Supplementary table 1. Model selection of optimal number of trajectory groups and shapes among women. Bayesian information criterion (BIC) and the group sizes shown, optimal model underlined.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Number of groups | Trajectory shapesa | BICb (*n* = 2,1740) | BICc (*n* = 4,348) | Group 1 (%) | Group 2 (%) | Group 3 (%) | Group 4 (%) |
| 2 | 0 0 | -61,139 | -61,135 | 75.3 | 24.7 |  |  |
| 2 | 0 1 | -58,984 | -58,980 | 65.8 | 34.2 |  |  |
| 2 | 0 2 | -58,167 | -58,162 | 63.9 | 36.1 |  |  |
| 2 | 1 1 | -58,075 | -58,070 | 72.5 | 27.5 |  |  |
| 2 | 1 2 | -57,255 | -57,250 | 70.0 | 30.0 |  |  |
| 2 | 2 2 | -56,983 | -56,977 | 71.8 | 28.2 |  |  |
| 2 | 2 3 | -56,833 | -56,826 | 71.3 | 28.7 |  |  |
| 2 | 3 3 | -56,774 | -56,766 | 71.7 | 28.3 |  |  |
| 2 | 3 4 | -56,751 | -56,742 | 71.6 | 28.4 |  |  |
| 2 | 4 4 | -56,746 | -56,736 | 71.7 | 28.3 |  |  |
| 3 | 0 0 0 | -59,955 | -59,951 | 56.8 | 36.2 | 7.0 |  |
| 3 | 0 0 1 | -58,214 | -58,204 | 39.7 | 40.4 | 19.8 |  |
| 3 | 0 1 1 | -56,263 | -56,256 | 41.7 | 46.6 | 11.6 |  |
| 3 | 0 1 2 | -55,456 | -55,449 | 38.5 | 46.9 | 14.6 |  |
| 3 | 0 2 2 | -54,758 | -54,750 | 39.9 | 47.6 | 12.5 |  |
| 3 | 1 1 1 | -55,794 | -55,787 | 52.1 | 38.8 | 9.1 |  |
| 3 | 1 1 2 | -55,043 | -55,035 | 47.6 | 40.0 | 12.3 |  |
| 3 | 1 2 2 | -54,287 | -54,278 | 48.4 | 41.1 | 10.5 |  |
| 3 | 2 2 2 | -54,135 | -54,125 | 50.9 | 39.2 | 9.9 |  |
| 3 | 2 2 3 | -54,018 | -54,007 | 50.0 | 39.5 | 10.5 |  |
| 3 | 2 3 3 | -53,850 | -53,839 | 50.1 | 39.8 | 10.2 |  |
| 3 | 3 3 3 | -53,814 | -53,802 | 50.7 | 39.3 | 10.0 |  |
| 3 | 3 3 4 | -53,797 | -53,785 | 50.5 | 39.4 | 10.1 |  |
| 3 | 3 4 4 | -53,773 | -53,759 | 50.5 | 39.4 | 10.1 |  |
| 3 | 4 4 4 | -53,772 | -53,757 | 50.6 | 39.3 | 10.0 |  |
| 4 | 0 0 0 0 | -59,540 | -59,534 | 46.4 | 39.5 | 12.7 | 1.5 |
| 4 | 0 0 0 1 | -58,109 | -58,102 | 23.8 | 36.4 | 23.4 | 16.4 |
| 4 | 0 0 1 1 | -56,074 | -56,065 | 18.5 | 34.3 | 38.0 | 9.1 |
| 4 | 0 1 1 1 | -54,944 | -54,935 | 27.7 | 44.6 | 22.5 | 5.3 |
| 4 | 1 1 1 1 | -54,724 | -54,714 | 36.2 | 40.9 | 18.3 | 4.5 |
| 4 | 1 1 1 2 | -54,111 | -54,100 | 33.3 | 40.3 | 20.4 | 6.0 |
| 4 | 1 1 2 2 | -53,246 | -53,234 | 30.2 | 39.1 | 25.1 | 5.7 |
| 4 | 1 2 2 2 | -52,730 | -52,718 | 33.6 | 41.6 | 20.0 | 4.8 |
| 4 | 2 2 2 2 | -52,650 | -52,637 | 35.7 | 40.7 | 19.0 | 4.7 |
| 4 | 2 2 2 3 | -52,566 | -52,553 | 35.6 | 40.7 | 19.0 | 4.7 |
| 4 | 2 2 2 4 | -52,553 | -52,539 | 35.6 | 40.7 | 19.0 | 4.7 |
| 4 | 2 2 3 3 | -52,384 | -52,369 | 34.2 | 40.3 | 20.6 | 4.9 |
| 4 | 2 2 4 4 | -52,340 | -52,324 | 34.1 | 40.2 | 20.8 | 4.9 |
| 4 | 2 3 3 3 | -52,259 | -52,244 | 35.0 | 40.8 | 19.4 | 4.7 |
| 4 | 2 3 3 4 | -52,244 | -52,228 | 34.9 | 40.8 | 19.5 | 4.8 |
| 4 | 2 3 4 4 | -52,216 | -52,199 | 34.8 | 40.8 | 19.6 | 4.7 |
| 4 | 2 4 4 4 | -52,203 | -52,185 | 35.0 | 40.9 | 19.5 | 4.7 |
| 4 | 3 3 3 3 | -52,241 | -52,225 | 35.5 | 40.6 | 19.2 | 4.7 |
| 4 | 3 3 3 4 | -52,226 | -52,209 | 35.4 | 40.6 | 19.3 | 4.7 |
| 4 | 3 3 4 4 | -52,198 | -52,180 | 35.3 | 40.6 | 19.4 | 4.7 |
| 4 | 3 4 4 4 | -52,184 | -52,166 | 35.4 | 40.6 | 19.3 | 4.7 |
| 4 | 4 4 4 4 | -52,185 | -52,166 | 35.5 | 40.6 | 19.2 | 4.7 |
| a Trajectory shapes: 0 = intercept, 1 = linear, 2 = quadratic, 3 = cubic, 4 = quartic.b Bayesian information criterion (BIC) in longitudinal level.c Bayesian information criterion (BIC) in subject level. |

