Table 8. Expanded Cohort: TREC 2 (2014-2015) care aide demographic characteristics by facility bed size

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Facility Bed Size** | | | **Total Sample (n=4057)** | **X2/ANOVA\*** | |
| **Small (n=543)** | **Medium (n=1226)** | **Large (n=2288)** | **P-Value** | **Post-Hoc+** |
| **Age** (years), N (%) |  |  |  |  |  |  |
| <20 | 0 | 1(.1) | 2(.1) | 3(.1) | **0.008** | NA |
| 20-29 | 69(12.7) | 118(9.6) | 227 (9.9) | 414 (10.2) |  | NA |
| 30-39 | 125(23) | 314 (25.6) | 487 (21.3) | 926 (22.8) |  | M-L |
| 40-49 | 150 (27.6) | 382 (31.2) | 675 (29.5) | 1207 (29.8) |  | NA |
| 50-59 | 153 (28.2) | 316 (25.8) | 646 (28.2) | 1115 (27.5) |  | NA |
| >60 | 46 (8.5) | 95 (7.7) | 251 (11) | 392 (9.7) |  | M-L |
| **Sex**, (N, %) |  |  |  |  |  |  |
| Male | 48 (8.8) | 131 (10.7) | 239 (10.4) | 418 (10.3) | 0.472 | NA |
| Female | 495 (91.2) | 1095 (89.3) | 2049 (89.6) | 3639 (89.7) |  |  |
| **Shift worked most of the time,** (N, %) |  |  |  |  |  |  |
| Day Shift | 261 (48.1) | 592 (48.3) | 1089 (47.6) | 1945 (47.9) | 0.950 | NA |
| Evening Shift | 215 (39.6) | 487 (39.7) | 904 (39.5) | 1606 (39.6) |  |  |
| Night Shift | 66 (12.2) | 146 (11.9) | 294 (12.8) | 506 (12.5) |  |  |
| *Missing* | 1(0.2) | 1(0.1) | 1(0.0) | 3(0.1) |  |  |
| **Language,** (N, %) |  |  |  |  |  |  |
| English | 274 (50.5) | 526 (42.9) | 794 (34.7) | 1594 (39.3) | **<0.001** | S-L, M-L, M-S |
| Filipino | 41 (7.6) | 120 (9.8) | 303 (13.2) | 464 (11.4) |  | L-S, M-L |
| Tagalog | 114 (21) | 245 (20) | 543 (23.7) | 902 (22.2) |  | M-L |
| Other | 113 (20.8) | 335 (27.3) | 648 (28.3) | 1096 (27) |  | M-L, L-S |
| *Missing* | 1(0.1) | **―** | **―** | 1(0.0) |  |  |
| **Number of homes care aide worked,** (N, %) |  |  |  |  |  |  |
| 1 | 407 (75.0) | 901 (73.5) | 1659 (72.5) | 2967 (73.1) | 0.417 | NA |
| 2+ | 134 (24.7) | 323 (26.3) | 628 (27.4) | 1085 (26.7) |  |  |
| *Missing* | 2(0.4) | 2(0.2) | 1(0.0) | 5(0.1) |  |  |
| **Completed high school**, (N, %) |  |  |  |  |  |  |
| Yes | 506 (93.2) | 1153 (94.2) | 2156 (94.2) | 3815(94.1) | 0.636 | NA |
| **Care aide certificate,** (N, %) |  |  |  |  |  |  |
| Yes | 499 (91.9) | 1178 (96.2) | 2089 (91.3) | 3767 (92.9) | **<0.001** | S-M, M-L |
| **Hours worked in two weeks**, (Mean, SD) | 68.9(22.5) | 71.3(19.7) | 71.5(22.1) | 71.1(21.4) | **0.043** | S-L |
| **Years worked as care aide**, (Mean, SD) | 10.2(8.8) | 10.6(8.8) | 11.4(9.4) | 11.0(9.1) | **0.007** | L-S, M-L |
| **Years worked on unit**, (Mean, SD) | 4.8(5.3) | 5.6(5.8) | 5.6(6.3) | 5.5(6.0) | **0.018** | S-M, S-L |

\* Chi-square test used for categorical variables and one-way ANOVA for continuous variables.

**+**Post-hoc tests for significant difference were examined using Bonferroni correction for continuous variables and binary or multinomial logistic regression for categorical outcomes. S, M, L denote the post-hoc test for multiple comparisons between the regions (S=Small, M=Medium, L=Large). Significant differences are provided between the facilities with different bed size (e.g. S-M implies a significant difference between small and medium). NA denotes not applicable.

