44 (1.11, 1.86)	*P* = 0.005
Execution	1.10 (1.01, 1.20)	*P* = 0.038	1.33 (1.05, 1.68)	*P* = 0.017

Attention	1.11	(1.02, 1.21)	*P* = 0.020	1.49 (1.18, 1.89)	*P* = 0.001

Results were derived from Cox proportional hazards models. Full covariate adjusted model (adjusted variables: sex, age, education, residence, marriage, satisfaction with income, living alone, number of living siblings, number of close friends, frequency of interacting with neighbors, personality, smoking, drinking, physical activities, intellectual activities, hypertension, diabetes, coronary heart disease, hyperlipidemia, cerebrovascular disease, insomnia, and GDS). MCI: Mild cognitive impairment; SCD: subjective cognitive decline; GDS: geriatric depression scale; HR: Hazard Ratio.

Supplementary Table 7. The association between SCD domains change and the occurrence of MCI and dementia

△ SCD domain	**Incident MCI HR (95%CI)**		***P* value**	**Incident dementia HR (95%CI)**	***P* value**
Global	1.16	(1.03, 1.31)	*P* = 0.017	2.00 (1.28, 3.16)	*P* = 0.002
Memory	1.06	(0.97, 1.16)	*P* = 0.214	1.26 (0.91, 1.73)	*P* = 0.160
Language	1.07	(0.98, 1.16)	*P* = 0.129	1.40 (1.10, 1.79)	*P* = 0.006
Execution	1.08	(0.99, 1.17)	*P* = 0.085	1.29 (1.04, 1.60)	*P* = 0.018
Attention	1.09	(1.00, 1.19)	*P* = 0.060	1.43 (1.13, 1.80)	*P* = 0.003

Results were derived from Cox Proportional Hazards models. Full covariate adjusted model (adjusted variables: sex, age, education, residence, marriage, satisfaction with income, living alone, number of living siblings, number of close friends, frequency of interacting with neighbors, personality, smoking, drinking, physical activities, intellectual activities, hypertension, diabetes, coronary heart disease, hyperlipidemia, cerebrovascular disease, insomnia, and GDS). MCI: Mild cognitive impairment; SCD:

subjective cognitive decline; GDS: geriatric depression scale; Δ: change; HR: Hazard Ratio.

Supplementary Table 8. The association between the baseline SCD domains and objective cognitive domains change by age stratification

Baseline SCD domain	**Age 60-69 β (95%CI)**	**t, *P* value**	**Age ≥ 70 β (95%CI)**	**t, *P* value**
Global	△OCD-Memory 0.02 (-0.08, 0.12)	0.313, *P* = 0.754	-0.03 (-0.11, 0.05)	-0.739, *P* = 0.459
	△OCD-Language 0.03 (-0.07, 0.14)	0.617, *P* = 0.538	-0.00 (-0.08, 0.08)	-0.016, *P* = 0.986
	△OCD-Execution 0.03 (-0.10, 0.15)	0.394, *P* = 0.693	0.03 (-0.08, 0.14)	0.533, *P* = 0.594
	△OCD-Attention 0.04 (-0.05, 0.12)	0.856, *P* = 0.391	-0.02 (-0.08, 0.08)	-0.451, *P* = 0.652
	△OCD-Global 0.05 (-0.03, 0.14)	1.204, *P* = 0.228	-0.06 (-0.08, 0.08)	-1.690, *P* = 0.091
Memory	△OCD-Global 0.06 (-0.01, 0.13)	1.757, *P* = 0.079	0.01 (-0.05, 0.06)	0.209, *P* = 0.834
Language	-0.02 (-0.09, 0.05)	-0.419, *P* = 0.675	0.01 (-0.04, 0.07)	0.469, p = 0.639
Execution	0.02 (-0.06 -0.10)	0.376, *P* = 0.706	-0.00 (-0.06, 0.06)	-0.056, *P* = 0.955