Supplementary table 2. Model selection of optimal number of trajectory groups and shapes among men. Bayesian information criterion (BIC) and the group sizes shown, optimal model underlined.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Number of groups | Trajectory shapes | BICb (*n* = 4,590) | BICc (*n* = 918) | Group 1 (%) | Group 2 (%) | Group 3 (%) | Group 4 (%) |
| 2 | 0 0 | -12,125 | -12,122 | 75.9 | 24.1 |  |  |
| 2 | 0 1 | -11,795 | -11,791 | 70.9 | 29.1 |  |  |
| 2 | 0 2 | -11,644 | -11,639 | 69.4 | 30.6 |  |  |
| 2 | 1 1 | -11,694 | -11,689 | 73.9 | 26.1 |  |  |
| 2 | 1 2 | -11,542 | -11,537 | 72.3 | 27.7 |  |  |
| 2 | 2 2 | -11,494 | -11,487 | 73.6 | 26.4 |  |  |
| 2 | 2 3 | -11,463 | -11,456 | 73.1 | 26.9 |  |  |
| 2 | 3 3 | -11,450 | -11,442 | 73.5 | 26.5 |  |  |
| 2 | 3 4 | -11,451 | -11,442 | 73.4 | 26.6 |  |  |
| 2 | 4 4 | -11,453 | -11,443 | 73.4 | 26.6 |  |  |
| 3 | 0 0 0 | -11,812 | -11,808 | 60.8 | 33.5 | 5.7 |  |
| 3 | 0 0 1 | -11,582 | -11,576 | 44.9 | 39.4 | 15.7 |  |
| 3 | 0 1 1 | -11,286 | -11,279 | 55.0 | 38.2 | 6.9 |  |
| 3 | 0 1 2 | -11,155 | -11,147 | 51.1 | 39.2 | 9.6 |  |
| 3 | 0 2 2 | -11,020 | -11,012 | 50.7 | 40.3 | 9.0 |  |
| 3 | 1 1 1 | -11,217 | -11,210 | 59.8 | 34.6 | 5.6 |  |
| 3 | 1 1 2 | -11,096 | -11,088 | 55.5 | 35.5 | 9.0 |  |
| 3 | 1 2 2 | -10,958 | -10,949 | 57.5 | 36.2 | 6.3 |  |
| 3 | 2 2 2 | -10,919 | -10,910 | 59.2 | 34.9 | 5.9 |  |
| 3 | 2 2 3 | -10,896 | -10,886 | 57.1 | 35.3 | 7.6 |  |
| 3 | 2 3 3 | -10,862 | -10,851 | 58.5 | 35.4 | 6.1 |  |
| 3 | 3 3 3 | -10,851 | -10,839 | 59.0 | 35.0 | 6.0 |  |
| 3 | 3 3 4 | -10,852 | -10,839 | 58.9 | 35.0 | 6.0 |  |
| 3 | 3 4 4 | -10,853 | -10,839 | 58.9 | 35.1 | 6.0 |  |
| 3 | 4 4 4 | -10,855 | -10,840 | 59.0 | 35.0 | 6.0 |  |
| 4 | 0 0 0 0 | -11,695 | -11,689 | 24.0 | 49.7 | 22.1 | 4.2 |
| 4 | 0 0 0 1 | -11,485 | -11,478 | 19.8 | 48.3 | 23.8 | 8.1 |
| 4 | 0 0 1 1 | -11,126 | -11,118 | 19.9 | 47.1 | 28.7 | 4.4 |
| 4 | 0 1 1 1 | -10,974 | -10,965 | 23.8 | 48.5 | 23.5 | 4.2 |
| 4 | 1 1 1 1 | -10,967 | -10,957 | 25.8 | 47.1 | 23.0 | 4.1 |
| 4 | 1 1 1 2 | -10,859 | -10,849 | 24.3 | 46.9 | 23.6 | 5.2 |
| 4 | 1 1 2 2 | -10,678 | -10,667 | 23.4 | 46.3 | 25.8 | 4.7 |
| 4 | 1 2 2 2 | -10,592 | -10,580 | 23.9 | 48.1 | 23.8 | 4.3 |
| 4 | 2 2 2 2 | -10,588 | -10,575 | 25.6 | 46.9 | 23.2 | 4.2 |
| 4 | 2 2 2 3 | -10,561 | -10,547 | 25.8 | 46.9 | 23.2 | 4.1 |
| 4 | 2 2 2 4 | -10,560 | -10,546 | 25.7 | 46.9 | 23.2 | 4.2 |
| 4 | 2 2 3 3 | -10,524 | -10,509 | 25.0 | 46.8 | 24.1 | 4.2 |
| 4 | 2 2 4 4 | -10,524 | -10,508 | 24.9 | 46.8 | 24.2 | 4.2 |
| 4 | 2 3 3 3 | -10,493 | -10,478 | 25.3 | 47.2 | 23.4 | 4.1 |
| 4 | 2 3 3 4 | -10,493 | -10,477 | 25.3 | 47.2 | 23.4 | 4.1 |
| 4 | 2 3 4 3 | -10,495 | -10,478 | 25.2 | 47.1 | 23.5 | 4.1 |
| 4 | 2 4 3 3 | -10,493 | -10,477 | 25.4 | 47.2 | 23.3 | 4.1 |
| 4 | 2 4 3 4 | -10,492 | -10,475 | 25.4 | 47.2 | 23.3 | 4.1 |
| 4 | 2 3 4 4 | -10,494 | -10,477 | 25.2 | 47.1 | 23.5 | 4.1 |
| 4 | 2 4 4 4 | -10,494 | -10,476 | 25.3 | 47.2 | 23.4 | 4.1 |
| 4 | 3 3 3 3 | -10,495 | -10,479 | 25.8 | 46.9 | 23.2 | 4.1 |
| 4 | 3 3 3 4 | -10,495 | -10,478 | 25.8 | 46.9 | 23.2 | 4.1 |
| 4 | 3 3 4 4 | -10,496 | -10,478 | 25.7 | 46.9 | 23.4 | 4.1 |
| 4 | 3 4 4 4 | -10,495 | -10,477 | 25.7 | 46.9 | 23.3 | 4.1 |
| 4 | 4 4 4 4 | -10,499 | -10,480 | 25.7 | 46.9 | 23.3 | 4.1 |
| a Trajectory shapes: 0 = intercept, 1 = linear, 2 = quadratic, 3 = cubic, 4 = quartic.b Bayesian information criterion (BIC) in longitudinal level.c Bayesian information criterion (BIC) in subject level. |

