**Appendix S1. Methods**

We ascertained whether participants had indicators of clinical sleep disorders. The question “Has anyone ever observed you stop breathing in your sleep?” was used as an indicator of possible sleep apnea. We used the question “Have you ever been told, or suspected yourself, that you seem to "act out your dreams" while asleep (for example, punching, flailing your arms in the air, making running movements, etc.)?” to indicate possible cases of REM sleep-behaviour disorder. We defined possible cases of insomnia based on difficulty initiating or maintaining sleep at least 3 times/week in the past month, and associated functional impairment (i.e., the extent to which sleep problems interfere with daily functioning rated as “much” or “very much”). We identified N=7,680 participants (27%) with a possible sleep disorder. We removed participants with possible sleep disorders from the sample and recalculated estimates from fully adjusted models.

**Table S1. List of conditions included in the “number of chronic conditions” variable**

| **Condition** | **Measurement / Question** |
| --- | --- |
| Heart disease (including congestive heart failure, or CHF) | Has a doctor ever told you that you have heart disease (including congestive heart failure, or CHF)? |
| Peripheral vascular disease or poor circulation in limbs | Has a doctor ever told you that you have peripheral vascular disease or poor circulation in your limbs? |
| Memory problem | Has a doctor ever told you that you have a memory problem? |
| Dementia or Alzheimer’s disease | Has a doctor ever told you that you have dementia or Alzheimer’s disease? |
| Multiple sclerosis | Has a doctor ever told you that you have multiple sclerosis? |
| Epilepsy | Has a doctor ever told you that you have epilepsy? |
| Migraine headaches | Has a doctor ever told you that you have migraine headaches? |
| Intestinal or stomach ulcers | Has a doctor ever told you that you have intestinal or stomach ulcers? |
| Bowel disorder | Has a doctor ever told you that you have a bowel disorder such as Crohn’s Disease, ulcerative colitis, or Irritable Bowel Syndrome? |
| Bowel incontinence | Has a doctor ever told you that you experience bowel incontinence? |
| Urinary incontinence | Has a doctor ever told you that you experience urinary incontinence? |
| Macular degeneration | Has a doctor ever told you that you have macular degeneration? |
| Cancer | Has a doctor ever told you that you had cancer? |
| Allergies | Has a doctor ever told you that you have allergies? |
| Back problems excluding fibromyalgia and arthritis | Has a doctor ever told you that you have back problems, excluding fibromyalgia and arthritis? |
| Kidney disease or kidney failure | Has a doctor ever told you that you have kidney disease or kidney failure? |
| Receiving dialysis treatment | Are you currently receiving dialysis treatment? (If yes, what type of dialysis?) |
| Other long-term physical or mental condition | Do you have any other long-term physical or mental condition that has been diagnosed by a health professional? |
| Pneumonia - past year | In the past year, have you seen a doctor for any of the following reasons? Pneumonia |
| Flu (Influenza) - past year | In the past year, have you seen a doctor for any of the following reasons? Flu (influenza) |
| Urinary Tract Infection - past year | In the past year, have you seen a doctor for any of the following reasons? Urinary tract infection |
| Other infections - past year | In the past year, have you seen a doctor for any of the following reasons? Other infections |
| Osteoarthritis  | Has a doctor ever told you that you have osteoarthritis in one or both hands?Has a doctor ever told you that you have osteoarthritis in the hip? Has a doctor ever told you that you have osteoarthritis in the knee? |
| Rheumatoid arthritis | Has a doctor ever told you that you have rheumatoid arthritis? |
| Other type of arthritis | Has a doctor ever told you that you have any other type of arthritis? |
| High blood pressure or hypertension | Has a doctor ever told you that you have high blood pressure or hypertension? |
| Under-active thyroid gland | Has a doctor ever told you that you have an UNDER-active thyroid gland (sometimes called hypothyroidism or myxedema)? |
| Over-active thyroid gland (hyperthyroidism) | Has a doctor ever told you that you have an OVER-active thyroid gland (sometimes called hyperthyroidism or Graves’ disease)? |
| Angina | Has a doctor ever told you that you have angina (or chest pain due to heart disease)? |
| Stroke or CVA | Has a doctor ever told you that you have experienced a Stroke or CVA? (cerebrovascular accident)? |
| Experienced a ministroke or TIA | Has a doctor ever told you that you have experienced a ministroke or TIA (Transient Ischemic Attack)? |
| Heart attack or myocardial infarction | Has a doctor ever told you that you have had a heart attack or myocardial infarction? |
| Asthma | Has a doctor ever told you that you have asthma? |
| Osteoporosis | Has a doctor ever told you that you have osteoporosis, sometimes called low bone mineral density, or thin, brittle or weak bones? |
| Parkinsonism or Parkinson’s Disease | Has a doctor ever told you that you had Parkinsonism or Parkinson’s Disease? |
| Emphysema, chronic bronchitis, COPD, or chronic changes in lungs due to smoking | Has a doctor told you that you have/had any of the following: emphysema, chronic bronchitis, chronic obstructive pulmonary disease (COPD), or chronic changes in lungs due to smoking? |
| Diabetes, borderline diabetes or blood sugar is high | Has a doctor ever told you that you have diabetes, borderline diabetes or that your blood sugar is high? |
| Positive screen for traumatic brain injury | Positive Screen for Traumatic Brain Injury (TBI) |
| Anxiety disorder | Has a doctor ever told you that you have an anxiety disorder such as a phobia, obsessive-compulsive disorder or a panic disorder? |
| Depression | Has a doctor ever told you that you suffer from clinical depression? |
| Mood disorder | Has a doctor ever told you that you have a mood disorder such as depression (including manic depression), bipolar disorder, mania, or dysthymia? |
| Post-traumatic stress disorder (PTSD) | Positive screen for PTSD based on the Primary Care PTSD (PC-PTSD) screening instrument |

**Table S2. Sensitivity analysis, removal of people with indicators of sleep disorders1**

|  |  |  |
| --- | --- | --- |
|   | **PR2** | **95% CI** |
| **Dissatisfaction with life** |   |   |
| Sleep duration |  |  |
| Short vs normal | 1.29 | (1.15 - 1.46) |
| Long vs normal | 1.03 | (0.84 - 1.25) |
| Sleep dissatisfaction | 1.76 | (1.60 - 1.93) |
| Insomnia symptoms | 1.38 | (1.25 - 1.51) |
| Daytime impairment due to insomnia symptoms | 1.69 | (1.52 - 1.88) |
| **Psychological distress** |  |  |
| Sleep duration |  |  |
| Short vs normal | 1.15 | (1.09 - 1.22) |
| Long vs normal | 1.14 | (1.05 - 1.24) |
| Sleep dissatisfaction | 1.30 | (1.25 - 1.36) |
| Insomnia symptoms | 1.25 | (1.19 - 1.30) |
| Daytime impairment due to insomnia symptoms | 1.41 | (1.34 - 1.49) |
| **Poor self-reported mental health** |  |  |
| Sleep duration |  |  |
| Short vs normal | 1.41 | (1.15 - 1.71) |
| Long vs normal | 1.72 | (1.34 - 2.21) |
| Sleep dissatisfaction | 1.68 | (1.43 - 1.96) |
| Insomnia symptoms | 1.33 | (1.13 - 1.56) |
| Daytime impairment due to insomnia symptoms | 1.98 | (1.67 - 2.35) |

 1N=7,680 participants (27%) were excluded

2Estimates adjusted for sociodemographic, lifestyle, and clinical covariates