**Supplementary table**

This Supplementary table formed part of the original submission. We post it as supplied by the authors.

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The predictors for new onsets of Irritable Bowel Syndrome, Chronic Fatigue Syndrome and Fibromyalgia: The Lifelines study.

**Supplementary Table 1 – Odds ratios of predictors for IBS, CFS and FM obtained from a LASSO penalized logistic regression analysis**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Predictors** |  | IBS | | CFS | | FM | |
|  |  | OR(β) | %\*13 | OR(β) | %\*13 | OR(β) | %\*13 |
| **Socio-demographic** |  |  |  |  |  |  |  |
| Sex |  | 1.88 | 100 | 1.00 | 5 | 3.16 | 100 |
| Age at the baseline |  | 1.00 | 0 | 1.00 | 0 | 1.00 | 0 |
| Race (White European) |  | 1.14 | 80 | 1.00 | 5 | 1.00 | 0 |
| Living style\*1 | Live with parents | 0.99 | 10 | 1.00 | 0 | 0.97 | 20 |
|  | Live with partner | 0.98 | 50 | 1.00 | 0 | 1.06 | 65 |
|  | Single | 1.14 | 65 | 1.00 | 0 | 1.00 | 0 |
|  | Others | 1.05 | 70 | 1.00 | 0 | 0.98 | 40 |
| Lower education level |  | 1.00 | 5 | 1.03 | 40 | 1.01 | 20 |
| Lower income |  | 0.99 | 25 | 1.00 | 0 | 1.00 | 0 |
| Working status\*2 | Paid work | 0.90 | 100 | 1.00 | 0 | 0.94 | 60 |
|  | Student | 1.12 | 95 | 1.00 | 0 | 0.85 | 80 |
|  | Unfit to work | 1.01 | 20 | 1.07 | 60 | 1.00 | 5 |
| Duration of searching job\*3 | between 6 months and 1 year | 0.94 | 45 | 1.00 | 0 | 1.00 | 10 |
|  | between 1 year and 3 years | 0.99 | 5 | 1.00 | 0 | 1.01 | 5 |
|  | more than 3 years | 0.97 | 30 | 1.12 | 60 | 1.02 | 20 |
|  | retired/ have job | 1.00 | 5 | 1.00 | 0 | 1.01 | 5 |
| **General medical condition and health status** | |  |  |  |  |  |  |
| Disturbed kidney function |  | 1.00 | 5 | 1.00 | 0 | 1.00 | 0 |
| Diabetes mellitus |  | 1.01 | 20 | 1.00 | 0 | 0.90 | 70 |
| Cancer |  | 1.00 | 5 | 1.00 | 0 | 1.00 | 0 |
| High cholesterol diagnosis |  | 1.04 | 65 | 1.19 | 85 | 1.00 | 0 |
| Hypertension |  | 0.97 | 55 | 1.00 | 5 | 0.98 | 25 |
| Stroke |  | 0.98 | 30 | 1.00 | 0 | 0.96 | 30 |
| Irritable Bowel Syndrome (IBS) | | 1.00 | 0 | 1.08 | 65 | 1.77 | 100 |
| Fibromyalgia (FM) |  | 1.49 | 100 | 1.00 | 10 | 1.00 | 0 |
| Chronic fatigue syndrome (CFS) | | 0.98 | 30 | 1.00 | 0 | 1.00 | 10 |
| Asthma/ COPD |  | 0.97 | 55 | 1.00 | 0 | 1.00 | 0 |
| Heart-related disorder |  | 1.05 | 60 | 1.00 | 0 | 1.00 | 0 |
| Gastrointestinal disorders \*4 |  | 1.23 | 100 | 1.03 | 40 | 1.15 | 95 |
| Kidney diseases \*5 |  | 1.17 | 100 | 1.03 | 25 | 0.99 | 5 |
| Neurological disorder |  | 1.00 | 5 | 1.00 | 0 | 1.00 | 5 |
| Blood related disorder |  | 1.00 | 15 | 1.00 | 0 | 1.02 | 45 |
| Musculoskeletal disorders disorders\*6 |  | 1.00 | 0 | 1.00 | 0 | 1.75 | 100 |
| Skin related disorder |  | 1.00 | 5 | 1.00 | 0 | 1.00 | 20 |
| Psychiatric disorder\*7 |  | 1.11 | 100 | 1.07 | 70 | 1.03 | 65 |
| Allergy |  | 1.28 | 100 | 1.00 | 10 | 1.06 | 85 |