Supplementary table 3. Characteristics of female study population by childhood disadvantage in body mass index (BMI) trajectory groups.

|  |  |
| --- | --- |
| WOMEN (*n* = 4,348) | BMI trajectories (*n*) |
| Childhood disadvantagea | Trajectory 1 | Trajectory 2 | Trajectory 3 | Trajectory 4 |
| Parental education |  |  |  |  |
| Low | 1,112 | 1,420 | 674 | 181 |
| High | 407 | 343 | 152 | 22 |
| Own serious illness |
| Yes | 84 | 111 | 63 | 20 |
| No | 1,307 | 1,492 | 691 | 165 |
| Parental divorce |
| Yes | 153 | 145 | 84 | 21 |
| No | 1,250 | 1,455 | 665 | 164 |
| Parental death |
| Yes | 172 | 252 | 92 | 23 |
| No | 1,233 | 1,368 | 668 | 165 |
| Parental mental disorder |
| Yes | 82 | 95 | 49 | 9 |
| No | 1,304 | 1,492 | 700 | 171 |
| Parental alcohol problems |
| Yes | 256 | 326 | 168 | 40 |
| No | 1,149 | 1,307 | 600 | 147 |
| Economic difficulties at home |  |  |  |
| Yes | 235 | 326 | 170 | 47 |
| No | 1,171 | 1,307 | 597 | 141 |
| Peer bullying |
| Yes | 82 | 122 | 80 | 20 |
| No | 1,307 | 1,490 | 673 | 162 |
| Multiple childhood adversities |  |  |  |  |
| Several (3-7) | 102 | 123 | 69 | 19 |
| Few (1-2) | 570 | 722 | 347 | 90 |
| None | 830 | 898 | 411 | 93 |
| a Includes parental education and experienced childhood adversities before the participant’s age of 16.  |

