**Supplemental Tables**

Supplement Table 0. Demographic and Baseline characteristics of primary variables by group

|  |  |  |  |
| --- | --- | --- | --- |
|  | Complete the study (n=439) | Did not complete the study (n=416) |  |
|  | Mean (SD) or N (%) | Mean (SD) or N (%) | P value |
| **Age**, years | 76.01 (6.56) | 74.84 (5.72) | 0.0057 |
| **Sex** |   |  |  |
| M | 142 (32.3%) | 126 (30.3%) | 0.5656 |
| F | 297 (67.7%) | 290 (69.7%) |  |
| **Education years**, years | 8.34 (4.35) | 8.46 (4.54) | 0.701 |
| **SRT Total recall** | 35.14 (9.45) | 37.82 (8.91) | p<0.0001 |
| **Restriction** | 0.33 (0.33) | 0.32 (0.33) | 0.8574 |
| **Isolation** | 0.52 (0.25) | 0.47 (0.21) | 0.007 |
| **Affective Suffering** | 0.52 (0.26) | 0.58 (0.28) | 0.0052 |
| **Anergia** | 0.28 (0.26) | 0.31 (0.27) | 0.125 |
| **Loneliness** | 0.19 (0.23) | 0.20 (0.22) | 0.5931 |

Supplement Table 1

Scale Items

**Loneliness**

|  |  |
| --- | --- |
| Felt lonely in a month |  |
| Often feels lonely |  |
| Does not feel close to anyone |  |
| No one to talk to about problems |  |
| Usually keeps problems to self |  |
| If ill might be unnoticed over 24 hrs |  |

|  |  |
| --- | --- |
| **Restriction** |  |
| Not have enough energy to do the things wants to do |  |
| Changed way of doing things in order to reduce the chance of falling |  |
| Health gets in the way of doing the things wants to do |  |
| Difficulty with walking or getting around interferes with wants to do |  |
| Pain stops ordinary activities |  |
| Breathless, heart pounding, or exertion pain interferes with wants to do |  |
| Problems with hearing or seeing interferes with wants to do |  |
| Problem with memory make it difficult to do accustomed things |  |

|  |  |
| --- | --- |
| **Anergia** |  |
| Recently not enough energy |  |
| Felt slowed physically in a month |  |
| Doing less than usual in a month |  |
| Any slowness is worse in morning |  |
| Sit around a lot for lack of energy |  |
| Wakes up feeling tired |  |
| Naps during the day (>2 h) |  |
| Missing data |  |

|  |  |
| --- | --- |
| **Isolation/ social isolation** |  |
| No Knitting, music, other hobby |  |
| No walking for pleasure or excursion |  |
| No visiting with friends or relatives |  |
| No being visited by friends or relatives |  |
| No physical conditioning |  |
| No going to movies/restaurants/sporting events |  |
| No reading magazines/newspapers/books |  |
| No watching TV or listening to radio |  |
| No unpaid community or volunteer work |  |
| No playing cards/games/bingo |  |
| No going to a club or center |  |
| No going to classes |  |
| No going to church/synagogue/temple |  |
| Health interferes with desired leisure activities |  |
| Health interferes with visiting and social activities |  |
| Children contacted by phone or letter |  |
| Siblings contacted by phone or letter |  |
| Number of relatives seen this month |  |
| Relatives contacted by phone or letters |  |
| Does not feel close to anyone |  |
| Usually keeps problems to self |  |
| If ill might go unnoticed for 24 hours |  |
| Does not have anyone to talk to about problems |  |
| No contact with friends |  |

**Items in Affective Suffering Scale**

In general: (1) Very happy (2) Fairly happy (3) Not very happy (4) Not happy at all.

(1) Mentions regrets about past which may or may not be justifiable (2) Obvious and unjustifiable self-blame over past or present (3) Unrealistic self-deprecation.

Mentions worries.

Worries about almost everything.

Being sad or depressed during the past month.

The sadness/depression lasts longer than a few hours.

It is present for most of the day, everyday for at least two weeks in the past month.

Feels the worst: (1) Toward beginning of the day (2) Toward the end of the day (3) No special time of day (4) All day long.

During the past month, has felt that life was *not* worth living.

Cried in the past month.

Felt like crying in the past month even though did not.

(1) Is pessimistic about the future or has empty expectations (2) Mentions that the future looks bleak or unbearable.

