**S Table 1. Comparison of baseline demographic and clinical characteristics between study population and excluded population**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Study population (n = 6598570) | Exluded population (n = 8848495) | *P* value | Effect size |
| Sex (male, %) | 4025588 (61.01) | 4003649 (45.25) | < 0.0001 | 0.156 |
| Age (years) | 47.78±13.38 | 48.3±14.71 | < 0.0001 | 0.018 |
| Smokers | 1725830 (26.15) | 2030189 (22.94) | < 0.0001 | 0.037 |
| Alcohol consumption | 3353768 (50.83) | 3827134 (43.25) | < 0.0001 | 0.075 |
| Physical activity | 1309736 (19.85) | 1510944 (17.08) | < 0.0001 | 0.036 |
| Income (low) | 1013057 (15.35) | 2029058 (22.93) | < 0.0001 | 0.094 |
| Obesity | 2134798 (32.35) | 2821673 (31.89) | < 0.0001 | 0.005 |
| Abdominal obesity | 1256513 (19.04) | 1836693 (20.76) | < 0.0001 | 0.021 |
| Diabetes mellitus | 540593 (8.19) | 1730184 (19.55) | < 0.0001 | 0.028 |
| Hypertension | 1672707 (25.35) | 2546221 (28.78) | < 0.0001 | 0.038 |
| Dyslipidemia | 1203229 (18.23) | 1730184 (19.55) | < 0.0001 | 0.017 |
| Cardiovascular disease | 108740 (1.65) | 59011 (0.67) | < 0.0001 | 0.047 |
| Cancer | 108772 (1.65) | 183128 (2.07) | < 0.0001 | 0.015 |
| Chronic kidney disease | 423863 (6.42) | 567396 (6.41) | 0.3737 | 0 |
| BMI (kg/m2) | 23.75±3.1 | 23.67±3.31 | < 0.0001 | 0.013 |
| Waist circumference (cm) | 80.63±8.83 | 79.82±9.36 | < 0.0001 | 0.044 |
| Glucose (mg/dl) | 96.89±21.55 | 97.93±24.04 | < 0.0001 | 0.022 |
| Systolic BP (mmHg) | 122.46±14.52 | 122.36±15.59 | < 0.0001 | 0.003 |
| Diastolic BP (mmHg) | 76.48±9.78 | 75.93±10.27 | < 0.0001 | 0.027 |
| Cholesterol (mg/dl) | 195.76±35.93 | 194.6±37.22 | < 0.0001 | 0.016 |
| HDL (mg/dl) | 54.98±19.82 | 56.06±20.55 | < 0.0001 | 0.026 |
| LDL (mg/dl) | 115.34±46.69 | 113.79±41.32 | < 0.0001 | 0.018 |
| Triglycerides (mg/dl) | 135.94±98.88 | 129.67±97.34 | < 0.0001 | 0.032 |
| GFR (ml/min/1.72m2) | 86.83±42.09 | 89.19±35.06 | < 0.0001 | 0.029 |

Abbreviations: BMI, Body mass index; BP, Blood pressure; HDL, High-density lipoprotein; LDL, Low-density lipoprotein; GFR, Glomerular filtration rate.

**S Table 2. Comparison of hazard ratios and 95% confidence intervals of derpession in the highest VMI quartile (Q4) vs. the lower three quartiles (Q1-Q3) for BWV by both sexes**