Supplementary table 4. Characteristics of male study population by childhood disadvantage in body mass index (BMI) trajectory groups.

|  |  |
| --- | --- |
| MEN (*n* = 918) | BMI trajectories (*n*) |
| Childhood disadvantagea | Trajectory 1 | Trajectory 2 | Trajectory 3 | Trajectory 4 |
| Parental education |  |  |  |  |
| Low | 149 | 317 | 162 | 30 |
| High | 79 | 122 | 48 | 8 |
| Own serious illness |
| Yes | 18 | 29 | 17 | 4 |
| No | 195 | 378 | 175 | 31 |
| Parental divorce |
| Yes | 33 | 46 | 25 | 4 |
| No | 183 | 359 | 168 | 31 |
| Parental death |
| Yes | 35 | 51 | 29 | 7 |
| No | 185 | 352 | 161 | 29 |
| Parental mental disorder |
| Yes | 12 | 18 | 9 | 1 |
| No | 200 | 381 | 180 | 33 |
| Parental alcohol problems |
| Yes | 48 | 78 | 38 | 13 |
| No | 168 | 329 | 154 | 23 |
| Economic difficulties at home |  |  |  |
| Yes | 41 | 79 | 29 | 9 |
| No | 176 | 333 | 162 | 27 |
| Peer bullying |
| Yes | 20 | 29 | 25 | 4 |
| No | 192 | 373 | 163 | 31 |
| Multiple childhood adversities |  |  |  |  |
| Several (3-7) | 23 | 35 | 13 | 3 |
| Few (1-2) | 93 | 161 | 93 | 20 |
| None | 110 | 235 | 104 | 14 |
| a Includes parental education and experienced childhood adversities before the participant’s age of 16.  |

Supplementary table 5. Results from multinomial logistic regression on body mass index trajectory group membership by childhood disadvantage. Each disadvantage variable investigated separately from each other, adjusted for participant’s age. Trajectory group 1 as a reference group for each variable (OR 1.00).

|  |  |  |
| --- | --- | --- |
|  | WOMEN (*n* = 4,384), OR (95% CI) | MEN (*n* = 918), OR (95% CI) |
| Childhood disadvantagea (ref. no) | Trajectory 2 | Trajectory 3 | Trajectory 4 | Trajectory 2 | Trajectory 3 | Trajectory 4 |
| Low parental education (ref. high) | 1.49 (1.26–1.75) | 1.60 (1.30–1.97) | 2.98 (1.89–4.71) | 1.38 (0.98–1.95) | 1.80 (1.18–2.75) | 1.94(0.85–4.44) |
| Own serious illness | 1.15 (0.85–1.54) | 1.41 (1.00–1.98) | 1.87 (1.12–3.13) | 0.83 (0.45–1.53) | 1.04 (0.52–2.09) | 1.34 (0.43–4.25) |
| Parental divorce | 0.84 (0.66–1.07) | 1.07 (0.80–1.42) | 1.08 (0.66–1.75) | 0.71(0.44–1.15) | 0.83 (0.47–1.45) | 0.75 (0.25–2.26) |
| Parental death | 1.25 (1.01–1.55) | 0.94 (0.72–1.24) | 0.95 (0.60–1.52) | 0.77 (0.48–1.23) | 0.95 (0.56–1.64) | 1.20 (0.48–2.98) |
| Parental mental disorder | 1.04 (0.76–1.41) | 1.14 (0.79–1.64) | 0.85 (0.42–1.73) | 0.79 (0.37–1.68) | 0.84 (0.35–2.05) | 0.53 (0.07–4.25) |
| Parental alcohol problems | 1.17 (0.98–1.41) | 1.31 (1.05–1.63) | 1.27 (0.87–1.86) | 0.83 (0.55–1.25) | 0.87 (0.54–1.40) | 2.03 (0.95–4.31) |
| Economic difficulties at home | 1.21 (1.01–1.46) | 1.39(1.11–1.73) | 1.63 (1.14–2.34) | 1.02 (0.67–1.55) | 0.77 (0.46–1.29) | 1.41 (0.62–3.22) |
| Peer bullying | 1.35 (1.01–1.80) | 1.96 (1.42–2.70) | 2.02 (1.21–3.39) | 0.75 (0.41–1.36) | 1.48 (0.79–2.77) | 1.30(0.41–4.07) |
| a Includes parental education and experienced childhood adversities before the participant’s age of 16.  |