***Supplementary A.***

***Services provided by the Long-term Care System version one (LTC 1.0)***

The LTC 1.0 contains eight services comprising: (i) general caring services, (ii) home care, (iii) rehabilitation service, (iv) respite care, (v) transportation service, (vi) assistive technology service, (vii) nutrition consultation, and (viii) institutional service.

***Added services provided by the Long-term Care System version two (LTC 2.0)***

The LTC 2.0 added seven new services comprising: (i) dementia care, (ii) integrated services among aboriginal communities (Taiwan currently has a 2.5% aboriginal population), (iii) multiple function centers integrating respite care with adult day care with small numbers of older people, (iv) multiple support service centers for family caregiver, (v) community-based integration care system comprising three different levels (A-base [integrating home care and day care], B-base [containing either home care, community care, or institutional care], and C-base centers [providing community meals, health promotion programs and/ or programs on delaying disability], (vi) community health preventive care, (vii) programs on disability prevention, and (viii) integrating discharge plans (from hospitals) with home-based medical care.

**Supplementary Table S1.** Associations between demographic variables and outcome variables

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | *r* (*p*-value) |  |  |
|  | Age | Sex | BMI | Chronic disease | Engaged in exercise |
| **Baseline** |  |  |  |  |  |
| QoL | -0.13 (0.116) | -0.04 (0.648) | -0.05 (0.509) | -0.11 (0.189) | 0.09 (0.254) |
| Wellbeing | -0.06 (0.459) | -0.10 (0.207) | 0.03 (0.712) | -0.04 (0.651) | 0.02 (0.837) |
| Upper limb strength | -0.27 (0.001) | 0.09 (0.285) | -0.20 (0.016) | -0.11 (0.176) | 0.21 (0.012) |
| Lower limb strength | -0.20 (0.013) | -0.10 (0.212) | -0.19 (0.023) | -0.13 (0.123) | 0.15 (0.064) |
| Dynamic balance | 0.28 (<0.001) | 0.24 (0.004) | 0.17 (0.039) | 0.03 (0.738) | -0.27 (<0.001) |
| **Posttest** |  |  |  |  |  |
| QoL | -0.16 (0.056) | -0.06 (0.451) | -0.07 (0.398) | -0.14 (0.098) | 0.16 (0.052) |
| Wellbeing | -0.04 (0.629) | -0.14 (0.096) | 0.04 (0.597) | -0.08 (0.305) | 0.12 (0.154) |
| Upper limb strength | -0.22 (0.009) | 0.14 (0.088) | -0.14 (0.095) | -0.09 (0.272) | 0.24 (0.003) |
| Lower limb strength | -0.19 (0.018) | -0.14 (0.081) | -0.14 (0.086) | -0.06 (0.469) | 0.22 (0.008) |
| Dynamic balance | 0.15 (0.072) | 0.30 (<0.001) | 0.08 (0.342) | 0.06 (0.482) | -0.29 (<0.001) |

*Notes.* BMI=body mass index; QoL=quality of life

**Supplementary Table S2.** Regression model explaining the effects of the physical activity program on primary health outcomes

|  |  |  |
| --- | --- | --- |
|  | B (SE)/β (*p*) | |
|  | Quality of life | Wellbeing |
| Baseline primary outcome (quality of life or wellbeing) | -0.28 (0.05) /-0.38 (<0.001)\*\* | -0.18 (0.04) /-0.33 (<0.001)\*\* |
| Age | -3.7\*10-3 (3.5\*10-3) /-0.08 (0.295) | 1.3\*10-3 (3.2\*10-3) /0.04 (0.671) |
| Sex (Ref: male) | 0.01 (0.05) /0.02 (0.797) | -0.03 (0.04) /-0.05 (0.516) |
| Educational level (Ref: <=Primary school) |  |  |
| Junior high | 0.04 (0.04) /0.08 (0.296) | -0.01 (0.04) /-0.01 (0.872) |
| Senior high (or above) | 0.16 (0.06) /0.21 (0.006)\* | 0.01 (0.05) /0.01 (0.900) |
| Engaged in exercise (Ref: no) | 0.03 (0.07) /0.03 (0.649) | 0.11 (0.06) /0.15 (0.067) |
| Group (Ref: control group) | 0.17 (0.04) /0.36 (<0.001)\*\* | 0.09 (0.03) /0.23 (0.010)\* |
|  | Fit statistics | |
| F-value (*p*-value) | 8.81 (<0.001) | 4.70 (<0.001) |
| *R2* (adjusted *R2*) | 0.31 (0.27) | 0.19 (0.15) |

*Notes.* The health outcomes were differences between baseline and posttest. B=unstandardized coefficient; SE=standard error; β=standardized coefficient.

\**p*<0.05; \*\**p*<0.001

**Supplementary Table S3.** Regression model explaining the effects of the physical activity program on secondary outcomes

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | B (SE)/β (*p*) |  |
|  | Upper limb strength | Lower limb strength | Dynamic balance |
| Baseline secondary outcome  (upper limb strength, lower limb strength, or dynamic balance) | -0.18 (0.05) /-0.32 (<0.001)\*\* | -0.22 (0.05) /-0.35 (<0.001)\*\* | -0.22 (0.05) /-0.35 (<0.001)\*\* |
| Age | 0.03 (0.04) /0.06 (0.524) | -0.03 (0.05) /-0.05 (0.523) | -0.01 (0.02) /-0.02 (0.787) |
| Sex (Ref: male) | 0.91 (0.56) /0.13 (0.106) | -0.38 (0.59) /-0.05 (0.515) | 0.58 (0.30) /0.13 (0.054) |
| Educational level (Ref: Primary school or below) |  |  |  |
| Junior high | -0.01 (0.49) /0.00 (0.976) | -0.21 (0.52) /-0.03 (0.696) | 2.4\*10-4 (0.26) / 6.7\*10-5 (0.999) |
| Senior high (or above) | 1.66 (0.69) /0.20 (0.017)\* | 0.88 (0.74) /0.10 (0.233) | 0.79 (0.37) /0.15 (0.035)\* |
| Engaged in exercise (Ref: no) | 1.34 (0.83) /0.13 (0.110) | 1.16 (0.88) /0.11 (0.192) | -0.36 (0.45) /-0.06 (0.422) |
| Group (Ref: control group) | 0.10 (0.48) /0.02 (0.836) | 1.51 (0.50) /0.26 (0.003)\* | -1.99 (0.25) /-0.60 (<0.001)\*\* |
|  |  | Fit statistics |  |
| F-value (*p*-value) | 3.58 (0.001) | 5.00 (<0.001) | 13.49 (<0.001) |
| R2 (adjusted R2) | 0.15 (0.11) | 0.20 (0.16) | 0.40 (0.37) |

*Notes.* The health outcomes were differences between baseline and posttest. B=unstandardized coefficient; SE=standard error; β=standardized coefficient.

\**p*<0.05; \*\**p*<0.001