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**Supplemental Table 1· Counts of missing values**

|  |  |  |
| --- | --- | --- |
| Variable | N missing | Comments |
| **Patient-reported outcomes\*** |  |  |
| PROMIS Physical Function | 0 |  |
| PROMIS Pain Interference | 0 |  |
| PROMIS Fatigue | 2 |  |
| PROMIS Sleep Disturbance | 0 |  |
| NeuroQol Cognitive Function | 0 |  |
| PHQ-8 (depressive symptoms) | 0 |  |
| GAD-7 (anxiety symptoms | 0 |  |
|  |  |  |
| **Economic insecurities** |  |  |
| Food insecurity | 0 |  |
| Housing insecurity | 1 | If missing, coded to 0 (no insecurity) |
| Financial insecurity | 0 |  |
| SLE care insecurity | 2 | If missing, coded to 0 (no insecurity) |
|  |  |  |
| **Covariates** |  |  |
| Age | 0 |  |
| Sex | 0 |  |
| Race/ethnicity | 0 |  |
| Below poverty | 17 | If missing, coded to 0 (not below poverty) |
| Income | 9 |  |
| Education | 1 |  |
| Number of comorbidities | 0 |  |
| Marital status | 0 |  |
| Health literacy | 5 | If missing, coded to 0 (not low health literacy) |
| Obesity | 0 |  |
| SLE disease duration | 0 |  |
| BILD | 1 |  |
| High glucocorticoid use | 0 |  |
| Immunosuppressive use | 0 |  |
| Hydroxychloroquine use | 0 |  |

**Supplemental Table 2· Comparison between CLUES participants included Year 5 and those who dropped out prior to Year 5**

|  |  |  |  |
| --- | --- | --- | --- |
|  | In Year 5 | |  |
|  | No (n = 179) | Yes (n = 252) | p |
| **Sociodemographic** |  |  |  |
| Age, years | 48·2 ± 15·2 | 45·4 ± 13·4 | 0·05 |
| Female  Male | 90 (161) 10(18) | 91 (228)  9 (24) | 0·87 |
| Race and ethnicity |  |  | 0·38 |
| Asian | 38 (68) | 31 (77) |  |
| Black | 12 (21) | 10 (25) |  |
| Hispanic | 21 (37) | 23 (59) |  |
| White | 26 (47) | 33 (84) |  |
| Other | 3 (6) | 3 (7) |  |
| Below poverty | 24 (42) | 13 (33) | 0·0020 |
|  |  |  |  |
| **General health** |  |  |  |
| Comorbid conditions a |  |  |  |
| Cardiovascular | 50 (71) | 43 (104) | 0·17 |
| Asthma, other pulmonary | 16 (23) | 19 (47) | 0·50 |
| Diabetes | 8 (11) | 5 (12) | 0·27 |
| Fibromyalgia | 11 (15) | 9 (22) | 0·60 |
| Smoking, ever | 30 (53) | 33 (82) | 0·53 |
|  |  |  |  |
| **Lupus-related** |  |  |  |
| Disease duration (years) | 17·1 ± 11·5 | 18·2 ± 10·7 | 0·33 |
| SLEDAI | 3·2 ± 3·3 | 2·8 ± 2·9 | 0·23 |
| SLICC-DI | 1·8 ± 2·1 | 1·9 ± 2·0 | 0·68 |
| BILD  Median (IQR) | 2·4 ± 2·4  1 (1, 3) | 2·5 ± 2·4  1 (0, 3) | 0·67 |
|  |  |  |  |
| **Patient-reported outcomes\*** |  |  |  |
| PROMIS Physical Function | 46·6 ± 10·5 | 46·0 ± 9·5 | 0·17 |
| PROMIS Pain Interference | 52·9 ± 10·5 | 51·9 ± 9·4 | 0·30 |
| PROMIS Fatigue | 52·3 ± 12·4 | 52·6 ± 11·1 | 0·82 |
| PROMIS Sleep Disturbance | 52·8 ± 9·8 | 52·6 ± 8·5 | 0·89 |
| PHQ-8 (depressive symptoms)  Median (IQR) | 5·8 ± 5·2  4 (2, 9) | 6·0 ± 5·1  5 (2, 9) | 0·30 |

a Comorbid condition information from Year 2 interview because information was not collected at baseline· Other variables are from baseline·