Table 9. Expanded Cohort: TREC 2 (2014-2015) Comparison of work related and health outcomes among care aides by facility bed size

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variables (Mean, 95% CI)** | **Facility bed size** | | | | **ANOVA (unadjusted)** | | **ANOVA (adjusted) +** | |
| **Small (n=543)** | **Medium (n=1226)** | **Large (n=2288)** | **Total (n=4057)** | **P-value** | **ES\*** | **P-value** | **ES\*** |
| a**Burnout** |  |  |  |  |  |  |  |  |
| MBI-Emotional Exhaustion | 2.40 (2.25—2.55) | 2.40 (2.31—2.50) | 2.49 (2.42—2.56) | 2.45 (2.40—2.51) | 0.282 | 0.032 | 0.13 | 0.032 |
| MBI-Cynicism | 2.37 (2.23—2.51) | 2.43 (2.33—2.52) | 2.46 (2.39—2.53) | 2.44 (2.39—2.49) | 0.557 | 0.000 | 0.897 | 0.000 |
| MBI-Efficacy | 5.41 (5.34—5.47) | 5.44 (5.40—5.49) | 5.42 (5.39—5.45) | 5.43 (5.40—5.45) | 0.605 | 0.000 | 0.632 | 0.000 |
| b**Health Status** |  |  |  |  |  |  |  |  |
| Physical Health Status (0-100%) | 48.95 (48.18—49.73) | 49.28 (48.80—49.76) | 49.85 (49.53—50.17) | 49.56 (49.31—49.81) | 0.027 | 0.045 | 0.169 | 0.032 |
| Mental Health Status (0-100%) | 51.89 (51.19—52.59) | 51.91 (51.42—52.39) | 52.05 (51.71—52.39) | 51.99 (51.73—52.24) | 0.823 | 0.000 | 0.803 | 0.000 |
| **Work Related** |  |  |  |  |  |  |  |  |
| cJob Satisfaction | 4.16 (4.10—4.21) | 4.26 (4.22—4.29) | 4.27 (4.24—4.29) | 4.25 (4.23—4.27) | 0.001 | 0.063 | 0.009 | 0.045 |
| dDementia-related responsive behaviours towards staff | 3.08 (2.94—3.22) | 3.00 (2.91—3.10) | 3.26 (3.19—3.33) | 3.16 (3.11—3.21) | <0.001 | 0.071 | <0.001 | 0.078 |

**ES=Effect Size**

**MBI=Maslach Burnout Inventory**

**95% CI: Lower and Upper Confidence Interval**

a Emotional exhaustion, cynicism, and professional efficacy were measured using the Maslach Burnout Inventory (MBI). Each scale included three items and their scoring was derived by taking the average of the three items. The items were measured on a 7-point (0-6) Likert scale (0=never to 6=daily). Higher scores on emotional exhaustion and cynicism indicate more burnout, and higher scores on professional inefficacy indicate lower burnout.

b Physical and mental health were measured using the Health Status Short Form (SF-8). Responses are on a five- or six-point scale, and scoring is completed using a proprietary algorithm obtained when permission to use the scale is granted. Higher scores indicate better perceived health status.

c Job satisfaction was measured by asking care aides to indicate their agreement with three items measuring their satisfaction with their job, liking their work, and liking working in the facility. The overall score for job satisfaction was derived by taking the average of the three items. The three items were measured on a five-point Likert scale (1=strongly disagree to 5=strongly agree).

d Dementia-related responsive behaviours towards staff was measured by asking care aides to indicate if they have or have not (Yes/No) experienced instances of resident responsive behaviours (yelling or screaming, hurtful remarks or behaviours, spitting/biting/pinching/pushing, unwanted comments or actions of a sexual nature, sexual touching, verbal threats) in their last five shifts. The score for responsive behaviours is derived by taking the sum of the six items.

\*Effect size (Cohen’s f2): small effect=0.02, medium effect=0.15, large effect=0.35

+Region effect after adjusting for sex, care aide certificate, and English as a first language

