**Appendix: Different definitions of MM and social determinants**

**Table A1.** Basic multimorbidity, complex multimorbidity, MM3+ and material determinants

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|   | Basic MM |   |  Complex MM |   |  MM3+ |   |
|  | Odds ratio | 95% CI |  Odds ratio | 95% CI |  Odds ratio | 95% CI |
| Household wealth |  |  |  |  |  |  |
| High | 1 |  | 1 |  | 1 |  |
| Medium | 1.13 | 1.10-1.19 | 1.20 | 1.09-1.31 | 1.18 | 1.1-1.28 |
| Low | 1.47 | 1.34-1.61 | 1.73 | 1.52-1.96 | 1.66 | 1.49-1.86 |
|  |  |  |  |  |  |  |
| Subjective social status |  |  |  |  |  |  |
| High | 1 |  | 1 |  | 1 |  |
| Medium | 1.04 | 0.98-1.10 | 1.11 | 1.00-1.20 | 1.06 | 0.98-1.14 |
| Low | 1.14 | 1.04-1.24 | 1.21 | 1.07-1.35 | 1.16 | 1.04-1.28 |
|  |  |  |  |  |  |  |
| Occupation |  |  |  |  |  |  |
| Manager/prof. | 1 |  | 1 |  | 1 |  |
| Intermediate | 0.93 | 0.85-1.01 | 0.92 | 0.81-1.03 | 0.93 | 0.84-1.04 |
| Semi/routine | 1.07 | 1.04-1.24 | 1.03 | 0.92-1.15 | 1.05 | 0.95-1.16 |
|  |  |  |  |  |  |  |
| Education |  |  |  |  |  |  |
| A-level+ | 1 |  | 1 |  | 1 |  |
| 0-Level or equiv. | 0.93 | 0.86-1.00 | 0.92 | 0.81-1.03 | 0.94 | 0.86-1.05 |
| Less than 0-Level | 1.02 | 0.97-1.07 | 1.04 | 0.92-1.16 |  1.01 | 0.95-1.09 |

**Table A2**. Basic multimorbidity, complex multimorbidity, MM3+ and psycho-social determinants

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|   | Basic MM |   |  Complex MM |   |  MM3+ |   |
|  | Odds ratio | 95% CI |  Odds ratio | 95% CI |  Odds ratio | 95% CI |
| Participation |  |  |  |  |  |  |
| Very active | 1 |  | 1 |  | 1 |  |
| Active | 0.97 | 0.92-1.03 | 1.03 | 0.95-1.12 | 1.03 | 0.96-1.11 |
| Not active | 1.04 | 0.96-1.12 | 1.01 | 0.91-1.12 | 1.04 | 0.99-1.24 |
|  |  |  |  |  |  |  |
| Sense of control |  |  |  |  |  |
| High | 1 |  | 1 |  | 1 |  |
| Some | 1.21 | 1.16-1.27 | 1.28 | 1.20-1.37 | 1.28 | 1.21-1.35 |
| Low | 1.57 | 1.41-1.74 | 1.70 | 1.51-1.91 | 1.62 | 1.44-1.92 |
|  |  |  |  |  |  |  |
| Supportive children |  |  |  |  |  |
| Very/some | 1 |  | 1 |  | 1 |  |
| A little/not at all | 1.02 | 0.94-1.11 | 1.02 | 0.90-1.15 | 1.05 | 0.95-1.16 |
| No children | 0.96 | 0.86-1.07 | 0.98 | 0.86-1.11 | 0.98 | 0.87-1.09 |
|  |  |  |  |  |  |  |
| Supportive friends |  |  |  |  |  |
| Very/some | 1 |  | 1 |  | 1 |  |
| A little/not at all | 0.99 | 0.94-1.06 | 0.96 | 0.89-1.04 | 0.99 | 0.93-1.06 |
| No friends | 1.14 | 1.02-1.26 | 1.07 | 0.95-1.2 | 1.06 | 0.95-1.18 |
|  |  |  |  |  |  |  |
| Supportive partner |  |  |  |  |  |
| Very/some | 1 |  | 1 |  | 1 |  |
| A little/not at all | 0.93 | 0.81-1.07 | 0.98 | 0.81-1.18 | 0.91 | 0.78-1.07 |
| No partner | 1.15 | 1.06-1.26 | 1.03 | 0.94-1.14 | 1.11 | 1.02-1.21 |
|  |  |  |  |  |  |  |
| Loneliness |  |  |  |  |  |  |
| Yes | 1.19 | 1.11-1.28 | 1.22 | 1.12-1.33 | 1.20 | 1.14-1.33 |

**Table A3**. Basic multimorbidity, complex multimorbidity, MM3+ and behavioural determinants

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|   | Basic MM |   |  Complex MM |   |  MM3+ |   |
|  | Odds ratio | 95% CI |  Odds ratio | 95% CI |  Odds ratio | 95% CI |
| Physical activity |  |  |  |  |  |
| Vigorous | 1 |  | 1 |  | 1 |  |
| Moderate | 1.22 | 1.16-1.28 | 1.32 | 1.22-1.42 | 1.29 | 1.21-1.37 |
| Mild | 1.57 | 1.46-1.68 | 1.92 | 1.75-2.12 | 1.79 | 1.65-1.94 |
| None | 1.60 | 1.45-1.76 | 2.01 | 1.78-2.27 | 1.78 | 1.60-1.99 |
|  |  |  |  |  |  |  |
| Alcohol consumption |  |  |  |  |  |
| Don't drink | 1 |  | 1 |  | 1 |  |
| Monthly or less | 0.90 | 0.83-0.99 | 0.79 | 0.71-0.87 | 0.80 | 0.73-0.87 |
| Weekly | 0.82 | 0.75-0.91 | 0.68 | 0.61-0.77 | 0.73 | 0.65-0.81 |
| Daily | 0.81 | 0.73-0.88 | 0.65 | 0.58-0.74 | 0.69 | 0.62-0.77 |
|  |  |  |  |  |  |  |
| Smoking |  |  |  |  |  |  |
| Never | 1 |  | 1 |  | 1 |  |
| Ex-smoker | 1.27 | 1.17-1.37 | 1.29 | 1.17-1.42 | 1.31 | 1.20-1.44 |
| Current | 1.03 | 0.91-1.14 | 1.04 | 0.90-1.21 | 1.11 | 0.97-1.26 |

**Table A4.** Correspondence between CMM and MFL10 if MM=1

|  |  |  |  |
| --- | --- | --- | --- |
|  |  MFL10+ |  |  |
| CMM | 0 | 1 | Total |
| 0 | 14,276 | 2,246 | 16,522 |
| 1 | 6,638 | 3,018 | 9,656 |
| Total | 20,914 | 5,264 | 26,178 |

Chi-square(1) = 1.200, p = .000

**Table A5.** Correspondence between CMM and MFL10 if MM=0

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |  |  |
| --- | --- | --- | --- |
|  | MFL10+ |  |  |
| CMM | 0 | 1 | Total |
| 0 | 28,965 | 1,051 | 30,016 |
| 1 | 2 | 3 | 5 |
| Total | 28,967 | 1,054 | 30,021 |

 |  |  |  |
|  |  |  |  |
| Chi-square(1) = 47.106, p = .000

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