Supplementary Material

Coping in Mid- to Late Life and Risk of Mild Cognitive Impairment Subtypes and Dementia: A JPHC Saku Mental Health Study

Supplementary Table 1. Number of participants for each coping behaviors frequency (n=1,015).

	Consulting someone		Planning		Positive reappraisal		Avoidance		Fantasizing		Self-blame	
	N (%)		N (%)		N (%)		N (%)		N (%)		N (%)	
Hardly ever	213	(21.0)	177	(17.4)	127	(12.5)	420	(41.4)	319	(31.4)	368	(36.3)
Occasionally	425	(41.9)	275	(27.1)	259	(25.5)	383	(37.7)	375	(36.9)	412	(40.6)
Sometimes	281	(27.7)	268	(26.4)	353	(34.8)	173	(17.0)	238	(23.4)	186	(18.3)
Often	79	(7.8)	258	(25.4)	233	(23.0)	31	(3.1)	63	(6.2)	40	(3.9)
Fairly often	17	(1.7)	37	(3.6)	43	(4.2)	8	(0.8)	20	(2.0)	9	(0.9)
Total	1015	(100)	1015	(100)	1015	(100)	1015	(100)	1015	(100)	1015	(100)

Supplementary Table 2. Odds ratio and 95% confidence intervals for cognitive decline according to coping behaviors after excluding major depressive disorder (n = 930).

	Model 1†	Model 2‡
Coping behavior (Yes/No)	OR (95% CI)	OR (95% CI)
Occurrence of MCI and dementia (N = 327) with cognitively healthy (N = 603) as reference value		
Consulting (28/60)	1.03 (0.62-1.71)	1.03 (0.62-1.71)
Planning (104/175)	1.20 (0.86-1.67)	1.21 (0.87-1.69)
Positive reappraisal (86/175)	0.84 (0.59-1.19)	0.84 (0.59-1.19)
Avoidance (13/21)	1.31 (0.62-2.75)	1.34 (0.64-2.81)
Fantasizing (17/47)	0.65 (0.36-1.20)	0.64 (0.35-1.18)
Self-blame (14/24)	1.04 (0.51-2.11)	1.03 (0.51-2.11)
Occurrence of multiple-domain MCI and dementia (N = 215) with cognitively healthy and single-domain MCI (N = 715) as reference value		
Avoidance (12/22)	**2.32 (1.07-5.02)**	**2.37 (1.09-5.15)**
Consulting (18/70)	1.05 (0.58-1.88)	1.05 (0.58-1.89)
Planning (59/220)	0.98 (0.66-1.44)	0.98 (0.67-1.45)
Positive reappraisal (49/212)	0.70 (0.46-1.05)	0.69 (0.46-1.05)
Avoidance (12/22)	**2.32 (1.07-5.02)**	**2.37 (1.09-5.15)**
Fantasizing (14/50)	0.95 (0.49-1.85)	0.93 (0.48-1.82)
Self-blame (11/27)	1.21 (0.56-2.62)	1.21 (0.56-2.62)

Each coping behavior was mutually adjusted. The p-values of the Hosmer-Lemeshow test were above 0.05 for all the analyses. † Model 1. Adjusted for sex, age, and education (junior high school, high school, college/other). ‡ Model 2. Adjusted for sex, age, education, depression, ischemic heart disease, diabetes mellitus, regular alcohol consumption, and smoking habit. OR, odds ratio; CI, confidence interval. Significance is shown in bold.

Supplementary Table 3A. Odds ratios and 95% confidence intervals for MCI and dementia with cognitive healthy as the reference values according to coping strategies (n = 1,015).

	Model 1†				Model 2‡			
	Number (%)	OR (95%CI)		p for trend	Number (%)	OR (95%CI)		p for trend
Occurrence of MCI and dementia (N = 365) with cognitively healthy (N = 650) as the reference value								
Coping Strategy (0-3)								
Approach-oriented								
0	579 (57.0)	1.00	(Reference)	0.96	577 (56.8)	1.00	(Reference)	0.88
1	234 (23.1)	0.82	(0.59- 1.14)		234 (23.1)	0.82	(0.58- 1.14)	
2	173 (17.0)	1.07	(0.75- 1.54)		173 (17.0)	1.09	(0.76- 1.57)	
3	29 (2.9)	1.03	(0.46- 2.31)		29 (2.9)	1.08	(0.48- 2.42)	
Avoidance-oriented								
0	872 (85.9)	1.00	(Reference)	0.91	870 (85.7)	1.00	(Reference)	0.71
1	117 (11.5)	0.82	(0.54- 1.25)		117 (11.5)	0.79	(0.51- 1.21)	
2	24 (2.4)	1.66	(0.72- 3.81)		24 (2.4)	1.54	(0.66- 3.59)	
3	2 (0.2)	0.00	(0.00- .		2 (0.2)	0.00	(0.00- .	

