# Prevalence of common mental disorders and treatment receipt for people from ethnic minority backgrounds in England: repeated cross-sectional surveys of the general population, 2007 and 2014

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**SUPPLEMENTARY MATERIAL**

* Supplementary table 1: Sociodemographic overview of APMS 2007,
* Supplementary table 2: Sociodemographic overview of APMS 2014
* Supplementary table 3: Logistic regression results, prevalence of common mental disorder (CMD) CISR>12, APMS 2007-2014
* Supplementary table 4: Logistic regression model results, any treatment receipt for common mental disorder (CMD), APMS 2007-2014

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| **Supplementary table 1: Sociodemographic overview of APMS 2007, complete case sample, n=7187 (weighted proportions %), with Pearson’s Chi-squared test adjusted design-based F, P value** |
| **Ethnicity** | **White British** | **White Other** | **Black** | **Asian** | **Mixed / Multiple /Other** | **Whole sample** |
| 6351 (85.1) | 302 (5.1) | 181 (3) | 195 (3.8) | 158 (2.9) | 7187 (100) |
| **Sex** |  |  |  |  |  |  |
| Male | 2707 (48.2) | 123 (44.3) | 76 (47.7) | 107 (59.6) | 71 (51.6) | 3084 (48.5) |
| Female | 3644 (51.8) | 179 (55.7) | 105 (52.3) | 88 (40.5) | 87 (48.4) | 4103 (51.5) |
|  |  |  |  |  | 1.10, P=0.3250 |
| **Age** |  |  |  |  |  |  |
| 16-24 | 450 (13.2) | 22 (13.8) | 23 (22.2) | 27 (20.2) | 27 (22.3) | 549 (14.1) |
| 25-34 | 800 (14.8) | 77 (31.8) | 34 (19.1) | 62 (32.6) | 38 (27.7) | 1011 (16.8) |
| 35-44 | 1191 (17.5) | 51 (14.5) | 55 (26.6) | 52 (21.8) | 40 (21) | 1389 (17.9) |
| 45-54 | 973 (17.2) | 45 (14.1) | 32 (18.3) | 23 (12.5) | 25 (14.2) | 1098 (16.8) |
| 55-64 | 1139 (15.2) | 49 (12.5) | 14 (5.5) | 15 (6.1) | 19 (11.3) | 1236 (14.3) |
| 65-74 | 919 (11.7) | 37 (8.8) | 19 (7.2) | 13 (5.5) | 7 (3.1) | 995 (10.9) |
| 75+ | 879 (10.4) | 21 (4.5) | 4 (1.1) | 3 (1.3) | 2 (0.5) | 909 (9.2) |
|  |  |  |  |  | 8.4, P<0.0001 |
| **Marital status** |  |  |  |  |  |  |
| Single | 1140 (20.8) | 70 (27.8) | 81 (45.8) | 48 (31.3) | 50 (32.4) | 1389 (22.7) |
| Married / co-habiting | 3596 (64) | 164 (59) | 57 (37.4) | 120 (61.4) | 86 (60.4) | 4023 (62.7) |
| Divorced / separated | 1615 (15.2) | 68 (13.3) | 43 (16.7) | 27 (7.3) | 22 (7.2) | 1775 (14.6) |
|  |  |  |  |  | 10.06, P<0.0001 |
| **Home tenure** |  |  |  |  |  |  |
| Owner occupier | 4622 (73.8) | 170 (50.1) | 76 (42.8) | 122 (59.8) | 83 (47.3) | 5073 (70.3) |
| Private renter | 595 (10.6) | 84 (36.5) | 26 (18.4) | 44 (23.4) | 44 (32) | 793 (13.3) |
| Social renter | 1134 (15.7) | 48 (13.4) | 79 (38.8) | 29 (16.7) | 31 (20.7) | 1321 (16.4) |
|  |  |  |  |  | 27.2, P<0.0001 |
| **Education** |  |  |  |  |  |  |
| Degree | 1112 (18.3) | 105 (38.1) | 30 (20.6) | 73 (37.1) | 37 (22) | 1357 (20.3) |
| Teaching, nursing, HND | 469 (7.2) | 19 (5.5) | 23 (12.1) | 9 (4.5) | 18 (10) | 538 (7.3) |
| A Level | 839 (15.5) | 22 (7.9) | 31 (17.4) | 26 (13.6) | 20 (13.7) | 938 (15.1) |
| GCSE / equivalent | 1654 (28.4) | 44 (15.5) | 39 (22.2) | 29 (18.2) | 35 (26.1) | 1801 (27.1) |
| Foreign / other | 218 (2.8) | 28 (9.4) | 10 (4.5) | 11 (5.1) | 17 (8.7) | 284 (3.5) |
| No qualifications | 2059 (27.6) | 84 (23.6) | 48 (23.2) | 47 (21.4) | 31 (19.5) | 2269 (26.8) |
|  |  |  |  |  | 7.38, P<0.0001 |
| **Social class (NS-SEC)** |  |  |  |  |  |  |
| Managerial/professional | 1555 (26.7) | 97 (34.6) | 47 (24.9) | 57 (29.5) | 41 (27.6) | 1797 (27.2) |
| Intermediate | 416 (6.9) | 16 (4.7) | 8 (4.4) | 6 (4.3) | 12 (7.4) | 458 (6.7) |
| Small employers/own account workers | 344 (5.8) | 17 (4.6) | 11 (6.8) | 13 (6) | 7 (4.3) | 392 (5.7) |
| Lower supervisory/ technical occupations | 305 (5.7) | 17 (6.6) | 9 (4.5) | 14 (8.2) | 10 (4.8) | 355 (5.7) |
| Semi-routine/routine occupations | 970 (17.7) | 43 (16.3) | 46 (30.7) | 40 (21.2) | 38 (25.4) | 1137 (18.3) |
| Never worked / not worked in past year | 2761 (37.2) | 112 (33.2) | 60 (28.7) | 65 (30.8) | 50 (30.4) | 3048 (36.3) |
|  |  |  |  |  | 1.7, P=0.0440 |