| No listed disorder |  | 0.96 | 75 | 1.00 | 0 | 0.95 | 70 |
| Body Mass Index |  | 0.98 | 100 | 1.00 | 0 | 1.01 | 95 |
| Somatization (Symptom Check List; SCL-908) | | 1.03 | 100 | 1.02 | 100 | 1.04 | 100 |
| The RAND 36-Item health Survey9 | Physical functioning | 1.00 | 15 | 1.00 | 10 | 0.99 | 60 |
|  | Role functioning Physical | 1.00 | 0 | 1.00 | 0 | 1.00 | 0 |
|  | Bodily pain | 1.00 | 25 | 1.00 | 0 | 0.99 | 100 |
|  | general health | 0.99 | 100 | 0.99 | 100 | 0.99 | 85 |
|  | vitality | 1.00 | 0 | 0.98 | 100 | 1.00 | 0 |
|  | social functioning | 1.00 | 0 | 1.00 | 20 | 1.00 | 0 |
|  | role functioning mental | 1.00 | 0 | 1.00 | 0 | 1.00 | 0 |
|  | mental health | 1.00 | 0 | 1.00 | 0 | 1.00 | 0 |
| **Commonly used medication** | |  |  |  |  |  |  |
| Paracetamol use last year |  | 1.02 | 80 | 1.00 | 0 | 1.00 | 10 |
| Pain killers/acetylsalicylic acid | | 1.00 | 10 | 1.01 | 20 | 1.00 | 5 |
| Pain killers/ Ibuprofen or Naproxen | | 1.00 | 20 | 1.00 | 0 | 1.01 | 20 |
| **Anatomical Therapeutic Chemical Classification System (ATC code, third level)** | | | | | | | |
| Peptic ulcer and gastro-esophageal reflux disease (A02B) | | 1.01 | 10 | 1.01 | 10 | 1.95 | 95 |
| Functional gastrointestinal disorders (A03A) | | 5.21 | 100 | 1.11 | 45 | 1.02 | 25 |
| Functional gastrointestinal disorders propulsive (A03F) | | 1.34 | 90 | 1.02 | 10 | 1.00 | 0 |
| Alimentary tract and metabolism (A06A) | | 2.92 | 100 | 1.00 | 0 | 1.00 | 10 |
| Blood glucose lowering drugs, excl insulins (A10B) | | 1.02 | 20 | 1.00 | 0 | 0.98 | 10 |
| Alimentary tract and metabolism, mineral supplements, calcium (A12A) | | 1.00 | 10 | 1.00 | 0 | 1.00 | 0 |
| Antithrombotic agents (B01A) | | 0.91 | 80 | 1.00 | 0 | 1.00 | 0 |
| Vitamin B12 and folic acid (B03B) | | 0.84 | 75 | 1.03 | 15 | 1.00 | 0 |
| Low-ceiling diuretics, thiazides (C03A) | | 0.94 | 65 | 1.00 | 0 | 1.00 | 0 |
| Beta blocking agents (C07A) | | 0.99 | 20 | 1.00 | 0 | 1.00 | 0 |
| Selective calcium channel blockers with mainly vascular effects (C08C) | | 1.09 | 60 | 1.00 | 0 | 0.99 | 5 |
| Ace inhibitors, plain (C09A) | | 0.94 | 60 | 1.00 | 0 | 0.97 | 20 |
| Angiotensin II receptor blockers (ARBs), plain (C09C) | | 0.99 | 5 | 1.05 | 20 | 1.25 | 65 |
| Lipid modifying agents, plain (C10A) | | 1.00 | 5 | 1.00 | 0 | 0.99 | 10 |
| Dermatologicals/corticosteroids (D07A) | | 1.00 | 0 | 1.00 | 0 | 1.07 | 40 |
| Contraceptives for topical use (G02B) | | 1.01 | 15 | 1.00 | 0 | 1.00 | 0 |
| Hormonal contraceptives for systemic use (G03A) | | 0.77 | 85 | 1.00 | 0 | 1.00 | 0 |
| Antiandrogens (G03H) |  | 1.67 | 100 | 1.00 | 0 | 0.99 | 5 |
| Thyroid preparations (H03A) | | 1.02 | 35 | 1.00 | 0 | 1.15 | 90 |
| Anti-inflammatory and antirheumatic products, non-steroids (M01A) | | 1.09 | 90 | 1.00 | 0 | 1.00 | 10 |
| Anxiolytics (N05B) |  | 1.04 | 35 | 1.02 | 25 | 1.00 | 0 |
| Hypnotics and sedatives (N05C) | | 0.98 | 20 | 1.02 | 15 | 0.97 | 25 |
