**Supplementary material**

**Body mass index in midlife and risk of attempted suicide and suicide: prospective study of one million UK women**

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**Table S1. Relative risk of attempted suicide and suicide by body mass index: effect of adjustment by various factors**

|  |  |
| --- | --- |
| **Attempted suicide** | **Body mass index kg/m2** |
|  | **<20** | **20 - 24.9** | **25 - 29.9** | **≥30** |
|  | RR (95% CI) | RR (95% CI) | RR (95% CI) | RR (95% CI) |
| Stratified by year of birth, year of recruitment and adjusted for region only | 1.64 (1.45-1.85) | 1.00 (-) | 0.92 (0.86-0.98) | 1.04 (0.97-1.13) |
| Additionally adjusted separately by: |  |  |  |  |
| Deprivation | 1.60 (1.42-1.81) | 1.00 (-) | 0.90 (0.84-0.96) | 0.98 (0.91-1.06) |
| Parity | 1.63 (1.44-1.84) | 1.00 (-) | 0.92 (0.86-0.98) | 1.04 (0.97-1.13) |
| Education | 1.64 (1.45-1.85) | 1.00 (-) | 0.89 (0.83-0.95) | 0.98 (0.91-1.07) |
| Strenuous exercise | 1.62 (1.43-1.82) | 1.00 (-) | 0.90 (0.85-0.96) | 1.01 (0.93-1.09) |
| Alcohol | 1.62 (1.44-1.83) | 1.00 (-) | 0.92 (0.86-0.98) | 1.04 (0.96-1.13) |
| Smoking | 1.48 (1.31-1.67) | 1.00 (-) | 0.94 (0.88-1.00) | 1.10 (1.02-1.19) |
| Treatment for depression or anxiety | 1.51 (1.34-1.71) | 1.00 (-) | 0.87 (0.82-0.93) | 0.93 (0.86-1.00) |
|  |  |  |  |  |
| Adjusted simultaneously by all of the above | 1.38 (1.23-1.56) | 1.00 (-) | 0.89 (0.83-0.94) | 0.96 (0.88-1.04) |

|  |  |
| --- | --- |
| **Suicide** | **Body mass index kg/m2** |
|  | **<20** | **20 - 24.9** | **25 - 29.9** | **≥30** |
|  | RR (95% CI) | RR (95% CI) | RR (95% CI) | RR (95% CI) |
| Stratified by year of birth, year of recruitment and adjusted for region only | 2.41 (1.83-3.18) | 1.00 (-) | 0.81 (0.68-0.98) | 0.78 (0.61-0.99) |
| Additionally adjusted separately by: |  |  |  |  |
| Deprivation | 2.39 (1.81-3.15) | 1.00 (-) | 0.81 (0.67-0.97) | 0.76 (0.60-0.96) |
| Parity | 2.36 (1.79-3.11) | 1.00 (-) | 0.82 (0.69-0.98) | 0.78 (0.62-0.99) |
| Education | 2.41 (1.83-3.17) | 1.00 (-) | 0.82 (0.68-0.98) | 0.79 (0.62-1.00) |
| Strenuous exercise | 2.38 (1.81-3.14) | 1.00 (-) | 0.81 (0.68-0.98) | 0.77 (0.61-0.98) |
| Alcohol | 2.38 (1.81-3.14) | 1.00 (-) | 0.81 (0.68-0.97) | 0.76 (0.60-0.97) |
| Smoking | 2.29 (1.74-3.02) | 1.00 (-) | 0.83 (0.69-0.99) | 0.80 (0.63-1.02) |
| Treatment for depression or anxiety | 2.28 (1.73-3.00) | 1.00 (-) | 0.79 (0.66-0.95) | 0.71 (0.56-0.91) |
|  |  |  |  |  |
| Adjusted simultaneously by all of the above | 2.10 (1.59-2.78) | 1.00 (-) | 0.81 (0.68-0.98) | 0.74 (0.58-0.95) |

