**Supplementary file 1.** Coefficients of the regression of probit-transformed prevalence of underweight, obesity and severe obesity in women on mean body mass index.

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| --- | --- | --- | --- |
| **Variable** | **Coefficient for underweight**  | **Coefficient for obesity** | **Coefficient for severe obesity** |
| Intercept# | -1.6 (-1.7, -1.5)\*\*\* | -0.74 (-0.79, -0.68)\*\*\* | -1.4 (-1.4, -1.3)\*\*\* |
| Mean BMI (per one more unit kg/m2)# | -0.089 (-0.12, -0.06)\*\*\* | 0.27 (0.26, 0.29)\*\*\* | 0.24 (0.22, 0.26)\*\*\* |
| Age group (years)# |  |  |  |
| 20-29 | Reference | Reference | Reference |
| 30-39 | -0.34 (-0.45, -0.24)\*\*\* | -0.18 (-0.24, -0.13)\*\*\* | -0.15 (-0.23, -0.073)\*\*\* |
| 40-49 | -0.5 (-0.65, -0.36)\*\*\* | -0.23 (-0.31, -0.16)\*\*\* | -0.3 (-0.4, -0.2)\*\*\* |
| 50-59 | -0.54 (-0.72, -0.35)\*\*\* | -0.22 (-0.32, -0.13)\*\*\* | -0.34 (-0.46, -0.21)\*\*\* |
| 60-69 | -0.43 (-0.64, -0.22)\*\*\* | -0.22 (-0.32, -0.11)\*\*\* | -0.34 (-0.48, -0.2)\*\*\* |
| 70-79 | -0.28 (-0.47, -0.084)\*\* | -0.21 (-0.3, -0.11)\*\*\* | -0.33 (-0.46, -0.2)\*\*\* |
| Year (per one more recent year since 1985)# | 0.0025 (-0.0011, 0.006) | 0.0024 (0.00062, 0.0042)\*\* | 0.0035 (0.001, 0.006)\*\* |
| Region# |  |  |  |
| Central and Eastern Europe | Reference | Reference | Reference |
| Central Asia, the Middle East and North Africa | -0.1 (-0.21, 0.0043) | -0.16 (-0.22, -0.1)\*\*\* | -0.2 (-0.28, -0.12)\*\*\* |
| East and Southeast Asia | -0.21 (-0.32, -0.091)\*\*\* | 0.0075 (-0.059, 0.074) | -0.03 (-0.13, 0.07) |
| High-income Asia Pacific | -0.45 (-0.63, -0.27)\*\*\* | -0.12 (-0.23, -0.014)\* | -0.34 (-0.5, -0.18)\*\*\* |
| High-income western | -0.19 (-0.3, -0.091)\*\*\* | -0.11 (-0.17, -0.058)\*\*\* | 0.018 (-0.062, 0.098) |
| Latin America and the Caribbean | -0.24 (-0.34, -0.13)\*\*\* | -0.21 (-0.27, -0.15)\*\*\* | -0.23 (-0.31, -0.15)\*\*\* |
| Oceania | -0.21 (-0.4, -0.012)\* | -0.34 (-0.43, -0.25)\*\*\* | -0.24 (-0.36, -0.11)\*\*\* |
| South Asia | -0.019 (-0.15, 0.11) | -0.013 (-0.086, 0.059) | -0.062 (-0.17, 0.043) |
| Sub-Saharan Africa | -0.077 (-0.18, 0.026) | -0.21 (-0.27, -0.16)\*\*\* | -0.22 (-0.3, -0.14)\*\*\* |
| Region × mean BMI (per one more unit kg/m2) |  |  |  |
| Central and Eastern Europe | Reference | Reference | Reference |
| Central Asia, the Middle East and North Africa | -0.05 (-0.079, -0.022)\*\*\* | -0.031 (-0.045, -0.018)\*\*\* | -0.018 (-0.036, 0.0003) |
