**Supplementary Document**

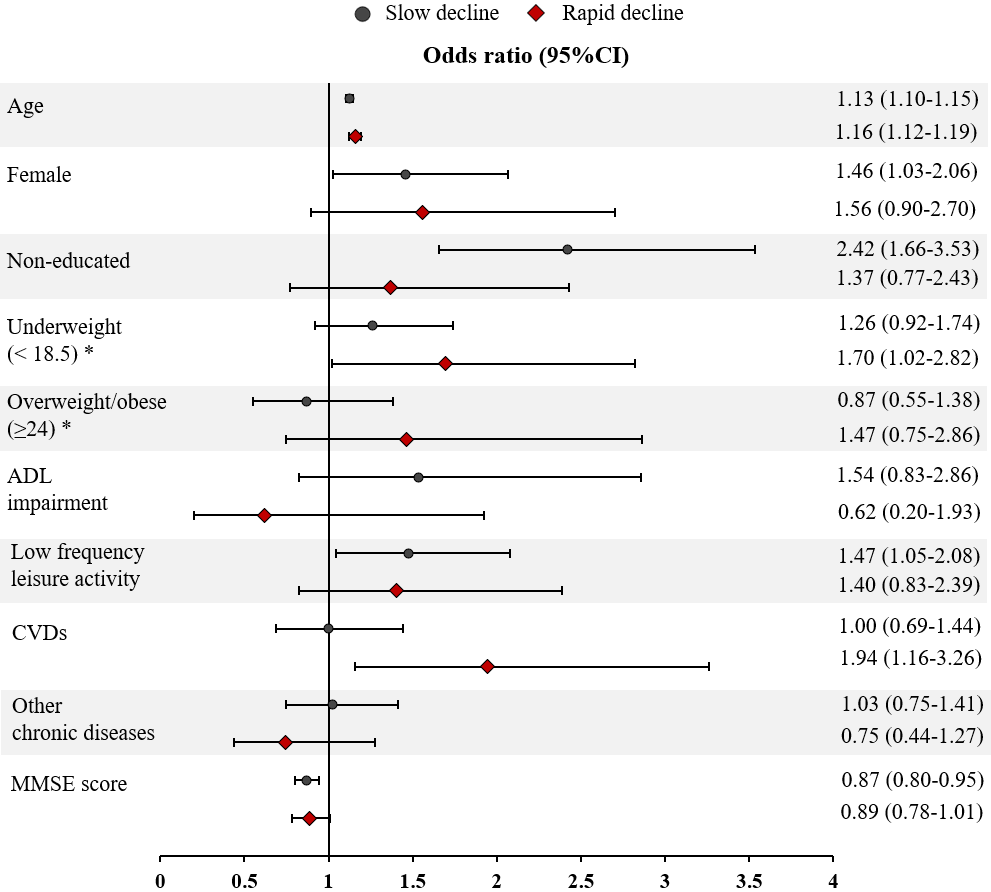
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| **Table S1** The recoding method for education, leisure activities and health status. | | | |
| **Variables** | **Definition** | **Recoding method in SPSS** | |
| Used for the description of baseline characteristics | Used for the Multinomial Logistic Regression Analysis |
| Education | Years of schooling. | 0 = "without schooling" | 0 = “without schooling education” |
| 1 = "1-6 years" | 1 = “having schooling education” |
| 2 = "≥ 6 years" |
| Frequency of leisure activity | The frequency of leisure activity defined as two categorical (low and high). The sum score of the eight activities ranges from 8 to 40, with a low score representing a high frequency. The high frequency was defined as “being scored at 40th percentile or below”, and low frequency as “being scored over 40th percentile”. | 0 = "low frequency leisure activity" | Same as descriptive data |
| 1 = "high frequency leisure activity" |
| Health Status | | | |
| BMI | Body mass index, calculated as weight in kilograms divided by height in meters squared. | 0 = "underweight (< 18.5 kg/m2)" | 1="underweight" |
| 1 = "normal (18.5 - 23.9 kg/m2)" | 2="normal" |
| 2 = "overweight (24 - 27.9 kg/m2)" | 0="combined overweight & obese " |
| 3 = "obese (≥28 kg/m2)" |
| CVDs | Includes four diseases: cardiovascular diseases, hypertension, diabetes heart disease, cerebrovascular disease. | 0 = "CVDs (+), having at least one CVD" | Same as descriptive data |
| 1 = "CVDs (-), without CVD" |
| Other chronic diseases (non-CVDs) | Includes eight diseases: bronchitis, emphysema, pneumonia, asthma; tuberculosis; cancer; gastric or duodenal ulcer and arthritis. | 0 = "non-CVDs (+), having at least one non-CVD" | Same as descriptive data |
| 1 = "non-CVDs (-), without non-CVD" |