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| **Supplementary table 2: Sociodemographic overview of APMS 2014, complete case sample, n=7413 (weighted proportions %), with Pearson’s Chi-squared test adjusted design-based F, P value** |
| **Ethnicity** | **White British** | **White Other** | **Black** | **Asian** | **Mixed / Multiple /Other** | **Whole sample** |
| 6302 (80.9) | 416 (6.5) | 194 (3.1) | 352 (6.9) | 149 (2.6) | 7413 (100) |
| **Sex** |  |  |  |  |  |  |
| Male | 2571 (48.8) | 152 (47.3) | 67 (44.6) | 150 (54.2) | 57 (51) | 2997 (49) |
| Female | 3731 (51.2) | 264 (52.8) | 127 (55.4) | 202 (45.8) | 92 (49) | 4416 (51) |
|  |  |  |  |  | 1.10, P=0.3520 |
| **Age** |  |  |  |  |  |  |
| 16-24 | 416 (12.5) | 41 (15) | 12 (11.7) | 60 (29.1) | 19 (20.7) | 548 (14) |
| 25-34 | 758 (14.7) | 111 (32.2) | 47 (28.1) | 77 (23.3) | 32 (23.9) | 1025 (17.1) |
| 35-44 | 858 (12.7) | 110 (24.5) | 41 (18.5) | 112 (24.5) | 43 (23.8) | 1164 (14.7) |
| 45-54 | 1106 (18.9) | 48 (10.9) | 47 (22.8) | 44 (11.7) | 32 (19.7) | 1277 (18) |
| 55-64 | 1093 (14.8) | 36 (6.9) | 24 (9.4) | 27 (5.4) | 15 (7.9) | 1195 (13.3) |
| 65-74 | 1096 (14.4) | 35 (5.5) | 8 (3.2) | 20 (3.7) | 4 (2) | 1163 (12.4) |
| 75+ | 975 (12.1) | 35 (4.9) | 15 (6.3) | 12 (2.3) | 4 (2) | 1041 (10.5) |
|  |  |  |  |  | 16.46, P<0.0001 |
| **Marital status** |  |  |  |  |  |  |
| Single | 1234 (21.5) | 104 (28.9) | 80 (40.4) | 90 (39) | 46 (33.1) | 1554 (24.1) |
| Married / co-habiting | 3471 (63.2) | 243 (62.2) | 74 (45.2) | 204 (52.5) | 81 (56.8) | 4073 (61.7) |
| Divorced / separated | 1597 (15.3) | 69 (8.8) | 40 (14.5) | 58 (8.5) | 22 (10.2) | 1786 (14.3) |
|  |  |  |  |  | 31.86, P<0.0001 |
| **Home tenure** |  |  |  |  |  |  |
| Owner occupier | 4333 (68.5) | 194 (42.5) | 64 (32.5) | 212 (59.7) | 68 (37.3) | 4871 (64.2) |
| Private renter | 947 (16.6) | 157 (43.6) | 46 (25.9) | 92 (26.5) | 43 (34.7) | 1285 (19.8) |
| Social renter | 1022 (15) | 65 (13.9) | 84 (41.7) | 48 (13.8) | 38 (28) | 1257 (16) |
|  |  |  |  |  | 31.86, P<0.0001 |
| **Education** |  |  |  |  |  |  |