In the past month though of doing anything included: (1) Wished to be dead but rejects suicide (2) Considered suicide, but suicidal thoughts are fleeing (3) Seriously considered a method of suicide, but has not attempted it (4) Attempted suicide.

Does not enjoy things or have the same (level of) interest in things now as much as used to (say a few years ago).

Almost nothing enjoyed in the past month.

Too depressed or nervous.

Does not mention feeling happy in past month.

Supplement Table 2. Type 3 ANOVA table of longitudinal trajectory analysis with and without interaction with time, non-demented subjects (n=755)

|  |  |  |  |
| --- | --- | --- | --- |
|   |   | With Interaction | Without Interaction |
| Quality of Life variables | **Variables** | **F** | **Df** | **Pr (>F)** | **F**  | **Df** | **Pr (>F)** |
| **Restriction** | Restriction | 0.99 | 1, 750 | 0.32 | 0.68 | 1, 708 | 0.41 |
| Time | 17.93 | 3, 1395 | <.001 | 19.29 | 3, 1395 | <.001 |
| Age | 137.80 | 1, 698 | <.001 | 138.23 | 1, 698 | <.001 |
| Sex | 17.71 | 1, 709 | <.001 | 17.73 | 1, 709 | <.001 |
| Education | 99.11 | 1, 767 | <.001 | 98.99 | 1, 767 | <.001 |
| Restriction x Time | 0.41 | 3, 1396 | 0.75 |  |  |  |
| **Isolation** | Isolation | 19.91 | 1, 745 | <.001 | 22.4 | 1, 702 | <.001 |
| Time | 19.43 | 3, 1394 | <.001 | 19.3 | 3, 1396 | <.001 |
| Age | 126.57 | 1, 694 | <.001 | 126.4 | 1, 694 | <.001 |
| Sex | 18.33 | 1, 707 | <.001 | 18.5 | 1, 707 | <.001 |
| Education | 103.91 | 1, 768 | <.001 | 104.9 | 1, 766 | <.001 |
| Isolation x Time | 1.91 | 3, 1394 | 0.13 |  |  |  |

Supplement Table 3. LS means table of Restriction and Isolation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Quality of Life variables** |  | **Adjusted Means\*** | **SE** | **P value** |
| Restriction  | Yes | 35.99 | 0.4 | <.001 |
|   | No | 34.64 | 0.4 | <.001 |
| Isolation | Yes | 34.13 | 0.4 | <.001 |
|   | No | 36.78 | 0.4 | <.001 |
| \*Adjusted for age, sex, and education |  |  |  |

Supplement Table 4. LS Means differences for combination of Restriction and Isolation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Group** | **Time**  | **Estimates** | **SE** | **P value** |
| 2 - 1 | 0 | -1.52 | 0.75 | 0.041 |
| 2 - 3 | 0.99 | 0.78 | 0.205 |
| 1 - 3 | 2.52 | 0.81 | 0.002 |
| 2 - 1 | 1 | -3.12 | 0.83 | <.001 |
| 2 - 3 | 1.21 | 0.90 | 0.177 |
| 1 - 3 | 4.33 | 0.91 | <.001 |
| 2 - 1 | 2 | -1.95 | 0.88 | 0.028 |
| 2 - 3 | 0.89 | 0.96 | 0.351 |
| 1 - 3 | 2.84 | 0.97 | 0.004 |
| 2 - 1 | 3 | -2.48 | 0.95 | 0.009 |
| 2 - 3 | 1.04 | 1.03 | 0.312 |
| 1 - 3 | 3.51 | 1.04 | <.001 |

\*Group: 1 – Low in both Restriction and Isolation at baseline, 2 - Mixed (High in one and low in the other at baseline), 3 – High in both Restriction and Isolation at baseline

|  |  |  |  |
| --- | --- | --- | --- |
|  | **F value** | **Df** | **P value** |
| Combination of Restriction and Isolation | 11.78 | 2, 855 | <.001 |
| Time | 38.28 | 3, 1638 | <.001 |
| Education | 136.39 | 1, 803 | <.001 |
| Sex | 19.22 | 1, 815 | <.001 |
| Age | 124.09 | 1, 852 | <.001 |
| Combination of Restriction and Isolation x Time | 1.02 | 6, 1637 | 0.41 |

Supplement Table 5. Summary of Cox regression: Hazard Ratios and p value for QoL variables