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| **Table S2** Average Posterior Probabilities of Group Assignment and Bayesian Information Criterion (BIC) Statistics of Model Fit | | | | | | | |
|  | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | BIC  (N=9311) | BIC (N=2038) |
| 2 groups | 0.94 | 0.99 |  |  |  | -23947.48 | -23939.89 |
| **3 groups** | **0.93** | **0.86** | **0.97** |  |  | **-23778.93** | **-23767.54** |
| 4 groups | 0.92 | 0.90 | 0.80 | 0.97 |  | -23579.13 | -23563.94 |
| 5 groups | 0.92 | 0.91 | 0.81 | 0.89 | 0.97 | -23479.75 | -23460.76 |

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| **Table S3** The Maximum Likelihood Estimates from the Censored Normal Model | | | | | | | |
| **Parameter** | **Estimate** | | **Standard  Error** | | **T for H0: Parameter=0** | |
|
| Intercept | 27.989 | | 0.285 | | 98.104\*\*\* | |
| Linear | -0.746 | | 0.285 | | -2.621\*\* | |
| Quadratic | -0.176 | | 0.064 | | -2.759\*\* | |
| Cubic | 0.014 | | 0.004 | | 3.887\*\*\* | |
| Intercept | 28.179 | | 0.499 | | 56.518\*\*\* | |
| Linear | -3.119 | | 0.647 | | -4.823\*\*\* | |
| Quadratic | 0.885 | | 0.193 | | 4.593\*\*\* | |
| Cubic | -0.096 | | 0.014 | | -6.761\*\*\* | |
| Intercept | 29.526 | | 0.114 | | 259.623\*\*\* | |
| Linear | -0.333 | | 0.047 | | -7.163\*\*\* | |
| Quadratic | 0.016 | | 0.004 | | 4.097\*\*\* | |
| Sigma | 4.555 | | 0.042 | | 108.158\*\*\* | |
| Group membership | |  | |  | |  | |
| Group 1 (%) | | 14.0 | | 1.061 | | 13.227\*\*\* | |
| Group 2 (%) | | 4.5 | | 0.512 | | 8.821\*\*\* | |
| Group 3 (%) | | 81.5 | | 1.120 | | 72.741\*\*\* | |
| BIC=-23774.7 (N=9311) BIC=-23764.1 (N=2038) | | | | | AIC=-23724.8 | |
| \* *P* < 0.05, \*\* *P* < 0.01, \*\*\* *P* < 0.001. | | | | | | | |



**Figure S1** Trajectories of Mini-Mental State Examination (MMSE) scores with different groups: 2 groups (A), 4 groups (B) and 5 groups (C). The solid lines represent estimated values, and the dotted lines show the 95% confidence intervals.



**Figure S2** Odds Ratios and 95% Confidence Intervals (CIs) for the Association Between Baseline Variables and Cognitive Trajectory Groups After Logistic Regression Analysis. \*Normal weight as reference. ADL, activities of daily living; CVD, cardiovascular diseases; MMSE, Mini-Mental State Examination.



**Figure S3** Trajectories of Mini-Mental State Examination (MMSE) Scores with the Attrition Extension.