\* NeuroQOL Cognitive Function was not collected at baseline

Tabled values are mean ± SD or % (n)

**Supplemental Table 3· Adjusted marginal means from multivariable analysis**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Physical Function | Pain Interference | Fatigue | Sleep Disturbance | Cognitive Function | Depression | Anxiety |
| Any insecurity |  |  |  |  |  |  |  |
| No (n=176) | 48·9 (47·5, 50·3) | 52·0 (50·5 53·5) | 50·5 (48·8, 52·3) | 49·9 (48·3, 51·6) | 49·3 (47·7, 50·9) | 4·4 (3·6, 5·1) | 3·3 (2·6, 4·1) |
| Yes (n=76) | 45·7 (44·3, 47·0) | 54·4 (53·0, 55·8) | 54·9 (53·3, 56·5) | 52·9 (51·4, 54·5) | 45·6 (44·1, 47·0) | 6·1 (5·4, 6·8) | 5·2 (4·5, 5·9) |
| p | 0·0017 | 0·031 | 0·0005 | 0·012 | 0·0011 | 0·0013 | 0·0008 |
|  |  |  |  |  |  |  |  |
| Number of insecurities | |  |  |  |  |  |  |
| 0 (n=176) | 49·0 (47·5, 50·4) | 52·0 (50·4, 53·5) | 50·6 (48·8, 52·3) | 49·9 (48·3, 51·6) | 49·3 (47·7, 50·9) | 4·4 (3·6, 5·1) | 3·3 (2·5, 4·2) |
| 1 (n=52) | 46·2 (44·3, 48·1) | 54·5 (52·4, 56·5) | 55·3 (53·0, 57·6) | 52·9 (50·7, 55·1) | 45·5 (43·4, 47·6) | 6·4 (5·4, 7·4) | 4.9 (3·9, 5·9) |
| p | 0·020 | 0·058 | 0·0013 | 0·032 | 0·0046 | 0·0019 | 0·012 |
| 2+ (n=24) | 45·2 (43·3, 47·1) | 54·3 (52·2, 56·4) | 54·5 (52·1, 56·8) | 53·0 (50·7, 55·2) | 45·7 (43·5, 47·8) | 5·8 (4·8, 6·8) | 5·4 (4·4, 6·5) |
| p | 0·0036 | 0·098 | 0·014 | 0·044 | 0·011 | 0·032 | 0·0020 |

Tabled values are adjusted means (95% confidence interval) from multivariable linear regression analyses controlling for age, sex, race and ethnicity, marital status, education, income below poverty, limited health literacy, comorbid conditions, obesity, disease duration, disease damage, high glucocorticoid use, immunosuppressive use, and hydroxychloroquine use·

P values from multivariable linear regression , compared to no insecurities group·