Attention	-0.06 (-0.10, -0.01)	-0.419, 0.675	*P* =	0.01 (-0.04, 0.07)	0.469, *P* = 0.639
	△OCD-Memory				
Memory	0.04 (-0.04, 0.13)	0.985, 0.338	*P* =	-0.04 (-0.11, 0.03)	-1.142, *P* = 0.253
	△OCD-Language				
Language	-0.02 (-0.09, 0.06)	-0.376, 0.707	*P* =	0.03 (-0.03, 0.10)	0.965, *P* = 0.334
	△OCD-Execution				
Execution	0.07 (-0.05, 0.19)	1.070, 0.284	*P* =	-0.11 (-0.21, -0.01)	-2.137, *P* = 0.033
	△OCD-Attention				
Attention	0.00 (-0.07, 0.08)	0.129, 0.897	*P* =	0.03 (-0.05, 0.10)	0.702, *P* = 0.483

Results were derived from linear regression models. Full covariate adjusted (adjusted variables: sex, age, education, residence, marriage, stable income, satisfaction with income, living alone, number of living siblings, number of close friends, frequency of interacting with neighbors, personality, smoking, drinking, physical activities, intellectual activities, hypertension, diabetes, coronary heart disease, hyperlipidemia, cerebrovascular disease, insomnia, and GDS). OCD: Objective cognitive domains; SCD: subjective cognitive decline; CI: confidence interval; Δ: change.

Supplementary Table 9. The association between the endline SCD domains and objective cognitive domains change by age stratification

Endline SCD domain	**Age 60-69 β (95%CI)**	***t*, *P* value**	**Age ≥ 70 β (95%CI)**	***t*, *P* value**
Global	△OCD-Memory			
	-0.02 (-0.10, 0.09)	-0.143, *P* =	-0.13 (-0.20,	-3.394, *P* < 0.001

		0.886		-0.05)	
	△OCD-Language				
	-0.03 (-0.10, 0.09)	-0.136, 0.891	*P* =	-0.08 (-0.15, -0.01)	-2.178, *P* = 0.029
	△OCD-Execution				
	-0.04 (-0.15, 0.08)	-0.610, 0.542	*P* =	0.03 (-0.06, 0.13)	0.651, *P* = 0.515
	△OCD-Attention				
	-0.14 (-0.22, -0.06)	-3.341, 0.008	*P* =	-0.04 (-0.12, 0.04)	-1.001, *P* = 0.317
	△OCD-Global				
	-0.08 (-0.16, -0.01)	-2.135, 0.003	*P* =	-0.12 (-0.18, -0.06)	-4.150, *P* < 0.001
	△OCD-Global				
Memory	-0.04 (-0.11, 0.03)	-1.151, 0.249	*P* =	-0.04 (-0.09, 0.02)	-1.416, *P* = 0.156
Language	-0.08 (-0.15, -0.01)	-2.189, 0.003	*P* =	0.00 (-0.06, 0.06)	0.083, *P* = 0.969
Execution	-0.15 (-0.23 -0.07)	-3.739, 0.001	*P* <	-0.04 (-0.10, 0.02)	-1.414, *P* = 0.157
Attention	-0.05 (-0.12, -0.02)	-1.385, 0.166	*P* =	-0.02 (-0.07, 0.04)	-0.550, *P* = 0.582
	△OCD-Memory				
Memory	-0.02 (-0.10, 0.07)	-0.340, 0.733	*P* =	-0.10 (-0.07, -0.03)	-2.788, *P* = 0.005
	△OCD-Language				
Language	-0.08 (-0.16, 0.00)	-1.894, 0.058	*P* =	0.03 (-0.03, 0.10)	0.950, *P* = 0.341
	△OCD-Execution				

Execution	-0.12 (-0.24, -0.00)	-1.965, *P* = 0.050	-0.02 (-0.13, 0.08)	-0.432, *P* = 0.665
	△OCD-Attention			
Attention	-0.05 (-0.12, 0.03)	-1.280, *P* = 0.020	0.01 (-0.07, 0.08)	0.175, *P* = 0.860

Results were derived from linear regression models. Full covariate adjusted (adjusted variables: sex, age, education, residence, marriage, stable income, satisfaction with income, living alone, number of living siblings, number of close friends, frequency of interacting with neighbors, personality, smoking, drinking, physical activities, intellectual activities, hypertension, diabetes, coronary heart disease, hyperlipidemia, cerebrovascular disease, insomnia, and GDS). OCD: Objective cognitive domains; SCD: subjective cognitive decline; CI: confidence interval; Δ: change.

