Table S1. *Means, standard deviations, and correlations of all studied variables*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1. age (years) | 68.14 | 5.34 |   |   |   |   |   |   |   |   |   |   |
| 2. education (years) | 5.68 | 4.33 | -.38\*\* |   |   |   |   |   |   |   |   |   |
| 3. Follow-up (years) | 1.93 | 1.03 | <.01 | .08 |   |   |   |   |   |   |   |   |
| 4. GDSbaseline | 1.47 | 1.78 | .15 | .03 | -.10 |   |   |   |   |   |   |   |
| 5. RAVLT-Ibaseline | 41.23 | 11.15 | -.22\* | .38\*\* | .13 | -.13 |   |   |   |   |   |   |
| 6. RAVLT-Dbaseline | 8.80 | 3.28 | -.21\* | .28\*\* | .14 | -.12 | .86\*\* |   |   |   |   |   |
| 7. RAVLT-Rbaseline | 13.38 | 1.94 | -.04 | .04 | -.05 | -.16 | .44\*\* | .46\*\* |   |   |   |   |
| 8. GDSfollow-up | 1.79 | 2.40 | .16 | -.12 | .06 | .16 | -0.24 | -.29\* | -.28\* |   |   |   |
| 9. RAVLT-Ifollow-up | 43.69 | 11.97 | -.34\*\* | .37\*\* | .03 | -.09 | .74\*\* | .71\*\* | .36\*\* | -.32\*\* |   |   |
| 10. RAVLT-Dfollow-up | 9.22 | 3.48 | -.30\*\* | .30\*\* | .01 | -.15 | .65\*\* | .73\*\* | .31\*\* | -.27\* | .82\*\* |   |
| 11. RAVLT-Rfollow-up | 13.60 | 1.87 | -.29\*\* | .28\*\* | -.04 | -.08 | .40\*\* | .50\*\* | .39\*\* | .02 | .53\*\* | .50\*\* |

*Note.* M = Mean; SD = standard deviation; GDS = Geriatric Depression Scale; RAVLT = Rey Auditory Verbal Learning Test; I = Immediate recall; D = Delayed recall; R = Recognition. \* *p* < .05; \*\* *p* < .01.

Table S2. *Fit indices of the tested CFA models*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | *χ*2 (*df*) | CFI | RMSEA | SRMR | AIC | BIC |
| Unconstrained | 56.23 (31) | .957 | .071 | .076 | 7765 | 7907 |
| Longitudinally invariant  | 60.73 (33) | .953 | .072 | .076 | 7767 | 7902 |

*Note.* df= degrees of freedom; CFI = Comparative Fit Index; RMSEA= Root Mean Square Error of Approximation; standardized root mean square residual; AIC = Akaike Information Criterion; BIC= Bayesian Information Criterion

.22\*

**Memorybaseline**

**GDSbaseline**

**GDSFollow-up**

**MemoryFollow-up**

.75\*\*\* (.06)

-.01 (.10)

-.06 (.06)

-.04

RAVLT-Ibaseline

RAVLT-Dbaseline

RAVLT-Rbaseline

RAVLT-Ifollow-up

RAVLT-Dfollow-up

RAVLT-Rfollow-up

.20\*\*\*

-.38\*\* (.09)

.28

.54\*

Figure S1.Robust Maximum likelihood estimation of the cross-lagged model with age, sex , education and follow-up duration included as covariates. Figures in parentheses represent standard errors of the estimates. Straight lines represent regression paths. Curve lines represent residual covariance. Fit indices indicated unsatisfactory fit (*χ*2 (39)= 87.20; CFI = .923; RMSEA= .088; SRMR= .095; AIC= 8630; BIC = 8787). GDS = Geriatric Depression Scale; RAVLT = Rey Auditory Verbal Learning Test; I = Immediate recall; D = Delayed recall; R = Recognition. \**p* > .05, \*\**p* > .01, \*\*\**p* > .001.

.22\*

**Memorybaseline**

**GDSbaseline**

**GDSFollow-up**

**MemoryFollow-up**

.75\*\*\* (.06)

-.01 (.10)

-.06 (.06)

-.06

RAVLT-Ibaseline

RAVLT-Dbaseline

RAVLT-Rbaseline

RAVLT-Ifollow-up

RAVLT-Dfollow-up

RAVLT-Rfollow-up

.27\*\*\*

-.40\*\* (.09)

.33

.51\*

Figure S2.Robust Maximum likelihood estimation of the cross-lagged model with age, sex, clinical dementia ratings and follow-up duration included as covariates. Figures in parentheses represent standard errors of the estimates. Straight lines represent regression paths. Curve lines represent residual covariance. Fit indices indicated unsatisfactory fit (*χ*2 (39)= 84.67; CFI = .923; RMSEA= .086; SRMR= .100; AIC= 7833; BIC = 7990). GDS = Geriatric Depression Scale; RAVLT = Rey Auditory Verbal Learning Test; I = Immediate recall; D = Delayed recall; R = Recognition. \**p* > .05, \*\**p* > .01, \*\*\**p* > .001.

Table S1. Details on extracting *β* and SE*β* from each included study.

|  |  |  |  |
| --- | --- | --- | --- |
| Study | Reported? | Information used to compute *β* and SE*β* | Method for obtaining *β* and/or SE*β* |
| *β*  | SE*β* |
| Gerstorf et al. (2009) | no | no | B, SEB and SD | *β*1>2= *B*1>2\* SD1/SD2SE*β*(1>2)=SE*B*(1>2) \* SD1/SD2 |
| Bunce et al. (2014) | no | no | B, SD and *p*Note: only SDmemory was reported. SDdepression wasobtained from Bunce et al.1 | *β*1>2 = *B*1>2\* SD1/SD2SE*β*(1>2)=) =B(1>2)/ Z(*p/2*)a |
| Zahodne et al. (2014) | no | no | B, SEB and SD | *β*1>2 = *B*1>2\* SD1/SD2SE*β*(1>2)=SE*B*(1>2) \* SD1/SD2 |
| Brailean et al. (2014) | yes | yes |  |  |
| Perrino et al. (2008) | yes | no | *β* and *p* | SE*β*(1>2)= *β*1>2/ Z(*p/2*)a |

aAssuming two-tailed tests were carried out

1. Bunce D, Batterham PJ, Mackinnon AJ, Christensen H. Depression, anxiety and cognition in community-dwelling adults aged 70 years and over. *J Psychiatr Res*. 2017;46(12):1662-1666. doi:10.1016/j.jpsychires.2012.08.023.