| East and Southeast Asia | -0.14 (-0.17, -0.11)\*\*\* | 0.04 (0.026, 0.054)\*\*\* | 0.015 (-0.0051, 0.035) |
| High-income Asia Pacific | -0.17 (-0.21, -0.13)\*\*\* | -0.016 (-0.038, 0.0054) | -0.061 (-0.091, -0.031)\*\*\* |
| High-income western | 0.0062 (-0.022, 0.035) | -0.013 (-0.026, 0.00096) | 0.0057 (-0.012, 0.024) |
| Latin America and the Caribbean | -0.064 (-0.094, -0.035)\*\*\* | -0.034 (-0.048, -0.02)\*\*\* | -0.03 (-0.049, -0.011)\*\* |
| Oceania | 0.023 (-0.0091, 0.054) | -0.063 (-0.077, -0.048)\*\*\* | -0.047 (-0.066, -0.028)\*\*\* |
| South Asia | -0.13 (-0.16, -0.1)\*\*\* | 0.0067 (-0.0079, 0.021) | -0.00092 (-0.021, 0.019) |
| Sub-Saharan Africa | -0.043 (-0.071, -0.016)\*\* | -0.0087 (-0.022, 0.0045) | -0.0094 (-0.027, 0.0084) |
| Region × age group (years) |  |  |  |
| Central and Eastern Europe | Reference | Reference | Reference |
| Central Asia, the Middle East and North Africa |  |  |  |
| 20-29 | Reference | Reference | Reference |
| 30-39 | 0.22 (0.094, 0.34)\*\*\* | 0.15 (0.086, 0.22)\*\*\* | 0.066 (-0.022, 0.15) |
| 40-49 | 0.41 (0.25, 0.58)\*\*\* | 0.25 (0.17, 0.34)\*\*\* | 0.19 (0.076, 0.3)\*\*\* |
| 50-59 | 0.53 (0.33, 0.73)\*\*\* | 0.29 (0.19, 0.39)\*\*\* | 0.24 (0.11, 0.38)\*\*\* |
| 60-69 | 0.54 (0.32, 0.76)\*\*\* | 0.28 (0.17, 0.39)\*\*\* | 0.29 (0.14, 0.44)\*\*\* |
| 70-79 | 0.5 (0.29, 0.71)\*\*\* | 0.26 (0.15, 0.36)\*\*\* | 0.26 (0.12, 0.4)\*\*\* |
| East and Southeast Asia |  |  |  |
| 20-29 | Reference | Reference | Reference |
| 30-39 | 0.23 (0.11, 0.36)\*\*\* | -0.07 (-0.14, -0.0016)\* | -0.2 (-0.3, -0.1)\*\*\* |
| 40-49 | 0.38 (0.22, 0.54)\*\*\* | -0.12 (-0.21, -0.041)\*\* | -0.19 (-0.31, -0.077)\*\* |
| 50-59 | 0.52 (0.32, 0.72)\*\*\* | -0.091 (-0.19, 0.0097) | -0.19 (-0.33, -0.053)\*\* |
| 60-69 | 0.46 (0.23, 0.69)\*\*\* | -0.04 (-0.15, 0.074) | -0.15 (-0.31, 0.0041) |
| 70-79 | 0.34 (0.12, 0.56)\*\* | 0.058 (-0.052, 0.17) | -0.11 (-0.26, 0.04) |
| High-income Asia Pacific |  |  |  |
| 20-29 | Reference | Reference | Reference |
| 30-39 | 0.28 (0.14, 0.42)\*\*\* | -0.00047 (-0.078, 0.077) | -0.091 (-0.2, 0.016) |
| 40-49 | 0.29 (0.11, 0.46)\*\* | -0.15 (-0.25, -0.058)\*\* | -0.12 (-0.25, 0.0044) |
| 50-59 | 0.34 (0.12, 0.56)\*\* | -0.23 (-0.34, -0.12)\*\*\* | -0.23 (-0.38, -0.073)\*\* |
| 60-69 | 0.36 (0.11, 0.6)\*\* | -0.21 (-0.33, -0.08)\*\* | -0.31 (-0.49, -0.14)\*\*\* |
| 70-79 | 0.3 (0.071, 0.54)\* | -0.24 (-0.36, -0.12)\*\*\* | -0.32 (-0.49, -0.16)\*\*\* |
| High-income western |  |  |  |
| 20-29 | Reference | Reference | Reference |