**a) Men**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | BWV | |  |
| Subgroup |  | Q1-Q3 | Q4  Adjusted HR (95% CI) | *P* for interaction |
| **Age** | < 40 years | 1 (Ref) | 1.03 (1.017, 1.051) | <0.0001 |
|  | 40-64 years | 1 (Ref) | 1.13 (1.119, 1.143) |  |
|  | ≥65 years | 1 (Ref) | 1.15 (1.134, 1.166) |  |
| **Obesity** | No | 1 (Ref) | 1.14 (1.127, 1.148) | 0.0011 |
|  | Yes | 1 (Ref) | 1.11 (1.095, 1.124) |  |
| **Weight change (%)** | Loss (≥5) | 1 (Ref) | 1.13 (1.107, 1.148) | 0.0005 |
|  | Stable (±5) | 1 (Ref) | 1.13 (1.115, 1.147) |  |
|  | Gain (≥5) | 1 (Ref) | 1.09 (1.072, 1.106) |  |
| **Smoking** | No | 1 (Ref) | 1.13 (1.12, 1.141) | 0.5926 |
|  | Yes | 1 (Ref) | 1.13(1.112, 1.14) |  |
| **Alcohol use** | No | 1 (Ref) | 1.13 (1.121, 1.148) | 0.2232 |
|  | Yes | 1 (Ref) | 1.12 (1.114, 1.135) |  |
| **Physical activity** | No | 1 (Ref) | 1.13 (1.119, 1.138) | 0.9552 |
|  | Yes | 1 (Ref) | 1.13 (1.109, 1.145) |  |
| **Low income** | No | 1 (Ref) | 1.13 (1.12, 1.138) | 0.8179 |
|  | Yes | 1 (Ref) | 1.13 (1.107, 1.149) |  |
| **Diabetes mellitus** | No | 1 (Ref) | 1.12 (1.111, 1.129) | <0.0001 |
|  | Yes | 1 (Ref) | 1.18 (1.155, 1.201) |  |
| **Hypertension** | No | 1 (Ref) | 1.11 (1.103, 1.124) | <0.0001 |
|  | Yes | 1 (Ref) | 1.15 (1.139, 1.167) |  |
| **Dyslipidemia** | No | 1 (Ref) | 1.13 (1.118, 1.137) | 0.2749 |
|  | Yes | 1 (Ref) | 1.14 (1.117, 1.154) |  |
| **Cardiovascular disease** | No | 1 (Ref) | 1.12 (1.115, 1.133) | 0.5476 |
|  | Yes | 1 (Ref) | 1.12 (1.085, 1.158) |  |
| **Cancer** | No | 1 (Ref) | 1.13 (1.119, 1.136) | 0.0262 |
|  | Yes | 1 (Ref) | 1.08 (1.035, 1.124) |  |
| **Chronic kidney disease** | No | 1 (Ref) | 1.13 (1.117, 1.134) | 0.0025 |
|  | Yes | 1 (Ref) | 1.15 (1.12, 1.182) |  |

**b ) Women**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | BWV | |  |
| Subgroup |  | Q1-Q3 | Q4  Adjusted HR (95% CI) | *P* for interaction |
| **Age** | < 40 years | 1 (Ref) | 1.07 (1.052, 1.095) | <0.0001 |
|  | 40-64 years | 1 (Ref) | 1.09 (1.079, 1.098) |  |
|  | ≥65 years | 1 (Ref) | 1.11 (1.091, 1.119) |  |
| **Obesity** | No | 1 (Ref) | 1.06 (1.053, 1.071) | 0.0011 |
|  | Yes | 1 (Ref) | 1.04 (1.026, 1.052) |  |
| **Weight change (%)** | Loss (≥5) | 1 (Ref) | 1.08 (1.063, 1.097) | 0.0005 |
|  | Stable (±5) | 1 (Ref) | 1.05 (1.037, 1.065) |  |
|  | Gain (≥5) | 1 (Ref) | 1.03 (1.016, 1.047) |  |
| **Smoking** | No | 1 (Ref) | 1.06 (1.053, 1.068) | 0.5926 |
|  | Yes | 1 (Ref) | 1.01 (0.966, 1.057) |  |
| **Alcohol use** | No | 1 (Ref) | 1.06 (1.054, 1.07) | 0.2232 |
|  | Yes | 1 (Ref) | 1.05 (1.035, 1.07) |  |
| **Physical activity** | No | 1 (Ref) | 1.05 (1.046, 1.062) | 0.9552 |
|  | Yes | 1 (Ref) | 1.08 (1.066, 1.103) |  |
| **Low income** | No | 1 (Ref) | 1.06 (1.048, 1.064) | 0.0963 |
|  | Yes | 1 (Ref) | 1.07 (1.058, 1.09) |  |
| **Diabetes mellitus** | No | 1 (Ref) | 1.06 (1.048, 1.063) | <0.0001 |
|  | Yes | 1 (Ref) | 1.10 (1.079, 1.124) |  |
| **Hypertension** | No | 1 (Ref) | 1.05 (1.042, 1.06) | <0.0001 |
|  | Yes | 1 (Ref) | 1.10 (1.084, 1.109) |  |
| **Dyslipidemia** | No | 1 (Ref) | 1.05 (1.042, 1.059) | 0.2749 |
|  | Yes | 1 (Ref) | 1.09 (1.071, 1.099) |  |
| **Cardiovascular disease** | No | 1 (Ref) | 1.06 (1.05, 1.065) | 0.5476 |
|  | Yes | 1 (Ref) | 1.05 (1.014, 1.085) |  |
| **Cancer** | No | 1 (Ref) | 1.06 (1.051, 1.066) | 0.0262 |
|  | Yes | 1 (Ref) | 1.07 (1.028, 1.117) |  |
| **Chronic kidney disease** | No | 1 (Ref) | 1.06 (1.051, 1.066) | 0.0025 |
|  | Yes | 1 (Ref) | 1.08 (1.056, 1.102) |  |

*P* for interaction between subgroup and BWV

Adjusted for age, sex, smoking, alcohol consumption, physical activity, income, diabetes mellitus, hypertension, dyslipidemia.