| Antidepressants (N06A) |  | 0.96 | 50 | 1.11 | 75 | 1.08 | 80 |
| Decongestants and other nasal preparations for topical use (R01A) | | 1.03 | 45 | 1.00 | 0 | 1.30 | 90 |
| Adrenergics, inhalants (R03A) | | 1.19 | 100 | 1.00 | 0 | 1.02 | 30 |
| Other drugs for obstructive obstructive airway diseases, inhalants (R03B) | | 0.85 | 80 | 1.00 | 0 | 1.00 | 5 |
| Antihistamines for systemic use (R06A) | | 0.99 | 15 | 1.06 | 25 | 1.01 | 25 |
| Sensory organs/ Other ophthalmologicals (S01X) | | 1.00 | 5 | 1.00 | 0 | 1.36 | 100 |
| Antimigraine preparations (N02C) | | 1.00 | 5 | 1.00 | 0 | 1.00 | 5 |
| No medication use |  | 0.99 | 20 | 1.00 | 0 | 0.97 | 70 |
| **Healthcare use** |  |  |  |  |  |  |  |
| No contact with GP/specialists | | 1.00 | 5 | 1.00 | 0 | 1.16 | 85 |
| Contact with GP 4 or more times | | 1.35 | 100 | 1.13 | 60 | 0.95 | 55 |
| Contact with the same specialist | | 0.98 | 10 | 1.00 | 0 | 1.00 | 0 |
| Contact with multiple specialists | | 1.13 | 85 | 1.01 | 10 | 1.00 | 0 |
| **Health behaviors and related variables** | |  |  |  |  |  |  |
| Physical activity |  | 1.00 | 35 | 1.00 | 0 | 1.00 | 0 |
| Smoking |  | 0.91 | 95 | 1.00 | 0 | 1.00 | 5 |
| Sleep disturbance |  | 1.04 | 100 | 1.14 | 100 | 1.08 | 100 |
| Alcohol intake |  | 1.05 | 95 | 1.00 | 0 | 1.12 | 95 |
| Frequency of skip work due to illness in the past year (exclude pregnancy) | | 1.02 | 70 | 1.00 | 5 | 0.99 | 10 |
| **Psychosocial variables** |  |  |  |  |  |  |  |
| NEO Personality Inventory  (NEO PI-R10) | Competence | 1.00 | 15 | 1.00 | 0 | 1.00 | 0 |
| Anger hostility | 1.00 | 0 | 1.00 | 0 | 1.00 | 20 |
| Self-consciousness | 1.00 | 45 | 1.00 | 0 | 1.00 | 0 |
| Impulsivity | 1.00 | 0 | 1.00 | 0 | 1.00 | 0 |
| Excitement seeking | 1.00 | 10 | 1.00 | 0 | 1.00 | 30 |
| Self-discipline | 1.00 | 5 | 1.00 | 0 | 1.02 | 90 |
| Vulnerability | 1.00 | 5 | 1.00 | 0 | 1.00 | 0 |
| Deliberation | 1.00 | 0 | 1.00 | 0 | 1.00 | 0 |
| Severe ill, injured or victim of violence in the past year according to the Life of threatening Experience11 (LTE) | | 0.92 | 75 | 1.00 | 0 | 0.76 | 90 |
| The severity of other serious life-events in the past year according to the Life of threatening Experience11 (LTE) | | 1.03 | 95 | 1.03 | 90 | 1.03 | 80 |
| Experience difficulties and stress related to your health (e.g., regularly ill, long-term disorder) in the past year according to the Long-term Difficulties Inventory (LDI)11 | | 1.21 | 100 | 1.35 | 100 | 1.13 | 100 |
| The severity of long-term difficulties according to the Long-term Difficulties Inventory (LDI)11 | | 1.01 | 90 | 1.00 | 0 | 1.00 | 0 |
| **Psychiatric disorders (The Mini-international Neuropsychiatric Interview (MINI12)** | | | | | | | |
| Depression diagnosis | Major depressive disorder and dysthymia | 0.89 | 75 | 1.00 | 0 | 0.97 | 35 |
| Anxiety | GAD, Panic with/without agoraphobia, social phobia, agoraphobia | 1.01 | 20 | 1.02 | 20 | 1.00 | 0 |