**Supplemental Table 4· Adjusted marginal means from sensitivity analysis, controlling for income instead of poverty status**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Physical Function | Pain Interference | Fatigue | Sleep Disturbance | Cognitive Function | Depression | Anxiety |
| Any insecurity |  |  |  |  |  |  |  |
| No (n=176) | 49·0 (47·5, 50·4) | 51·9 (50·4 53·5) | 50·5 (48·7, 52·3) | 49·9 (48·3, 51·6) | 49·6 (48·0, 51·2) | 4·2 (3·5, 5·0) | 3·3 (2·5, 4·1) |
| Yes (n=76) | 45·6 (44·2, 46·9) | 54·4 (52·9, 55·8) | 54·8 (53·1, 56·4) | 52·7 (51·1, 54·3) | 45·6 (44·1, 47·1) | 6·0 (5·3, 6·7) | 5·1 (4·4, 5·8) |
| p | 0·0016 | 0·030 | 0·0010 | 0·025 | 0·0006 | 0·0013 | 0·0013 |
|  |  |  |  |  |  |  |  |
| Number of insecurities | |  |  |  |  |  |  |
| 0 (n=176) | 49·0 (47·6, 50·5) | 51·9 (50·3, 53·5) | 50·5 (48·7, 52·3) | 49·9 (48·2, 51·6) | 49·6 (48·0, 51·2) | 4·3 (3·5, 5·0) | 3·3 (2·5, 4·0) |
| 1 (n=52) | 46·3 (44·4, 48·3) | 54·4 (52·3, 56·5) | 55·2 (52·8, 57·6) | 52·7 (50·5, 55·0) | 45·7 (43·5, 47·8) | 6·2 (5·2, 7·3) | 4·9 (3·9, 6·0) |
| p | 0·031 | 0·064 | 0·0020 | 0·053 | 0·0042 | 0·0023 | 0·012 |
| 2+ (n=24) | 44·8 (42·8, 46·8) | 54·4 (52·3, 56·5) | 54·3 (51·8, 56·7) | 52·7 (50·4, 55·0) | 45·4 (43·3, 47·6) | 5·8 (4·8, 6·9) | 5·3 (4·2, 6·3) |
| p | 0·0016 | 0·083 | 0·022 | 0·077 | 0·0049 | 0·026 | 0·0046 |

Tabled values are adjusted means (95% confidence interval) from multivariable linear regression analyses controlling for age, sex, race and ethnicity, marital status, education, household income <$60,000/year, limited health literacy, comorbid conditions, obesity, disease duration, disease damage, high glucocorticoid use, immunosuppressive use, and hydroxychloroquine use·

P values from multivariable linear regression , compared to no insecurities group·

