Table S4. Characteristics of the sample restricted to those had available medical check-up data

|  |  |  |  |
| --- | --- | --- | --- |
| 　 | Total, N (%) | Cholecystectomy | Appendectomy |
| 　 |  | **Without** | **With** | **p-value1** | **Without** | **With** | **p-value1** |
| Total N | 181,933 | 178,695 (98.22) | 3,238 (1.78) |  | 177,573 (97.60) | 4,360 (2.40) |  |
| Age2 (mean, SD) | 43.63 (13.5) | 43.54 (13.4) | 48.92 (13.1) | <0.001 | 43.68 (13.5) | 41.76 (13.6) | <0.001 |
| Sex |  |  |  |  |  |  |  |
|  Male | 108,020 (59.4) | 106,068 (59.4) | 1,952 (60.3) | 0.287 | 105,376 (59.3) | 2,644 (60.6) | 0.084 |
|  Female | 73,913 (40.6) | 72,627 (40.6) | 1,286 (39.7) |  | 72,197 (40.7) | 1,716 (39.4) |  |
| Comorbidities |  |  |  |  |  |  |  |
|  Diabetes mellitus | 6,631 (3.6) | 6,429 (3.6) | 202 (6.2) | <0.001 | 6,545 (3.7) | 86 (2.0) | <0.001 |
|  Inflammatory bowel disease | 112 (0.1) | 108 (0.1) | 4 (0.1) | 0.151 | 108 (0.1) | 4 (0.1) | 0.416 |
|  Smoking |  |  |  |  |  |  |  |
|  Missing | 4,169 (2.3) | 4,101 (2.3) | 68 (2.1) | 0.001 | 4,050 (2.3) | 119 (2.7) | 0.040 |
|  Never | 107,090 (58.9) | 105,115 (58.8) | 1,975 (61.0) |  | 104,543 (58.9) | 2,547 (58.4) |  |
|  Past | 17,042 (9.4) | 16,706 (9.3) | 336 (10.4) |  | 16,597 (9.3) | 445 (10.2) |  |
|  Current | 53,632 (29.5) | 52,773 (29.5) | 859 (26.5) |  | 52,383 (29.5) | 1,249 (28.6) |  |
|  Alcohol |  |  |  |  |  |  |  |
|  Missing | 2,885 (1.6) | 2,834 (1.6) | 51 (1.6) | <0.001 | 2,805 (1.6) | 80 (1.8) | 0.001 |
|  Never | 86,196 (47.4) | 84,505 (47.3) | 1,691 (52.2) |  | 84,256 (47.4) | 1,940 (44.5) |  |
|  Current | 92,852 (51.0) | 91,356 (51.1) | 1,496 (46.2) |  | 90,512 (51.0) | 2,340 (53.7) |  |
|  BMI |  |  |  |  |  |  |  |
|  Missing | 107 (0.1) | 106 (0.1) | 1 (0.0) | <0.001 | 104 (0.1) | 3 (0.1) | 0.633 |
|  Normal (BMI<25) | 125,336 (68.9) | 123,400 (69.1) | 1,936 (59.8) |  | 122,305 (68.9) | 3,031 (69.5) |  |
|  Obesity (BMI≥25) | 56,490 (31.0) | 55,189 (30.9) | 1,301 (40.2) |  | 55,164 (31.1) | 1,326 (30.4) |  |

Values are presented as number (%) or mean±standard deviation

1The chi-square test for categorical values and the *t*-test for continuous values. 2Age at study entry.