Supplementary Table 10. The association between the SCD domains change and objective cognitive domains change by age stratification

△ SCD domain	**Age 60-69 β (95%CI)**	***t*, *P* value**	**Age ≥ 70 β (95%CI)**	***t*, *P* value**
Global	△OCD-Memory			
	0.03 (-0.07, 0.12)	0.525, *P* = 0.599	-0.10 (-0.17, -0.03)	-2.674, *P* = 0.007
	△OCD-Language			
	0.02 (-0.08, 0.12)	0.429, *P* = 0.667	-0.06 (-0.14, 0.01)	-1.724, *P* = 0.085
	△OCD-Execution			
	-0.02 (-0.14, 0.09)	-0.306, *P* = 0.759	0.02 (-0.07, 0.12)	0.484, *P* = 0.628
	△OCD-Attention			
	-0.11 (-0.19, -0.03)	-3.341, *P* = 0.006	-0.03 (-0.11, 0.05)	-0.681, *P* = 0.495

	△OCD-Global					
	-0.06 (-0.14, 0.02)	-1.415, 0.157	*P*	=	-0.09 (-0.15, -0.03)	-3.078, *P* = 0.002
	△OCD-Global					
Memory	-0.04 (-0.10, 0.02)	-1.229, 0.219	*P*	=	-0.04 (-0.09, 0.01)	-1.399, *P* = 0.161
Language	-0.06 (-0.13, 0.01)	-1.744, 0.081	*P*	=	0.00 (-0.05, 0.06)	0.093, *P* = 0.925
Execution	-0.11 (-0.19 -0.04)	-3.135, 0.001	*P*	=	-0.04 (-0.09, 0.01)	-1.608, *P* = 0.108
Attention	-0.05 (-0.12, -0.02)	-1.523, 0.128	*P*	=	-0.01 (-0.06, 0.04)	-0.454, *P* = 0.649
	△OCD-Memory					
Memory	-0.02 (-0.10, 0.07)	-0.398, 0.690	*P*	=	-0.07 (-0.14, -0.01)	-2.788, *P* = 0.034
	△OCD-Language					
Language	-0.05 (-0.13, 0.03)	-1.268, 0.205	*P*	=	0.03 (-0.03, 0.10)	1.110, *P* = 0.267
	△OCD-Execution					
Execution	-0.11 (-0.22, -0.00)	-1.998, 0.046	*P*	=	-0.01 (-0.10, 0.09)	-0.110, *P* = 0.912
	△OCD-Attention					
Attention	-0.04 (-0.11, 0.03)	-1.120, 0.263	*P*	=	-0.00 (-0.07, 0.07)	0.175, *P* = 0.950

Results were derived from linear regression models. Full covariate adjusted (adjusted variables: sex, age, education, residence, marriage, stable income, satisfaction with income, living alone, number of living siblings, number of close friends, frequency of interacting with neighbors, personality, smoking, drinking, physical activities, intellectual activities, hypertension, diabetes, coronary heart disease, hyperlipidemia, cerebrovascular disease, insomnia, and GDS). OCD:

Objective cognitive domains; SCD: subjective cognitive decline; CI: confidence interval; Δ: change.