Table 10. Comparison of demographic characteristics among care aides from the stable cohort of 18 facilities in TREC 1 (2009-2010) and TREC 2 (2014-2015) and care aides in facilities that were only in TREC 1 (2009-2010)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Alberta** | |  | **Manitoba** | |  |
|  | **TREC 1 Only (n=122)** | **Stable Cohort (n=715)** | **P-value**\* | **TREC 1 Only (n=60)** | **Stable Cohort (n=276)** | **P-Value**\* |
| **Sex**, (N, %) |  |  |  |  |  |  |
| Female | 118 (96.7) | 658 (92.2) | 0.071 | 55 (91.7) | 243 (88.4) | 0.46 |
| **Age** (years), N (%) |  |  |  |  |  |  |
| <20 | 4 (3.3) | 5 (0.7) | 0.067 | 0 (0.0) | 2 (0.7) | 0.477 |
| 20-29 | 20 (16.4) | 85 (11.9) |  | 5 (8.3) | 25 (9.1) |  |
| 30-39 | 28 (23.0) | 149 (20.8) |  | 9 (15.0) | 69 (25.0) |  |
| 40-49 | 36 (29.5) | 231 (32.3) |  | 22 (36.7) | 81 (29.3) |  |
| 50-59 | 25 (20.5) | 193 (27.0) |  | 20 (33.3) | 74 (26.8) |  |
| >60 | 9 (7.4) | 52 (7.3) |  | 4 (6.7) | 25 (9.1) |  |
| **Shift worked most of the time,** (N, %) |  |  |  |  |  |  |
| Day | 57 (46.7) | 337 (47.1) | 0.777 | 32 (53.3) | 133 (48.2) | 0.768 |
| Evening | 50 (41.0) | 305 (42.7) |  | 19 (31.7) | 96 (34.8) |  |
| Night | 15 (12.3) | 73 (10.2) |  | 9 (15.0) | 47 (17.0) |  |
| **Language,** (N, %) |  |  |  |  |  |  |
| English | 91 (74.6) | 317 (44.4) | <0.001 | 30 (50.0) | 108 (39.1) | 0.003 |
| Filipino | 6 (4.9) | 55 (7.7) |  | 6 (10.0) | 56 (20.3) |  |
| Tagalog | 9 (7.4) | 156 (21.8) |  | 6 (10.0) | 67 (24.3) |  |
| Other | 16 (13.1) | 186 (26.1) |  | 18 (30.0) | 45 (16.3) |  |
| **Completed high school**, (N, %) |  |  |  |  |  |  |
| Yes | 104 (85.2) | 664 (93.3) | 0.002 | 58 (96.7) | 259 (93.8) | 0.39 |
| **Care aide certificate,** (N, %) |  |  |  |  |  |  |
| Yes | 93 (76.2) | 587 (82.4) | 0.102 | 59 (98.3) | 252 (91.3) | 0.06 |
| **Hours worked in two weeks**, (Mean, SD) | 63.08 (17.17) | 60.99 (17.96) | 0.232 | 63.72 (17.10) | 65.93 (17.69) | 0.38 |
| **Years worked as care aide**, (Mean, SD) | 9.37 (8.16) | 10.24 (8.82) | 0.318 | 12.60 (9.01) | 11.90 (8.48) | 0.566 |
| **Years worked on unit**, (Mean, SD) | 3.23 (3.11) | 5.35 (5.31) | <0.001 | 6.86 (6.64) | 4.47 (5.27) | 0.003 |

\* Chi-square test used for categorical variables and one-way ANOVA for continuous variables.

Table 11. Comparison of work life and health outcomes of care aides from the stable cohort of 18 facilities in both TREC 1 (2009-2010) and TREC 2 (2014-2015) and care aides in facilities that were only in TREC 1 (2009-2010)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Alberta** | |  | **Winnipeg** | |  |
| **Variables (Mean, 95% CI)** | **TREC 1 Only (n=122)** | **Stable Cohort (n=715)** | **P-value**\* | **TREC 1 Only (n=60)** | **Stable Cohort (n=276)** | **P-Value**\* |
| a**Burnout** |  |  |  |  |  |  |
| MBI-Emotional Exhaustion | 2.19 (1.91-2.46) | 2.41 (2.28-2.53) | 0.17 | 2.69 (2.25-3.13) | 2.64 (2.46-2.83) | 0.843 |
| MBI-Cynicism | 1.79 (1.54-2.05) | 2.09 (1.98-2.21) | 0.044 | 2.36 (1.93-2.78) | 2.44 (2.25-2.64) | 0.705 |
| MBI-Efficacy | 4.96 (4.78-5.13) | 5.37 (5.31-5.42) | <0.001 | 5.29 (5.08-5.51) | 5.17 (5.07-5.28) | 0.341 |
| b**Health Status** |  |  |  |  |  |  |
| Physical Health Status (0-100%) | 49.02 (47.54-50.50) | 49.73 (49.14-50.33) | 0.372 | 49.64 (47.51-51.77) | 49.71 (48.87-50.55) | 0.944 |
| Mental Health Status (0-100%) | 51.31 (49.66-52.96) | 51.62 (50.97-52.26) | 0.724 | 51.54 (49.61-53.48) | 51.16 (50.16-52.15) | 0.745 |
| **Work Related** |  |  |  |  |  |  |
| cJob Satisfaction | 4.14 (4.00-4.28) | 4.11 (4.05-4.17) | 0.725 | 4.15 (3.96-4.34) | 4.14 (4.05-4.23) | 0.934 |
| dDementia-related responsive behaviours towards staff | 2.61 (2.32-2.89) | 3.11 (2.98-3.24) | 0.003 | 3.58 (3.25-3.91) | 3.18 (2.98-3.39) | 0.09 |

