**SUPPLEMENTAL TABLES**

**Supplemental table 1**: characteristics of patients who accepted and did not accept to participate in the NEXT-STEP study, Lausanne, Switzerland.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Yes** | **No** | **P-value** |
| N | 211 | 63 |  |
| Women (%) | 89 (42.2) | 38 (60.3) | 0.011 |
| Swiss nationality (%) | 200 (94.8) | 58 (92.1) | 0.419 |
| Clinical data upon admission (%) |  |  |  |
| Gait problems/fall | 54 (25.6) | 14 (22.2) | 0.587 |
| General state alteration | 71 (33.7) | 29 (46.0) | 0.073 |
| Dyspnea | 59 (28.0) | 19 (30.2) | 0.735 |
| Musculoskeletal pain | 9 (4.3) | 1 (1.6) | 0.463 § |
| Fever | 26 (12.3) | 5 (7.9) | 0.335 |
| Diarrhea / vomiting | 20 (9.5) | 6 (9.5) | 0.991 |

Results are expressed as number of patients (column percentage). Statistical analysis by chi-square or Fisher’s exact test (§).

**Supplemental table 2**: Physical activity during the day according to gender, only participants with less than 20% accelerometry non-wear time, NEXT-STEP study, Lausanne, Switzerland.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Men** | **Women** | **P-value** |
| Number of patients | 98 | 65 |  |
| Inactivity (min) |  |  |  |
| Minutes / day | 612 [510 - 651] | 598 [502 - 653] | 0.644 |
| % of daily time | 90.7 [84.8 - 94.3] | 90.4 [84.5 - 94.1] | 0.801 |
| Light activity |  |  |  |
| Minutes / day | 55 [32 - 87] | 67 [27 - 96] | 0.877 |
| % of daily time | 8.9 [5.3 - 14.4] | 9.3 [5.7 - 14.1] | 0.776 |
| Moderate activity |  |  |  |
| Minutes / day | 2 [1 - 8] | 2 [1 - 8] | 0.855 |
| % of daily time | 0.4 [0.2 - 1.2] | 0.4 [0.1 - 1.3] | 1.000 |
| Any physical activity |  |  |  |
| Minutes / day | 57 [33 - 93] | 68 [30 - 101] | 0.904 |
| % of daily time | 9.4 [5.6 - 15.1] | 9.6 [6.0 - 15.5] | 0.801 |

Results are expressed as median [interquartile range]. Between-group comparisons using Kruskal-Wallis test.

**Supplemental table 3**: Baseline characteristics of patients according to physical activity level, only participants with less than 20% accelerometry non-wear time, NEXT-STEP study, Lausanne, Switzerland. Physically active subjects were defined as being in the highest quartile of time spent in non-sedentary activities (definition 1) or as spending at least 20 minutes of moderate physical activity per day (definition 2).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Definition 1** | | | **Definition 2** | | |
|  | **Inactive** | **Active** | **P-value** | **Inactive** | **Active** | **P-value** |
| Number of patients | 121 | 42 |  | 150 | 13 |  |
| **Characteristics** |  |  |  |  |  |  |
| Women | 48 (39.7) | 17 (40.5) | 0.927 | 59 (39.3) | 6 (46.2) | 0.630 |
| Age (years) | 81.4 ± 8.4 | 80.4 ± 8.4 | 0.507 | 81.2 ± 8.5 | 79.5 ± 7.1 | 0.486 |
| Body mass index (kg/m2) ǂ | 24.8 ± 4.6 | 24.5 ± 4.8 | 0.766 | 24.8 ± 4.7 | 23.3 ± 3.7 | 0.295 |
| Depressive disorders | 20 (16.5) | 4 (9.5) | 0.322‡ | 22 (14.7) | 2 (15.4) | 1.000‡ |
| Urinary/fecal incontinence | 43 (35.5) | 15 (35.7) | 0.984 | 54 (36.0) | 4 (30.8) | 0.773‡ |
| Hearing loss/vision issues | 46 (38.0) | 18 (42.9) | 0.580 | 59 (39.3) | 5 (38.5) | 0.951 |
| **Anamnesis** |  |  |  |  |  |  |
| Walking aids 2 weeks before admission | 67 (55.4) | 16 (38.1) | 0.054 | 80 (53.3) | 3 (23.1) | 0.045‡ |
| History of falls during the year before admission | 38 (31.4) | 14 (33.3) | 0.817 | 50 (33.3) | 2 (15.4) | 0.229‡ |
| Reason for admission associated with functional decline § | 67 (55.4) | 17 (40.5) | 0.096 | 82 (54.7) | 2 (15.4) | 0.008‡ |
| **Status upon inclusion** |  |  |  |  |  |  |
| Cognitive impairment/confusion | 34 (28.1) | 12 (28.6) | 0.953 | 46 (30.7) | 0 (0) | 0.020‡ |
| Sedative drugs | 16 (13.3) | 9 (21.4) | 0.211 | 23 (15.4) | 2 (15.4) | 1.000‡ |
| Barthel Index | 87.9 ± 16.2 | 92.7 ± 12.3 | 0.086 | 88.4 ± 15.9 | 97.2 ± 3.8 | 0.048 |
| Braden score |  |  | 0.088 |  |  | 0.161 |
| > 18 | 54 (46.6) | 26 (61.9) |  | 71 (49.0) | 9 (69.2) |  |
| ≤ 18 | 62 (53.5) | 16 (38.1) |  | 74 (51.0) | 4 (30.8) |  |
| Medical equipment † | 30 (24.8) | 4 (9.5) | 0.046‡ | 32 (21.3) | 2 (15.4) | 1.000‡ |
| Isolation precautions | 2 (1.7) | 3 (7.1) | 0.108‡ | 4 (2.7) | 1 (7.7) | 0.344‡ |
| Prescription of physiotherapy | 82 (67.8) | 24 (57.1) | 0.213 | 100 (66.7) | 6 (46.2) | 0.137 |
| Charlson comorbidity index | 4 [2 - 6] | 4 [2 - 6] | 0.491¶ | 4 [2 - 6] | 3 [2 - 7] | 0.642¶ |
| Number of comorbidities | 2 [1 - 4] | 2 [1 - 3] | 0.634¶ | 2 [1 - 4] | 2 [1 - 3] | 0.561¶ |