| 30-39 | 0.13 (0.013, 0.24)\* | 0.084 (0.025, 0.14)\*\* | 0.019 (-0.063, 0.1) |
| 40-49 | 0.16 (0.0059, 0.31)\* | 0.11 (0.034, 0.19)\*\* | 0.07 (-0.033, 0.17) |
| 50-59 | 0.17 (-0.022, 0.36) | 0.098 (0.0037, 0.19)\* | 0.047 (-0.081, 0.18) |
| 60-69 | 0.15 (-0.062, 0.37) | 0.1 (-0.0029, 0.21) | -0.0028 (-0.14, 0.14) |
| 70-79 | 0.072 (-0.13, 0.27) | 0.11 (0.015, 0.21)\* | -0.063 (-0.19, 0.068) |
| Latin America and the Caribbean |  |  |  |
| 20-29 | Reference | Reference | Reference |
| 30-39 | 0.26 (0.14, 0.38)\*\*\* | 0.15 (0.089, 0.22)\*\*\* | 0.092 (0.0047, 0.18)\* |
| 40-49 | 0.46 (0.3, 0.61)\*\*\* | 0.23 (0.15, 0.31)\*\*\* | 0.22 (0.11, 0.33)\*\*\* |
| 50-59 | 0.61 (0.41, 0.81)\*\*\* | 0.28 (0.18, 0.38)\*\*\* | 0.28 (0.15, 0.42)\*\*\* |
| 60-69 | 0.66 (0.44, 0.87)\*\*\* | 0.3 (0.19, 0.41)\*\*\* | 0.32 (0.17, 0.46)\*\*\* |
| 70-79 | 0.53 (0.32, 0.73)\*\*\* | 0.29 (0.19, 0.39)\*\*\* | 0.27 (0.13, 0.41)\*\*\* |
| Oceania |  |  |  |
| 20-29 | Reference | Reference | Reference |
| 30-39 | 0.2 (0.00064, 0.4)\* | 0.42 (0.32, 0.52)\*\*\* | 0.2 (0.065, 0.34)\*\* |
| 40-49 | 0.4 (0.18, 0.62)\*\*\* | 0.58 (0.47, 0.69)\*\*\* | 0.4 (0.25, 0.54)\*\*\* |
| 50-59 | 0.55 (0.31, 0.8)\*\*\* | 0.63 (0.51, 0.76)\*\*\* | 0.56 (0.39, 0.72)\*\*\* |
| 60-69 | 0.68 (0.35, 1)\*\*\* | 0.62 (0.47, 0.76)\*\*\* | 0.53 (0.34, 0.72)\*\*\* |
| 70-79 | 0.51 (0.15, 0.87)\*\* | 0.68 (0.49, 0.87)\*\*\* | 0.45 (0.19, 0.71)\*\*\* |
| South Asia |  |  |  |
| 20-29 | Reference | Reference | Reference |
| 30-39 | 0.36 (0.23, 0.49)\*\*\* | 0.023 (-0.048, 0.094) | -0.078 (-0.18, 0.02) |
| 40-49 | 0.59 (0.43, 0.76)\*\*\* | 0.079 (-0.0065, 0.16) | 0.077 (-0.04, 0.19) |
| 50-59 | 0.66 (0.45, 0.87)\*\*\* | 0.059 (-0.045, 0.16) | 0.18 (0.041, 0.32)\* |
| 60-69 | 0.56 (0.32, 0.79)\*\*\* | 0.13 (0.014, 0.25)\* | 0.21 (0.047, 0.37)\* |
| 70-79 | 0.47 (0.23, 0.71)\*\*\* | 0.26 (0.14, 0.38)\*\*\* | 0.4 (0.23, 0.57)\*\*\* |
| Sub-Saharan Africa |  |  |  |
| 20-29 | Reference | Reference | Reference |
| 30-39 | 0.41 (0.3, 0.53)\*\*\* | 0.21 (0.15, 0.27)\*\*\* | 0.18 (0.097, 0.26)\*\*\* |
| 40-49 | 0.67 (0.52, 0.82)\*\*\* | 0.25 (0.17, 0.33)\*\*\* | 0.32 (0.21, 0.42)\*\*\* |
| 50-59 | 0.82 (0.62, 1)\*\*\* | 0.28 (0.19, 0.38)\*\*\* | 0.4 (0.27, 0.53)\*\*\* |
| 60-69 | 0.8 (0.58, 1)\*\*\* | 0.23 (0.12, 0.34)\*\*\* | 0.4 (0.25, 0.55)\*\*\* |
| 70-79 | 0.75 (0.53, 0.96)\*\*\* | 0.32 (0.21, 0.43)\*\*\* | 0.42 (0.27, 0.57)\*\*\* |
| Age group (years) × mean BMI (per one more unit kg/m2) |  |  |  |