Supplementary Table 11. The association between the baseline SCD domains and objective cognitive domains change by sex stratification

Baseline SCD domain	Male β (95%CI)	*t*, *P* value	Female β (95%CI)	*t*, *P* value
Global	△OCD-Memory			
	-0.06 (-0.15, 0.03)	-1.358, *P* = 0.175	0.03 (-0.06, 0.13)	0.717, *P* = 0.473
	△OCD-Language			
	-0.01 (-0.11, 0.08)	-0.304, *P* = 0.761	0.02 (-0.07, 0.10)	0.346, *P* = 0.729
	△OCD-Execution			
	0.03 (-0.07, 0.14)	0.599, *P* = 0.549	0.05 (-0.08, 0.17)	0.748, *P* = 0.455
	△OCD-Attention			
	-0.02 (-0.10, 0.06)	-0.478, *P* = 0.632	0.03 (-0.07, 0.12)	0.509, *P* = 0.611
	△OCD-Global			
	-0.05 (-0.12, 0.03)	-1.222, *P* = 0.222	0.02 (-0.08, 0.08)	0.394, *P* = 0.694
	△OCD-Global			
Memory	-0.01 (-0.07, 0.05)	-0.496, *P* = 0.638	0.09 (0.02, 0.15)	2.753, *P* = 0.006
Language	-0.04 (-0.10, 0.03)	-1.037, *P* = 0.300	0.03 (-0.03, 0.09)	0.971, *P* = 0.331
Execution	0.00 (-0.07 -0.07)	0.032, *P* = 0.973	0.00 (-0.07, 0.07)	0.012, *P* = 0.989

Attention	-0.04 (-0.11, 0.02)	-1.374, 0.169	*P*	=	0.04 (-0.02, 0.10)	1.250, 0.021	*P*	=
	△OCD-Memory							
Memory	-0.04 (-0.11, 0.03)	-1.093, 0.274	*P*	=	0.03 (-0.04, 0.11)	0.844, 0.398	*P*	=
	△OCD-Language							
Language	0.00 (-0.08, 0.08)	0.029, 0.976	*P*	=	0.01 (-0.05, 0.07)	0.318, 0.750	*P*	=
	△OCD-Execution							
Execution	-0.06 (-0.16, 0.04)	-1.166, 0.244	*P*	=	0.02 (-0.09, 0.14)	0.407, 0.684	*P*	=
	△OCD-Attention							
Attention	-0.00 (-0.07, 0.06)	-0.084, 0.933	*P*	=	0.03 (-0.05, 0.10)	0.661, 0.509	*P*	=

Results were derived from linear regression models. Full covariate adjusted (adjusted variables: sex, age, education, residence, marriage, stable income, satisfaction with income, living alone, number of living siblings, number of close friends, frequency of interacting with neighbors, personality, smoking, drinking, physical activities, intellectual activities, hypertension, diabetes, coronary heart disease, hyperlipidemia, cerebrovascular disease, insomnia, and GDS). OCD: Objective cognitive domains; SCD: subjective cognitive decline; CI: confidence interval; Δ: change.

Supplementary Table 12. The association between the endline SCD domains and objective cognitive domains change by sex stratification

Endline SCD domain	**Male β (95%CI)**	***t*, *P* value**	**Female β (95%CI)**	***t*, *P* value**
Global	△OCD-Memory			
	-0.09 (-0.17,	-2.223, *P* =	-0.05 (-0.14, 0.03)	-1.247, *P* =

	-0.01)	0.026				0.212		
	△OCD-Language							
	-0.01 (-0.10, 0.07)	-0.269, 0.788	*P*	=	-0.08 (-0.16, -0.01)	-2.104, 0.035	*P*	=
	△OCD-Execution							
	0.03 (-0.17, 0.03)	0.656, 0.511	*P*	=	-0.00 (-0.12, 0.11)	-0.031, 0.974	*P*	=
	△OCD-Attention							
	-0.02 (-0.10, 0.05)	-0.659, 0.509	*P*	=	-0.15 (-0.24, -0.06)	-3.411, 0.001	*P*	<
	△OCD-Global							
	-0.08 (-0.15, -0.02)	-2.506, 0.012	*P*	=	-0.13 (-0.19, -0.06)	-3.832, 0.001	*P*	<
	△OCD-Global							
Memory	-0.05 (-0.11, 0.10)	-1.644, 0.100	*P*	=	-0.02 (-0.08, 0.04)	-0.600, 0.548	*P*	=
Language	-0.07 (-0.14, 0.00)	-1.917, 0.554	*P*	=	-0.01 (-0.07, 0.05)	-0.203, 0.839	*P*	=
Execution	-0.10 (-0.17 -0.03)	-2.809, 0.005	*P*	=	-0.07 (-0.14, -0.01)	-2.174, 0.029	*P*	=
Attention	-0.02 (-0.08, 0.05)	-0.475, 0.634	*P*	=	-0.04 (-0.10, 0.02)	-1.371, 0.170	*P*	=
	△OCD-Memory							
Memory	-0.08 (-0.15, -0.00)	-1.994, 0.046	*P*	=	-0.04 (-0.12, 0.04)	-0.896, 0.370	*P*	=
	△OCD-Language							
Language	-0.02 (-0.11, 0.06)	-0.576, 0.564	*P*	=	-0.01 (-0.07, 0.06)	-0.233, 0.816	*P*	=
	△OCD-Execution							