**Supplemental Table 5· Unadjusted and adjusted PROs by individual insecurities**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Physical Function | Pain Interference | Fatigue | Sleep Disturbance | Cognitive Function | Depression | Anxiety |
| **Unadjusted** |  |  |  |  |  |  |  |
| Food insecurity |  |  |  |  |  |  |  |
| No (n=209) | 48·3 ± 9·7 | 52·6 ± 9·6 | 51·8 ± 10·5 | 50·9 ± 9·1 | 48·1 ± 9·4 | 5·0 ± 4·6 | 3·9 ± 4·1 |
| Yes (n=43) | 41·9 ± 8·5 | 56·7 ± 9·4 | 57·8 ± 9·6 | 54·5 ± 9·3 | 43·6 ± 7·8 | 6·7 ± 4·0 | 6·5± 5·2 |
| P | <0·0001 | 0·011 | 0·0008 | 0·022 | 0·0038 | 0·032 | 0·0003 |
|  |  |  |  |  |  |  |  |
| Housing insecurity |  |  |  |  |  |  |  |
| No (n=195) | 48·1 ± 9·8 | 52·8 ± 9·4 | 52·0 ± 10·7 | 50·9 ± 9·0 | 48·1± 9·3 | 4·9 ± 4·4 | 3·7 ± 3·9 |
| Yes (n=57) | 43·9 ± 8·8 | 54·8 ± 10·5 | 56·0 ± 9·7 | 53·7± 9·6 | 44·5± 8·8 | 6·5 ± 4·8 | 6·4 ± 5·3 |
| P | 0·0035 | 0·19 | 0·013 | 0·045 | 0·0095 | 0·026 | 0·0008 |
|  |  |  |  |  |  |  |  |
| Financial insecurity |  |  |  |  |  |  |  |
| No (n=199) | 48·7 ± 9·7 | 52·2 ± 9·4 | 51·9 ± 10·6 | 50·8 ± 9·3 | 48·2 ± 9·3 | 5·0 ± 4·6 | 3·9 ± 4·2 |
| Yes (n=53) | 41·7 ± 7·9 | 57·4 ± 9·5 | 56·5 ± 9·8 | 54·4 ± 8·3 | 44·0 ± 8·5 | 6·4 ± 4·2 | 6·1 ± 4·8 |
| P | <0·0001 | 0·0004 | 0·0049 | 0·010 | 0·0032 | 0·040 | 0·0012 |
|  |  |  |  |  |  |  |  |
| SLE care insecurity |  |  |  |  |  |  |  |
| No (n=146) | 48·7 ± 9·7 | 51·7 ± 9·4 | 51·2 ± 10·4 | 50·8 ± 9·3 | 49·0 ± 9·3 | 4·5 ± 4·2 | 3·5 ± 3·8 |
| Yes (n=106) | 44·9 ± 9·3 | 55·7 ± 9·6 | 55·2 ± 10·5 | 52·6 ± 9·1 | 45·0 ± 8·8 | 6·4 ± 4·8 | 5·5 ± 4·9 |
| P | 0·0019 | 0·0011 | 0·0033 | 0·11 | 0·00019 | 0·0007 | 0·0004 |
|  |  |  |  |  |  |  |  |
| **Fully Adjusted\*** |  |  |  |  |  |  |  |
| Food insecurity |  |  |  |  |  |  |  |
| No | 47·6 (46·5, 48·6) | 53·2 (52·0, 54·3) | 52·4 (51·1, 53·7) | 51·3 (50·1, 52·5) | 47·5 (46·3, 48·7) | 5·3 (4·8, 5·9) | 4·1 (3·6, 4·7) |
| Yes | 45·3 (42·8, 47·9) | 53·7 (50·9, 56·5) | 55·1 (52·0, 58·3) | 52·8 (49·8, 55·7) | 46·3 (43·4, 49·1) | 5·1 (3·7, 6·5) | 5·3 (3·9, 6·7) |
| p | 0·12 | 0·76 | 0·13 | 0·39 | 0·45 | 0·76 | 0·14 |
|  |  |  |  |  |  |  |  |
| Housing insecurity |  |  |  |  |  |  |  |
| No | 47·7 (46·7, 48·8) | 53·2 (52·0, 54·4) | 52·3 (51·0, 53·6) | 51·0 (49·8, 52·3) | 47·7 (46·5, 48·9) | 5·1 (4·6, 5·7) | 3·9 (3·4, 4·5) |
| Yes | 45·3 (43·3, 47·4) | 53·5 (51·3, 55·8) | 54·8 (52·2, 57·4) | 53·4 (50·9, 55·8) | 45·8 (43·5, 48·1) | 5·8 (4·7, 6·9) | 5·6 (4·5, 6·7) |
| p | 0·051 | 0·80 | 0·097 | 0·10 | 0·16 | 0·30 | 0·011 |
|  |  |  |  |  |  |  |  |
| Financial insecurity |  |  |  |  |  |  |  |
| No | 47·9 (46·8, 49·0) | 52·8 (51·6, 54·0) | 52·5 (51·1, 53·8) | 51·0 (49·7, 52·2) | 47·6 (46·4, 48·8) | 5·3 (4·7, 5·8) | 4·0 (3·4, 4·6) |
| Yes | 44·7 (42·4, 46·9) | 55·1 (52·7, 57·6) | 54·3 (51·5, 57·2) | 53·8 (51·1, 56·4) | 46·1 (43·5, 48·6) | 5·4 (4·2, 6·6) | 5·5 (4·2, 6·7) |