Results are expressed as mean ± SD or as median [interquartile range] for continuous variables and as number of participants (percentage) for categorical variables. ǂ, 148 participants. §: gait problems/ fall, general state alteration, musculoskeletal pain, neurological deficit. †: urinary catheter or oxygen therapy. Between-group comparisons using student’s t-test or Kruskal-Wallis test (¶) for continuous variables and chi-square or Fisher’s exact test (‡) for categorical variables.

**Supplementary table 4**: Baseline characteristics of hospitalized elderly patients according to physical activity levels, NEXT-STEP study, Lausanne, Switzerland. Physically active patients were defined as being in the highest tertile (definition 3) or the highest quintile (definition 4) of time spent in non-sedentary activities.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Definition 3** | | | **Definition 4** | | |
|  | **Inactive** | **Active** | **P-value** | **Inactive** | **Active** | **P-value** |
| Number of patients | 118 | 59 |  | 141 | 36 |  |
| **Characteristics** |  |  |  |  |  |  |
| Women | 45 (38.1) | 26 (44.1) | 0.448 | 55 (39.0) | 16 (44.4) | 0.552 |
| Age (years) | 82.1 ± 8.6 | 79.6 ± 7.9 | 0.060 | 81.8 ± 8.4 | 79.1 ± 8.3 | 0.081 |
| Body mass index (kg/m2) ǂ | 24.6 ± 4.7 | 24.7 ± 4.6 | 0.969 | 24.7 ± 4.7 | 24.7 ± 4.7 | 0.981 |
| Depressive disorders | 19 (16.1) | 7 (11.9) | 0.453 | 21 (14.9) | 5 (13.9) | 0.879 |
| Urinary/fecal incontinence | 41 (34.8) | 19 (32.2) | 0.736 | 51 (36.2) | 9 (25) | 0.206 |
| Hearing loss/vision issues | 49 (41.5) | 21 (35.6) | 0.447 | 55 (39.0) | 15 (41.7) | 0.771 |
| **Anamnesis** |  |  |  |  |  |  |
| Walking aids 2 weeks before admission | 66 (55.9) | 24 (40.7) | 0.056 | 77 (54.6) | 13 (36.1) | 0.048 |
| History of falls during the year before admission | 36 (30.5) | 18 (30.5) | 1.000 | 44 (31.2) | 10 (27.8) | 0.690 |
| Reason for admission associated with functional decline § | 67 (56.8) | 26 (44.1) | 0.110 | 78 (55.3) | 15 (41.7) | 0.143 |
| **Status upon inclusion** |  |  |  |  |  |  |
| Cognitive impairment/confusion | 38 (32.2) | 14 (23.7) | 0.243 | 47 (33.3) | 5 (13.9) | 0.022 |
| Sedative drugs | 15 (12.8) | 12 (20.3) | 0.191 | 19 (13.6) | 8 (22.2) | 0.199 |
| Barthel Index | 87.3 ± 16.6 | 92.2 ± 13.6 | 0.049 | 87.1 ± 17 | 95.9 ± 6.1 | 0.003 |
| Braden score |  |  | 0.055 |  |  | 0.058 |
| > 18 | 53 (47.3) | 37 (62.7) |  | 66 (48.9) | 24 (66.7) |  |
| ≤ 18 | 59 (52.7) | 22 (37.3) |  | 69 (51.1) | 12 (33.3) |  |
| Medical equipment † | 30 (25.4) | 6 (10.2) | 0.017 | 32 (22.7) | 4 (11.1) | 0.165‡ |
| Isolation precautions | 2 (1.7) | 4 (6.8) | 0.078‡ | 5 (3.6) | 1 (2.8) | 1.000‡ |
| Prescription of physiotherapy | 83 (70.3) | 30 (50.9) | 0.011 | 95 (67.4) | 18 (50.0) | 0.053 |
| Charlson comorbidity index | 4 [2 - 6] | 4 [2 - 6] | 0.406¶ | 4 [2 - 6] | 4 [2 - 7] | 0.924¶ |
| Number of comorbidities | 3 [2 - 4] | 2 [1 - 3] | 0.037¶ | 2 [1 - 4] | 2 [1 - 3] | 0.450¶ |