\*1. In a relationship but not cohabit was used as a reference category, \*2. Not working/ paid work of less than 12 hours per week was used as a reference category, \*3. Less than 6 months was used as a reference category \*4. Gastrointestinal disorders including Stomach ulcer, Ulcerative colitis, Crohn's disease, hepatitis, liver cirrhosis, celiac disease, gallstones, \*5. Kidney diseases including kidney stones, chronic cystitis, incontinence, \*6. Musculoskeletal disorders including osteoarthritis, joint inflammation, osteoporosis, back or neck hernia, RSI, hip fracture, fractures other than a hip fracture, \*7. Psychiatric disorders including burnout, depression, social phobia, agoraphobia, panic disorder, anxiety disorders, bipolar, schizophrenia, eating disorder, obsessive/compulsive disorder,\*8 (Derogatis *et al.*, 1973), \*9. (Hays and Morales, 2001), \*10.(Costa and McCrae, 1992) OR (Costa and McCrae, 2008), \*11. (Rosmalen *et al.*, 2012), \*12. (Sheehan *et al.*, 1998), \*13. % indicates the frequency of the predictor’s getting non-zero coefficients among 20 imputed datasets.

**References**

**Costa PT, McCrae RR** (1992) *Revised NEO personality inventory (NEO-PI-R) and NEO five-factor inventory (NEO-FFI)*. *Odessa FL Psychological Assessment Resources*.

**Derogatis LR, Lipman RS, Covi L** (1973) SCL-90: an outpatient psychiatric rating scale--preliminary report. *Psychopharmacology bulletin* **9**, 13–28.

**Hays RD, Morales LS** (2001) The RAND-36 measure of health-related quality of life. *Annals of Medicine* **33**, 350–357.

**Rosmalen JGM, Bos EH, De Jonge P** (2012) Validation of the long-term difficulties inventory (LDI) and the list of threatening experiences (LTE) as measures of stress in epidemiological population-based cohort studies. *Psychological Medicine* **42**, 2599–2608.

**Sheehan D, Lecrubier Y, Sheehan K, Amorim P, Janavs J, Weiller E, Hergueta T, Baker R, Dunbar G** (1998) The Mini-International Neuropsychiatric Interview (M.I.N.I.): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *The Journal of clinical psychiatry* **59 Suppl 2**, 22-33;quiz 34-57.