| p | 0·016 | 0·11 | 0·26 | 0·069 | 0·29 | 0·82 | 0·046 |
|  |  |  |  |  |  |  |  |
| SLE care insecurity |  |  |  |  |  |  |  |
| No | 47·9 (46·6, 49·2) | 52·4 (51·1, 53·8) | 51·9 (50·4, 53·5) | 51·3 (49·8, 52·8) | 48·3 (46·9, 49·7) | 4·8 (4·2, 5·5) | 3·8 (3·1, 4·4) |
| Yes | 46·3 (44·8, 47·8) | 54·4 (52·8, 56·1) | 54·1 (52·3, 56·0) | 51·9 (50·2, 53·6) | 46·0 (44·3, 47·6) | 5·9 (5·1, 6·7) | 5·1 (4·3, 5·9) |
| p | 0·12 | 0·068 | 0·081 | 0·62 | 0·040 | 0·048 | 0·014 |
|  |  |  |  |  |  |  |  |
| **Adjustment from trimmed model\*\*** |  |  |  |  |  |  |  |
| Food insecurity |  |  |  |  |  |  |  |
| No | 47·6 (46·5, 48·6) | 53·2 (52·0, 54·3) | 52·4 (51·1, 53·7) | 51·2 (50·0, 52·4) | 47·7 (46·5, 48·8) | 5·3 (4·7, 5·8) | 4·0 (3·5, 4·6) |
| Yes | 45·4 (43·0, 47·9) | 53·7 (51·1, 56·3) | 55·1 (52·2, 58·0) | 53·2 (50·5, 55·9) | 45·6 (42·9, 48·3) | 5·5 (4·2, 6·8) | 5·7 (4·4, 7·0) |
| p | 0·12 | 0·73 | 0·10 | 0·20 | 0·17 | 0·71 | 0·020 |
|  |  |  |  |  |  |  |  |
| Housing insecurity |  |  |  |  |  |  |  |
| No | 47·7 (46·6, 48·8) | 53·3 (52·1, 54·5) | 52·4 (51·0, 53·7) | 51·1 (49·8, 52·3) | 47·9 (46·7, 49·1) | 5·1 (4·5, 5·7) | 3·8 (3·2, 4·4) |
| Yes | 45·6 (43·5, 47·7) | 53·2 (51·0, 55·4) | 54·6 (52·1, 57·1) | 53·2 (50·9, 55·5) | 45·3 (43·1, 47·6) | 6·0 (5·0, 7·1) | 6·0 (4·9, 7·1) |
| p | 0·089 | 0·96 | 0·12 | 0·11 | 0·055 | 0·13 | 0·0006 |
|  |  |  |  |  |  |  |  |
| Financial insecurity |  |  |  |  |  |  |  |
| No | 47·9 (46·8, 49·0) | 52·8 (51·6, 54·0) | 52·5 (51·2, 53·8) | 51·0 (49·8, 52·2) | 47·7 (46·5, 48·9) | 5·2 (4·6, 5·8) | 4·0 (3·4, 4·6) |
| Yes | 44·6 (42·4, 46·8) | 55·0 (52·6, 57·3) | 54·2 (51·5, 56·9) | 53·7 (51·2, 56·1) | 45·8 (43·4, 48·3) | 5·6 (4·4, 6·7) | 5·6 (4·4, 6·8) |
| p | 0·011 | 0·11 | 0·27 | 0·064 | 0·18 | 0·58 | 0·016 |
|  |  |  |  |  |  |  |  |
| SLE care insecurity |  |  |  |  |  |  |  |
| No | 48·1 (46·8, 49·3) | 52·2 (50·9, 53·6) | 51·9 (50·3, 53·4) | 51·2 (49·8, 52·6) | 48·5 (47·1, 49·9) | 4·7 (4·1, 5·4) | 3·6 (3·0, 4·3) |
| Yes | 46·0 (44·5, 47·5) | 54·7 (53·1, 56·3) | 54·2 (52·4, 56·0) | 52·0 (50·3, 53·7) | 45·6 (44·0, 47·3) | 6·1 (5·3, 6·8) | 5·3 (4·5, 6·1) |
| p | 0·046 | 0·023 | 0·052 | 0·47 | 0·0084 | 0·012 | 0·0023 |

\*Adjusted means (95% confidence interval) from multivariable linear regression analyses controlling for age, sex, race and ethnicity, marital status, education, income below poverty, limited health literacy, comorbid conditions, obesity, disease duration, disease damage, high glucocorticoid use, immunosuppressive use, and hydroxychloroquine use·

\*\*Adjusted means (95% confidence interval) from trimmed multivariable linear regression analyses controlling for education, comorbid conditions, disease damage, high glucocorticoid use, and hydroxychloroquine use.