**MBI=Maslach Burnout Inventory**

**95% CI: Lower and Upper Confidence Interval**

\* Chi-square test used for categorical variables and one-way ANOVA for continuous variables.

a Emotional exhaustion, cynicism, and professional efficacy were measured using the Maslach Burnout Inventory. Each scale included three items and their scoring was derived by taking the average of the three items. The items were measured on a 7-point (0-6) Likert scale (0=never to 6=daily). Higher scores on emotional exhaustion and cynicism indicate more burnout, and higher scores on professional inefficacy indicate lower burnout.

b Physical and mental health were measured using the Health Status Short Form (SF-8). Responses are on a five- or six-point scale, and scoring is completed using a proprietary algorithm obtained when permission to use the scale is granted. Higher scores indicate better perceived health status.

c Job satisfaction was measured by asking care aides to indicate their agreement with one item measuring their satisfaction with their job. The item was measured on a five-point Likert scale (1=strongly disagree to 5=strongly agree).

d Dementia-related responsive behaviours towards staff was measured by asking care aides to indicate if they have or have not (Yes/No) experienced instances of resident responsive behaviours (yelling or screaming, hurtful remarks or behaviours, spitting/biting/pinching/pushing, unwanted comments or actions of a sexual nature, sexual touching, verbal threats) in their last five shifts. The score for responsive behaviours is derived by taking the sum of the six items.

Table 12. Comparison of demographic characteristics among care aides from the stable cohort of 18 facilities in both TREC 1 (2009-2010) and TREC 2 (2014-2015) and care aides in facilities that were only in TREC 2 (20014-2015)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Alberta** | |  | **Winnipeg** | |  |
|  | **TREC 2 Only (n=1006)** | **Stable Cohort (n=606)** | **P-value** | **TREC 2 Only (n=447)** | **Stable Cohort (n=302)** | **P-Value** |
| **Sex**, (N, %) |  |  |  |  |  |  |
| Female | 924 (91.8) | 570 (94.1) | 0.099 | 390 (87.2) | 259 (85.8) | 0.557 |
| **Age** (years), N (%) |  |  |  |  |  |  |
| <20 | 0 (0.0) | 0 (0.0) | 0.143 | 1 (0.2) | 1 (0.3) | 0.522 |
| 20-29 | 82 (8.2) | 41 (6.8) |  | 46 (10.3) | 31 (10.3) |  |
| 30-39 | 238 (23.7) | 128 (21.1) |  | 79 (17.7) | 70 (23.2) |  |
| 40-49 | 324 (32.2) | 181 (29.9) |  | 129 (28.9) | 81 (26.8) |  |
| 50-59 | 262 (26) | 180 (29.7) |  | 131 (29.3) | 86 (28.5) |  |
| >60 | 100 (9.9) | 76 (12.5) |  | 61 (13.6) | 33 (10.9) |  |
| **Shift worked most of the time,** (N, %) |  |  |  |  |  |  |
| Day | 472 (46.9) | 299 (49.4) | 0.19 | 191 (42.7) | 129 (42.9) | 0.547 |
| Evening | 397 (39.5) | 242 (40.0) |  | 178 (39.8) | 128 (42.5) |  |
| Night | 137 (13.6) | 64 (10.6) |  | 78 (17.4) | 44 (14.6) |  |
| **Language,** (N, %) |  |  |  |  |  |  |
| English | 341 (33.9) | 226 (37.3) | 0.133 | 152 (34.0) | 92 (30.8) | 0.018 |
| Filipino | 127 (12.6) | 92 (15.2) |  | 61 (13.6) | 40 (13.2) |  |
| Tagalog | 230 (22.9) | 124 (20.5) |  | 135 (30.2) | 122 (40.4) |  |
| Other | 307 (30.5) | 164 (27.1) |  | 99 (22.1) | 47 (15.6) |  |
| **Completed high school**, (N, %) |  |  |  |  |  |  |
| Yes | 932 (92.6) | 582 (96.0) | 0.006 | 411 (91.9) | 297 (98.3) | <0.001 |
| **Care aide certificate,** (N, %) |  |  |  |  |  |  |
| Yes | 865 (86.0) | 532 (87.8) | 0.302 | 432 (96.6) | 290 (96.0) | 0.656 |
| **Hours worked in two weeks**, (Mean, SD) | 70.85 (23.85) | 69.66 (23.14) | 0.328 | 74.85 (24.75) | 71.78 (21.43) | 0.08 |
| **Years worked as care aide**, (Mean, SD) | 10.58 (9.21) | 11.33 (8.87) | 0.111 | 12.86 (10.41) | 11.52 (9.15) | 0.071 |
| **Years worked on unit**, (Mean, SD) | 5.60 (6.03) | 5.70 (6.22) | 0.753 | 6.01 (6.93) | 5.56 (5.51) | 0.348 |