| 20-29 | Reference | Reference | Reference |
| 30-39 | 0.00087 (-0.014, 0.016) | -0.043 (-0.051, -0.035)\*\*\* | -0.031 (-0.042, -0.02)\*\*\* |
| 40-49 | -0.00078 (-0.015, 0.013) | -0.058 (-0.065, -0.05)\*\*\* | -0.043 (-0.053, -0.033)\*\*\* |
| 50-59 | 0.0012 (-0.014, 0.016) | -0.064 (-0.072, -0.057)\*\*\* | -0.052 (-0.062, -0.041)\*\*\* |
| 60-69 | -0.0088 (-0.025, 0.0071) | -0.061 (-0.069, -0.052)\*\*\* | -0.057 (-0.069, -0.045)\*\*\* |
| 70-79 | -0.015 (-0.033, 0.0038) | -0.06 (-0.07, -0.05)\*\*\* | -0.054 (-0.068, -0.04)\*\*\* |
| Age group (years) × year (per one more recent year since 1985)  |  |  |  |
| 20-29 | Reference | Reference | Reference |
| 30-39 | -0.00032 (-0.0031, 0.0024) | -0.0016 (-0.0031, -0.00016)\* | -0.000072 (-0.0022, 0.002) |
| 40-49 | -0.0026 (-0.0053, 0.000063) | -0.00088 (-0.0023, 0.00055) | -0.000028 (-0.0021, 0.002) |
| 50-59 | -0.0053 (-0.0081, -0.0025)\*\*\* | -0.0024 (-0.0039, -0.00098)\*\* | -0.00024 (-0.0023, 0.0018) |
| 60-69 | -0.0074 (-0.011, -0.0043)\*\*\* | -0.0041 (-0.0057, -0.0024)\*\*\* | -0.0015 (-0.0039, 0.0008) |
| 70-79 | -0.0054 (-0.009, -0.0019)\*\* | -0.0062 (-0.0081, -0.0043)\*\*\* | -0.0024 (-0.0051, 0.00026) |
| Region × year (per one more recent year since 1985) |  |  |  |
| Central and Eastern Europe | Reference | Reference | Reference |
| Central Asia, the Middle East and North Africa | 0.0012 (-0.0028, 0.0053) | -0.00044 (-0.0025, 0.0016) | -0.0024 (-0.0051, 0.00039) |
| East and Southeast Asia | 0.007 (0.0033, 0.011)\*\*\* | 0.0033 (0.0014, 0.0052)\*\*\* | 0.0012 (-0.0017, 0.004) |
| High-income Asia Pacific | 0.0035 (-0.00025, 0.0073) | 0.0066 (0.0047, 0.0086)\*\*\* | 0.0051 (0.0023, 0.0078)\*\*\* |
| High-income western | 0.0026 (-0.00064, 0.0058) | 0.0014 (-0.00016, 0.003) | 0.0011 (-0.0011, 0.0032) |
| Latin America and the Caribbean | 0.0044 (0.00042, 0.0083)\* | 0.002 (-0.000032, 0.004) | 0.00086 (-0.0018, 0.0036) |
| Oceania | -0.00084 (-0.011, 0.0095) | -0.0033 (-0.0062, -0.00034)\* | -0.0028 (-0.0068, 0.0011) |
| South Asia | -0.0002 (-0.0047, 0.0042) | -0.00026 (-0.0026, 0.0021) | -0.0074 (-0.011, -0.004)\*\*\* |
| Sub-Saharan Africa | 0.002 (-0.0018, 0.0058) | 0.0045 (0.0026, 0.0065)\*\*\* | 0.0047 (0.002, 0.0073)\*\*\* |

\*p ≤ 0.05; \*\*p ≤ 0.01; \*\*\*p ≤ 0.001

# Coefficients are relative to the reference group 20-29, for the variable Age, and Central and Eastern Europe, for the variable Region.

The R2 of the regression for women was 0.83 for underweight, 0.96 for obesity and 0.91 for severe obesity.