Execution	-0.09 (-0.19, 0.02)	-1.556, P = 0.120	-0.04 (-0.15, 0.08)	-0.606, P = 0.545
	△OCD-Attention			
Attention	-0.00 (-0.07, 0.07)	-0.006, P = 0.995	-0.03 (-0.10, 0.05)	-0.667, P = 0.504

Results were derived from linear regression models. Full covariate adjusted (adjusted variables: sex, age, education, residence, marriage, stable income, satisfaction with income, living alone, number of living siblings, number of close friends, frequency of interacting with neighbors, personality, smoking, drinking, physical activities, intellectual activities, hypertension, diabetes, coronary heart disease, hyperlipidemia, cerebrovascular disease, insomnia, and GDS). OCD: Objective cognitive domains; SCD: subjective cognitive decline; CI: confidence interval; Δ: change.

Supplementary Table 13. The association between the SCD domains change and objective cognitive domains change by sex stratification

△ SCD domain	**Male β (95%CI)**	***t*, *P* value**	**Female β (95%CI)**	***t*, *P* value**
Global	△OCD-Memory			
	-0.06 (-0.14, 0.02)	-1.446, P = 0.149	-0.02 (-0.11, 0.06)	-0.487, P = 0.626
	△OCD-Language			
	-0.01 (-0.10, 0.07)	-0.319, P = 0.750	-0.04 (-0.12, 0.04)	-0.879, P = 0.379
	△OCD-Execution			
	0.05 (-0.44, 0.15)	1.073, P = 0.284	-0.04 (-0.15, 0.08)	-0.647, P = 0.517
	△OCD-Attention			
	-0.01 (-0.08, 0.07)	-0.165, P = 0.869	-0.14 (-0.23, -0.05)	-3.156, P = 0.002

	△OCD-Global						
	-0.05 (-0.12, 0.01)	-1.575, 0.115	*P*	=	-0.10 (-0.17, -0.03)	-2.923, 0.003	*P* =
	△OCD-Global						
Memory	-0.04 (-0.10, 0.02)	-1.270, 0.204	*P*	=	-0.03 (-0.09, 0.03)	-1.034, 0.301	*P* =
Language	-0.05 (-0.12, 0.01)	-1.584, 0.113	*P*	=	0.00 (-0.05, 0.06)	0.074, 0.940	*P* =
Execution	-0.08 (-0.14 -0.02)	-2.590, 0.009	*P*	=	-0.06 (-0.12, 0.00)	-1.924, 0.054	*P* =
Attention	-0.01 (-0.07, 0.06)	-0.229, 0.819	*P*	=	-0.04 (-0.10, 0.01)	-1.486, 0.137	*P* =
	△OCD-Memory						
Memory	-0.04 (-0.12, 0.03)	-1.231, 0.219	*P*	=	-0.04 (-0.12, 0.04)	-0.947, 0.344	*P* =
	△OCD-Language						
Language	-0.01 (-0.09, 0.06)	-0.328, 0.743	*P*	=	0.01 (-0.05, 0.07)	0.465, 0.641	*P* =
	△OCD-Execution						
Execution	-0.06 (-0.15, 0.04)	-1.238, 0.216	*P*	=	-0.03 (-0.13, 0.08)	-0.517, 0.605	*P* =
	△OCD-Attention						
Attention	-0.00 (-0.07, 0.06)	-0.137, 0.890	*P*	=	-0.03 (-0.10, 0.05)	-0.660, 0.510	*P* =