Results are expressed as mean ± SD or as median [interquartile range] for continuous variables and as number of participants (percentage) for categorical variables. ǂ, 99 men and 63 women. §: gait problems/ fall, general state alteration, musculoskeletal pain, neurological deficit. †: urinary catheter or oxygen therapy. Between-group comparisons using student’s t-test or Kruskal-Wallis test (¶) for continuous variables and chi-square or Fisher’s exact test (‡) for categorical variables.

**Supplemental table 5**: Physical activity according to the position of the accelerometer, NEXT-STEP study, Lausanne, Switzerland.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Dominant hand** | **Non-dominant hand** | **P-value** |
| Number of patients | 107 | 70 |  |
| Inactivity (min) |  |  |  |
| Minutes / day | 623 [540 - 666] | 591 [469 - 661] | 0.211 |
| % of daily time | 90.7 [84.5 - 95.2] | 89.9 [85.6 - 93.2] | 0.417 |
| Light activity |  |  |  |
| Minutes / day | 63 [28 - 97] | 64 [37 - 103] | 0.579 |
| % of daily time | 8.8 [4.6 - 14.4] | 9.5 [6.3 - 13.1] | 0.369 |
| Moderate activity |  |  |  |
| Minutes / day | 2 [1 - 9] | 2 [1 - 9] | 0.952 |
| % of daily time | 0.4 [0.1 - 1.3] | 0.4 [0.2 - 1.2] | 0.878 |
| Any physical activity |  |  |  |
| Minutes / day | 64 [30 - 105] | 69 [38 - 108] | 0.621 |
| % of daily time | 9.3 [4.8 - 15.5] | 10.1 [6.7 - 14.4] | 0.423 |

Results are expressed as median [interquartile range]. Between-group comparisons using Kruskal-Wallis test.

**Multivariable model**

The stepwise logistic regression model to assess the variables significantly and independently related with being active was the following (Stata syntax):

stepwise, pe(0.05): logistic Quant\_4 AUXTOOL BI\_admi\_catb MEDEQUIP PHYSIO comorbid COGNIMPAI

stepwise, pe(0.05): logistic Active AUXTOOL BI\_admi\_catb MEDEQUIP PHYSIO comorbid

Where:

* Quant\_4: variable coded 0 (no) 1 (yes) defining being physically active according to definition 1 (being in the highest quartile of time spent in non-sedentary activities)
* Active: variable coded 0 (no) 1 (yes) defining being physically active according to definition 2 (spending at least 20 minutes of moderate physical activity per day).
* AUXTOOL: walking aids 2 weeks before admission, coded 0 (no) 1 (yes)
* BI\_admi\_catb: categories of the Barthel index, coded 0 (Slight/none) 1 (moderate) 2 (severe)
* MEDEQUIP: medical equipment (urinary catheter or oxygen therapy), coded 0 (no) 1 (yes)
* PHYSIO: prescription of physiotherapy, coded 0 (no) 1 (yes)
* Comorbid: number of comorbidities (continuous)
* COGNIMPAI: cognitive impairment/confusion, coded 0 (no) 1 (yes)

Note: due to estimability issues (cells with zero values) it was not possible to include variable COGNIMPAI in the stepwise analysis of Active.