**S2 Table.** Complementary results of the generalized additive model association analysis for the county level covariates with the estimated degrees of freedom (est. DoF) results for multilevel and factor smooth interaction models.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Est. DoF** | **Ref. est. DoF** | **P-value** |  |
| Percentage of uninsured population | 3·240 | 3·729 | <0·001 |  |
| Percentage of adults with excessive alcohol consumption | 6·151 | 6·653 | <0·001 |  |
| Percentage of adults consuming tobacco | 1·001 | 1·002 | 0·403 |   |
| Percentage of uninsured population | 1·001 | 1·002 | 0·288 |   |
| Average Mental Unhealthy Days | 3·248 | 3·772 | <0·001 |  |
| Average Physical Unhealthy Days | 4·595 | 5·187 | <0·001 |  |
|  |  |   |  |  |
| **FACTOR SMOOTHER INTERACTION MODEL** |   |
| **Mental Unhealthy Days by Age Group** |   |
|  | **Est. DoF** | **Ref. est. DoF** | **P-value** |  |
| >15 y  | 1·002 | 1·004 | 0·754 |   |
| 15 – 19 y | 1·003 | 1·005 | 0·162 |   |
| 20 – 24 y | 1·003 | 1·005 | 0·029 |  |
| 25 – 29 y | 1·008 | 1·015 | <0·001 |  |
| 30 – 34 y | 1·003 | 1·005 | <0·001 |  |
| 35 – 39 y | 1·966 | 2·496 | 0·004 |  |
| 40 – 44 y | 1·003 | 1·005 | <0·001 |  |
| 45 – 49 y | 1·002 | 1·004 | <0·001 |  |
| 50 – 54 y | 2·244 | 2·863 | 0·002 |  |
| 55 – 59 y | 2·336 | 2·987 | 0·352 |   |
| 60 – 64 | 1·004 | 1·006 | 0·451 |   |
| < 64 y | 1·002 | 1·004 | 0·544 |   |
| Not Available | 1·002 | 1·004 | 0·359 |   |
| **Average Physical Unhealthy Days by Age Group** |
| >15 y | 1·002 | 1·004 | 0·166 |   |
| 15 – 19 y | 1·009 | 1·018 | 0·867 |   |
| 20 – 24 y | 1·001 | 1·003 | 0·462 |   |
| 25 – 29 y | 2·196 | 2·784 | 0·433 |   |
| 30 – 34 y | 1·303 | 1·542 | 0·569 |   |
| 35 – 39 y | 2·731 | 3·413 | 0·002 |  |
| 40 – 44 y | 1·003 | 1·005 | 0·001 |  |
| 45 – 49 y | 1·514 | 1·860 | 0·083 |  |
| 50 – 54 y | 1·002 | 1·004 | 0·009 |  |
| 55 – 59 y | 2·746 | 3·465 | <0·001 |  |
| 60 – 64 | 2·655 | 3·373 | 0·001 |  |
| < 64 y | 2·899 | 3·678 | <0·001 |  |
| Not Available | 1·003 | 1·007 | 0·580 |   |
| **Mental Unhealthy Days by Sex** |
| Females | 1·001 | 1·002 | <0·001 |  |
| Males | 4·109 | 4·975 | <0·001 |  |
| **Physical Unhealthy Days by Sex** |
| Females | 1·001 | 1·002 | <0·001 |  |
| Males | 3·983 | 4·817 | 0·001 |  |
| **Mental Unhealthy Days by Race** |
| White | 3·381 | 4·002 | <0·001 |  |
| Black | 1·003 | 1·006 | 0·998 |   |
| Other | 1·001 | 1·002 | 0·002 |  |
| **Physical Unhealthy Days by Race** |   |
| White | 4·089 | 4·735 | <0·001 |  |
| Black | 1·001 | 1·001 | 0·055 |  |
| Other | 3·060 | 3·781 | 0·106 |   |