Each coping strategy was mutually adjusted. The p-values of the Hosmer-Lemeshow test were above 0.05 for all the analyses. Coping behaviors were dichotomized into yes or no: hardly ever, occasionally, and sometimes as "no" and often and fairly often as "yes." Approach strategy is the sum of following coping behaviors: Consult, Planning, Positive. Avoidance strategy is the sum of the following coping behaviors: Avoid, Fantasizing, Self-blame. †Model 1. Adjusted for sex, age, and education (junior high school, high school, college/other); ‡Model 2. Adjusted for sex, age, education, depression, ischemic heart disease, diabetes mellitus, regular alcohol consumption, and smoking habit. OR, odds ratio; CI, confidence interval. Significance is shown in bold.

Supplementary Table 3B. Odds ratios and 95% confidence intervals for the occurrence of multiple-domain MCI and dementia with cognitively healthy and single-domain MCI as the reference values according to coping strategies (n = 1,015).

	Model 1†			Model 2‡		
	Number (%)	OR (95%CI)	p for trend	Number (%)	OR (95%CI)	p for trend
Occurrence of multiple-domain MCI and dementia (N = 249) with cognitively healthy and single-domain MCI (N = 766) as the reference values						
Coping Strategy (0-3)						
Approach-oriented						
0	579 (57.0)	1.00 (Reference)	0.89	577 (56.8)	1.00 (Reference)	0.28
1	234 (23.1)	0.74 (0.51- 1.08)		234 (23.1)	0.74 (0.51- 1.08)	
2	173 (17.0)	0.87 (0.57- 1.31)		173 (17.0)	0.89 (0.58- 1.34)	
3	29 (2.9)	0.69 (0.25- 1.88)		29 (2.9)	0.74 (0.27- 2.02)	
Avoidance-oriented						
0	872 (85.9)	1.00 (Reference)	0.18	870 (85.7)	1.00 (Reference)	0.40
1	117 (11.5)	1.16 (0.74- 1.82)		117 (11.5)	1.08 (0.68- 1.71)	
2	24 (2.4)	2.08 (0.88- 4.92)		24 (2.4)	1.77 (0.73- 4.28)	
3	2 (0.2)	0.00 (0.00- .		2 (0.2)	0.00 (0.00- .	

Each coping strategy was mutually adjusted. The p-values of the Hosmer-Lemeshow test were above 0.05 for all the analyses. Coping behaviors were dichotomized into yes or no: hardly ever, occasionally, and sometimes as "no" and often and fairly often as "yes." Approach strategy is the sum of following coping behaviors; Consult, Planning, Positive. Avoidance strategy is the sum of the following coping behaviors: Avoid, Fantasizing, Self-blame. †Model 1. Adjusted for sex, age, and education (junior high school, high school, college/other); ‡Model 2. Adjusted for sex, age, education, depression, ischemic heart disease, diabetes mellitus, regular alcohol consumption, and smoking habit. OR, odds ratio; CI, confidence interval. Significance is shown in bold.

Supplementary Table 4. Characteristics in 10-year follow-up questionnaire survey among participants who did and did not participate in the mental health screening (total n = 8,588[†])

Characteristics at 10-year follow-up	Non-participation (n=7,330)		Participation (n=1,258)		p
Men, n (%)	3,416	(46.6)	532	(42.3)	**<0.01**
Age at 10-years, mean y (SD)	59.7	(5.9)	57.9	(5.5)	**<0.01**
Self-reported past medical history, n (%)					
IHD	148	(2.0)	26	(2.1)	0.91
DM	383	(5.2)	43	(3.4)	**<0.01**
Alcohol drinking, n (%)					
Regular	2,900	(39.6)	534	(42.5)	0.053
Smoking, n (%)					
Current	1,703	(23.2)	200	(15.9)	**<0.01**
Coping behaviors[‡], n (%)					
Consulting (yes)	485	(6.6)	109	(8.7)	0.11
Planning (yes)	1,345	(18.4)	323	(25.7)	**<0.01**
Positive reappraisal (yes)	1,356	(18.5)	300	(23.9)	**0.023**
Avoidance (yes)	184	(2.5)	44	(3.5)	0.22
Fantasizing (yes)	401	(5.5)	88	(7.0)	0.36
Self-blame (yes)	274	(3.7)	52	(4.1)	0.78

[†]Those who died or were lost to follow-up before the invitation for the mental health screening were excluded.

[‡]Coping behaviors were dichotomized into yes or no; hardly ever, occasionally, and sometimes as "no" and often and fairly often as "yes."

IHD, ischemic heart disease; DM, diabetes mellitus