**Table S2 Methods of attempted suicide and suicide in relation to body mass index**

|  |  |
| --- | --- |
|  | **Body Mass Index (kg/m²)** |
|  | **<20** | **20-24.9** | **≥25** |
| **Cases of attempted suicide\*** | **n(%)** | **n(%)** | **n(%)** |
| **Self-poisoning** | 285 (95.6) | 2031 (94.4) | 2338 (95.2) |
| **Self-injury with low lethality methods** | 8 (2.7) | 76 (3.5) | 73 (3.0) |
| **Self-injury with high lethality methods** | 5 (1.7) | 45 (2.1) | 46 (1.9) |
| **Total** | 298 (100) | 2152 (100) | 2457 (100) |
|  |  |  |  |
| **Cases of suicide†** |  |  |  |
| **Self-poisoning** | 28 (52.8) | 100 (36.9) | 115 (43.9) |
| **Self-injury with low lethality methods** | -‡ | 7 (2.6) | 12 (4.6) |
| **Self-injury with high lethality methods** | 23 (43.4) | 164 (60.5) | 135 (51.5) |
| **Total** | 53 (100) | 271 (100) | 262 (100) |

\*23 women were excluded because method not specified

†56 women were excluded because method not specified

‡result omitted because fewer than 5 cases

**Table S3 Relative risk of attempted suicide and suicide by body mass index, using WHO categories of body mass index**

|  |  |  |
| --- | --- | --- |
|  | **Attempted suicide** | **Suicide** |
|  | **No. of cases** | **RR (95% g-s CIs)\*** | **No. of cases** | **RR (95% g-s CIs)\*** |
| **Body Mass Index (kg/m²)** |  |  |  |  |
| **<18.5** | 100 | 1.68 (1.38 – 2.04) | 18 | 2.21 (1.39 – 3.52) |
| **18.5 - 24.9** | 2,362 | 1.00 (0.96 – 1.04) | 340 | 1.00 (0.90 – 1.12) |
| **25 - 29.9** | 1,592 | 0.87 (0.83 – 0.91) | 195 | 0.76 (0.66 – 0.88) |
| **≥30** | 876 | 0.94 (0.88 – 1.00) | 89 | 0.70 (0.56 – 0.86) |

\*Relative risk and 95% group-specific confidence intervals adjusted for geographical region, deprivation index, parity, education, strenuous exercise, alcohol, smoking and treatment for depression or anxiety. Stratified by year of birth and year of recruitment.

**Table S4 Relative risk of attempted suicide and suicide by body mass index, using finer categories of body mass index**

|  |  |  |
| --- | --- | --- |
|  | **Attempted suicide** | **Suicide** |
|  | **No. of cases** | **RR (95% g-s CIs)\*** | **No. of cases** | **RR (95% g-s CIs)\*** |
| **Body Mass Index (kg/m²)** |  |  |  |  |
| **<20** | 300 | 1.45 (1.29 – 1.62) | 61 | 2.50 (1.94 - 3.22) |
| **20.0-22.4** | 870 | 1.13 (1.05 – 1.21) | 141 | 1.50 (1.27 - 1.77) |
| **22.5-24.9** | 1,292 | 1.00 (0.95 – 1.06) | 156 | 1.00 (0.85 - 1.17) |
| **25.0-27.4** | 965 | 0.93 (0.87 – 0.99) | 113 | 0.92 (0.76 - 1.10) |
| **27.5-29.9** | 627 | 0.93 (0.86 – 1.00) | 82 | 1.04 (0.84 - 1.29) |
| **30.0-32.4** | 394 | 1.00 (0.91 – 1.11) | 43 | 0.94 (0.70 - 1.27) |
| **32.5-34.9** | 239 | 1.06 (0.94 – 1.21) | 17 | 0.65 (0.40 - 1.05) |
| **35.0+** | 243 | 0.94 (0.83 – 1.07) | 29 | 0.98 (0.68 - 1.42) |

\*Relative risk and 95% group-specific confidence intervals adjusted for geographical region, deprivation index, parity, education, strenuous exercise, alcohol, smoking and treatment for depression or anxiety. Stratified by year of birth and year of recruitment.

**Table S5 Relative risk of suicide by body mass index, using diagnosis codes for intentional self-harm only (ICD-10 X60-X84)**

|  |  |
| --- | --- |
|  | **Suicide** |
|  | **No. of cases** | **RR (95% g-s CIs)\***  |
| **Body Mass Index (kg/m²)** |  |  |
| **<20** | 41 | 1.99 (1.46 - 2.71) |
| **20 - 24.9** | 210 | 1.00 (0.87 - 1.15) |
| **25 - 29.9** | 128 | 0.76 (0.64 - 0.91) |
| **≥30** | 53 | 0.64 (0.49 - 0.84) |

\*Relative risk and 95% group-specific confidence intervals adjusted for geographical region, deprivation index, parity, education, strenuous exercise, alcohol, smoking and treatment for depression or anxiety. Stratified by year of birth and year of recruitment.