\* Chi-square test used for categorical variables and one-way ANOVA for continuous variables.

Table 13. Comparison of work life and health outcomes of care aides from the stable cohort of 18 facilities that are in both TREC 1 (2009-2010) and TREC 2 (2014-2015) and care aides in facilities that were only in TREC 2 (2014-2015)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Alberta** | |  | **Winnipeg** | |  |
| **Variables (Mean, 95% CI)** | **TREC 2 Only (n=1006)** | **Stable Cohort (n=606)** | **P-value** | **TREC 2 Only (n=447)** | **Stable Cohort (n=302)** | **P-Value** |
| a**Burnout** |  |  |  |  |  |  |
| MBI-Emotional Exhaustion | 2.54 (2.43-2.65) | 2.44 (2.30-2.58) | 0.262 | 2.77 (2.61-2.93) | 2.85 (2.64-3.05) | 0.552 |
| MBI-Cynicism | 2.54 (2.43-2.64) | 2.46 (2.33-2.60) | 0.393 | 2.86 (2.70-3.02) | 2.87 (2.69-3.05) | 0.91 |
| MBI-Efficacy | 5.42 (5.37-5.47) | 5.39 (5.32-5.45) | 0.504 | 5.37 (5.29-5.45) | 5.37 (5.28-5.46) | 0.911 |
| b**Health Status** |  |  |  |  |  |  |
| Physical Health Status (0-100%) | 49.28 (48.78-49.78) | 49.21 (48.55-49.86) | 0.854 | 49.68 (48.91-50.45) | 50.51 (49.67-51.35) | 0.162 |
| Mental Health Status (0-100%) | 52.00 (51.49-52.52) | 52.04 (51.36-52.71) | 0.94 | 51.94 (51.16-52.73) | 51.24 (50.25-52.23) | 0.272 |
| **Work Related** |  |  |  |  |  |  |
| cJob Satisfaction | 4.19 (4.15-4.23) | 4.27 (4.22-4.32) | 0.013 | 4.28 (4.23-4.34) | 4.30 (4.23-4.38) | 0.638 |
| dDementia-related responsive behaviours towards staff | 3.21 (3.11-3.31) | 3.37 (3.24-3.51) | 0.052 | 3.49 (3.33-3.64) | 3.20 (3.02-3.37) | 0.017 |

**MBI=Maslach Burnout Inventory**

**95% CI: Lower and Upper Confidence Interval**

a Emotional exhaustion, cynicism, and professional efficacy were measured using the Maslach Burnout Inventory. Each scale included three items and their scoring was derived by taking the average of the three items. The items were measured on a 7-point (0-6) Likert scale (0=never to 6=daily). Higher scores on emotional exhaustion and cynicism indicate more burnout, and higher scores on professional inefficacy indicate lower burnout.

b Physical and mental health were measured using the Health Status Short Form (SF-8). Responses are on a five- or six-point scale, and scoring is completed using a proprietary algorithm obtained when permission to use the scale is granted. Higher scores indicate better perceived health status.

c Job satisfaction was measured by asking care aides to indicate their agreement with three items measuring their satisfaction with their job, liking their work, and liking working in the facility. The overall score for job satisfaction was derived by taking the average of the three items. The three items were measured on a five-point Likert scale (1=strongly disagree to 5=strongly agree).

d Dementia-related responsive behaviours towards staff was measured by asking care aides to indicate if they have or have not (Yes/No) experienced instances of resident responsive behaviours (yelling or screaming, hurtful remarks or behaviours, spitting/biting/pinching/pushing, unwanted comments or actions of a sexual nature, sexual touching, verbal threats) in their last five shifts. The score for responsive behaviours is derived by taking the sum of the six items.