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Quality of Life variables** | **Hazard Ratios** | **95% CI** | **P value** |
| Model 1 | Restriction  | 2.22 | 1.42-3.47 | <.001 |
| Model 2 | Isolation | 1.78 | 1.17–2.70 | 0.007 |
| Model 3 | Anergia | 1.6 | 1.04-2.46 | 0.032 |
| Model 4 | Affective Suffering | 1.37 | 0.89-2.12 | 0.153 |
| Model 5 | Loneliness | 0.95 | 0.62-1.45 | 0.8 |
| Model 6 | Restriction and Isolation |   |   |   |
|  | Restriction | 1.97 | 1.24-3.14 | 0.004 |
|  | Isolation | 1.51 | 0.96-2.40 | 0.077 |
| Model 7 | Restriction x Isolation | 1.7 | 0.66-4.37 | 0.268 |

Supplement Table 6. Type 3 ANOVA table of longitudinal trajectory analysis with and without interaction with time when QoL scales treated as continuous variables.

|  |  |  |  |
| --- | --- | --- | --- |
|   |   | With Interaction | Without Interaction |
| Quality of Life variables | **Variables** | **F** | **Df** | **Pr (>F)** | **F**  | **Df** | **Pr (>F)** |
| **Restriction** | Restriction | 8.50 | 1, 863 | 0.004 | 5.56 | 1, 820 | 0.019 |
| Time | 18.48 | 3, 1636 | <.001 | 38.75 | 3, 1639 | <.001 |
| Age | 122.98 | 1, 856 | <.001 | 121.94 | 1, 855 | <.001 |
| Sex | 18.65 | 1, 817 | <.001 | 18.63 | 1, 816 | <.001 |
| Education | 147.10 | 1, 803 | <.001 | 147.03 | 1, 802 | <.001 |
| Restriction x Time | 3.19 | 3, 1643 | 0.023 |  |  |  |
| **Isolation** | Isolation | 9.71 | 1, 951 | 0.002 | 10.1 | 1, 876 | 0.002 |
| Time | 10.62 | 3, 1654 | <.001 | 39.1 | 3, 1640 | <.001 |
| Age | 133.63 | 1, 858 | <.001 | 134.1 | 1, 857 | <.001 |
| Sex | 17.03 | 1, 818 | <.001 | 17.2 | 1, 818 | <.001 |
| Education | 137.11 | 1, 805 | <.001 | 137.1 | 1, 805 | <.001 |
| Isolation x Time | 2.52 | 3, 1669 | 0.06 |  |  |  |
| **Affective Suffering** | Affective Suffering | 0.30 |  1, 840 | 0.58 | 0.7 | 1, 815 | 0.4 |
| Time | 11.78 | 3, 1641 | <.001 | 38.8 | 3, 1640 | <.001 |
| Age | 132.37 | 1, 858 | <.001 | 132.7 | 1, 858 | <.001 |
| Sex | 16.56 | 1, 819 | <.001 | 16.5 | 1, 819 | <.001 |
| Education | 148.01 | 1, 806 | <.001 | 147.4 | 1, 805 | <.001 |
| Affective Suffering x Time | 0.84 | 3, 1630 | 0.47 |  |  |  |
| **Anergia** | Anergia | 2.68 | 1, 839 | 0.156 | 1.62 | 1, 803 | 0.2 |
| Time | 13.26 | 3, 1640 | <.001 | 38.77 | 3, 1639 | <.001 |
| Age | 131.50 | 1, 858 | <.001 | 131.36 | 1, 858 | <.001 |
| Sex | 17.15 | 1, 817 | <.001 | 17.23 | 1, 817 | <.001 |
| Education | 148.25 | 1, 804 | <.001 | 148.39 | 1, 804 | <.001 |
| Anergia x Time | 1.38 | 3, 1630 | 0.275 |  |  |  |
| **Loneliness** | Loneliness | 1.47 | 1, 862 | 0.23 | 1.71 | 1, 818 | 0.19 |
| Time | 21.53 | 3, 1639 | <.001 | 38.82 | 3, 1640 | <.001 |
| Age | 130.48 | 1, 859 | <.001 | 130.42 | 1, 859 | <.001 |
| Sex | 15.48 | 1, 819 | <.001 | 15.46 | 1, 819 | <.001 |
| Education | 150.25 | 1, 803 | <.001 | 150.11 | 1, 803 | <.001 |
| Loneliness x Time | 0.24 | 3, 1638 | 0.87 |  |  |  |