**Supplementary Information**

Nutritional Status and Physical Activity are Associated with Cognitive Function in Chinese Community-Dwelling Older Adults: the Role of Happiness

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**Table S1.** Bivariate Pearson’s correlation between variables.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Predictors** | **Nutrition** | **Exercise** | **Happiness** | **Cognitive decline** |
| Nutrition |  |  |  |  |
| Exercise | 0.15\*\*\* |  |  |  |
| Happiness | 0.21\*\*\* | 0.15\*\*\* |  |  |
| Cognitive decline | -0.25\*\*\* | -0.13\*\*\* | -0.17\*\*\* |  |
| Age | -0.13\*\*\* | -0.08\* | -0.01 | 0.10 |

Note: Nutrition, MNA nutritional status; Exercise, physical activity, 1 = not doing exercise, 2 = doing exercise. \*: p-value < 0.05, \*\*: p-value < 0.01, \*\*\*: p-value < 0.001. † Indicated marginal significance.

**Table S2.** Adjusted association of cognitive decline with nutritional status, stratified by age.

|  |  |  |
| --- | --- | --- |
|  | **Young-old** **(N = 524)** | **Old-old****(N = 173)** |
| **Predictors** | **β (SE)** | **β (SE)** |
| Nutrition (Normal as reference) |
| At-risk | 2.96 (0.95)\*\* | 2.90 (1.53)† |
| Malnutrition | 11.10 (2.30)\*\*\* | 9.05 (5.61) |
| Exercise (No as reference) |
| Yes | -2.35 (0.96)\* | -1.16 (1.64) |

Note: All models adjusted for age, gender, income, education, marital status. β, estimated regression coefficient; SE, standard error; \*: p-value < 0.05, \*\*: p-value < 0.01, \*\*\*: p-value < 0.001. † Indicated marginal significance.



**Figure S1.** Stratified associations of cognitive decline with nutritional status across young-old (age < 74) and old-old (age >= 74) age sub-groups. Models adjusted for age, gender, income, education, marital status.