Results were derived from linear regression models. Full covariate adjusted (adjusted variables: sex, age, education, residence, marriage, stable income, satisfaction with income, living alone, number of living siblings, number of close friends, frequency of interacting with neighbors, personality, smoking, drinking, physical activities, intellectual activities, hypertension, diabetes, coronary heart

disease, hyperlipidemia, cerebrovascular disease, insomnia, and GDS). OCD: Objective cognitive domains; SCD: subjective cognitive decline; CI: confidence interval; Δ: change.

Supplementary Table 14. Results of linear mixed-effects models with objective cognitive domains as the outcome

SCD domain × time	△ OCD domain	Estimate (95%CI)	*P* value
Memory × time	OCD-Memory	0.00 (-0.02, 0.02)	0.744
Memory × time	OCD-Global	-0.01 (-0.02, 0.01)	0.514
Language × time	OCD-Language	-0.00 (-0.02, 0.01)	0.720
Language × time	OCD-Global	-0.02 (-0.03, 0.00)	0.054
Execution × time	OCD-Execution	-0.02 (-0.05, 0.00)	0.056
Execution × time	OCD-Global	-0.02 (-0.04, -0.01)	0.025
Attention × time	OCD-Attention	-0.01 (-0.03, 0.01)	0.253
Attention × time	OCD-Global	-0.01 (-0.03, 0.00)	0.109
Global × time	OCD-Memory	-0.02 (-0.04, -0.01)	0.028
Global × time	OCD-Language	-0.00 (-0.02, 0.02)	0.605
Global × time	OCD-Execution	-0.03 (-0.05, -0.01)	0.012
Global × time	OCD-Attention	-0.02 (-0.04, -0.01)	0.023
Global × time	OCD-Global	-0.02 (-0.04, -0.01)	0.001

Models adjusted for sex, age, education, marriage, stable income, satisfaction with income, living alone, number of living siblings, number of close friends, frequency of interacting with neighbors, personality, smoking, drinking, physical activities, intellectual activities, hypertension, diabetes, coronary heart disease, hyperlipidemia, cerebrovascular disease, insomnia, and GDS. OCD: Objective cognitive domains; SCD: subjective cognitive decline; CI: confidence interval.

Supplementary Table 15. Correlations among SCD subdomains at baseline and

VIFs

Baseline SCD domain	Memory	Language	Execution	Attention	VIF
Memory	-	0.353***	0.258***	0.377***	-
Language		-	0.496***	0.475***	1.44
Execution			-	0.536***	1.57
Attention				-	1.53

Values are Pearson correlation coefficients. VIFs were calculated from a linear regression model with memory as the dependent variable and the other three subdomains as predictors. All correlations are statistically significant at $P < 0.001$.

SCD: Subjective cognitive decline; VIF: variance inflation factor.

Supplementary Table 16. Correlations among SCD subdomains at endline and VIFs

Endline SCD domain	Memory	Language	Execution	Attention	VIF
Memory	-	0.312***	0.255***	0.299***	-
Language		-	0.592***	0.524***	1.64
Execution			-	0.618***	1.93
Attention				-	1.73

Values are Pearson correlation coefficients. VIFs were calculated from a linear regression model with memory as the dependent variable and the other three subdomains as predictors. All correlations are statistically significant at $P < 0.001$.

SCD: Subjective cognitive decline; VIF: variance inflation factor.

Supplementary Table 17. Domain-specific worsening patterns based on regression-based reliable change index (RCI ＞ 1.96)

Worsening pattern	N	%
No worsening in any domain	1461	62.8

Worsening in at least one domain	865	37.2
Single-domain worsening	132	5.7
Memory only	6	0.3
Language only	39	1.7
Execution only	57	2.5
Attention only	30	1.3
Two-domain worsening	66	2.8
Three-domain worsening	52	2.2
Four-domain worsening	2	0.1