| Degree | 1372 (22.4) | 156 (37.3) | 63 (30.9) | 140 (38.7) | 56 (39.9) | 1787 (25.2) |
| Teaching, nursing, HND | 517 (8) | 31 (7.7) | 24 (11.2) | 15 (3.9) | 17 (8.1) | 604 (7.8) |
| A Level | 1037 (19) | 55 (13.1) | 23 (12.9) | 55 (21.9) | 15 (10.2) | 1185 (18.4) |
| GCSE / equivalent | 1546 (26) | 50 (14.5) | 39 (21.9) | 64 (18.6) | 35 (26.8) | 1734 (24.7) |
| Foreign / other | 199 (2.6) | 39 (9.5) | 7 (3.2) | 20 (4) | 6 (3.7) | 271 (3.2) |
| No qualifications | 1631 (22) | 85 (17.8) | 38 (19.8) | 58 (13) | 20 (11.3) | 1832 (20.8) |
|  |  |  |  |  | 8.0, P<0.0001 |
| **Social class (NS-SEC)** |  |  |  |  |  |  |
| Managerial/professional | 1461 (25.1) | 107 (25.5) | 57 (27.8) | 115 (32.1) | 48 (28.5) | 1788 (25.8) |
| Intermediate | 571 (9.3) | 45 (10.1) | 25 (11.4) | 17 (4.8) | 16 (9.6) | 674 (9.1) |
| Small employers/own account workers | 353 (6.1) | 32 (8.4) | 8 (4.5) | 16 (5.6) | 11 (7.1) | 420 (6.2) |
| Lower supervisory/ technical occupations | 175 (3.4) | 9 (2.8) | 5 (3.3) | 10 (2.5) | 3 (1.4) | 202 (3.3) |
| Semi-routine/routine occupations | 925 (17.6) | 84 (24.5) | 39 (21.2) | 48 (14.2) | 29 (21.9) | 1125 (18) |
| Never worked / not worked in past year | 2817 (38.5) | 139 (28.7) | 60 (31.7) | 146 (40.9) | 42 (31.5) | 3204 (37.6) |
|  |  |  |  |  | 1.92, P<0.0113 |

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| **Supplementary table 3: Logistic regression results for explanatory factors of age, sex, and survey year, outcome: prevalence of common mental disorder (CMD) CISR>12 APMS 2007-2014 (n=14,600) OR with 95% CI, Adjusted Wald test results (F, P) for association of each factor with outcome** |
| **Factors** | **Unadjusted models** | **Adjusted for ethnicity, age, sex, and survey year (model 2)** | **Adjusted for ethnicity, age, sex, marital status, education, home tenure, social class, and survey year (model 3)** |
| **Sex** |  |  |  |
| Male | 1.00 (ref) | 1.00 (ref) | 1.00 (ref) |
| Female | 1.74 (1.56-1.94) | 1.79 (1.60-2.00) | 1.66 (1.48-1.86) |
|  | F=99.5, P<0.0001 | F=107.4, P<0.0001 | F=74.4, P<0.0001 |
| **Age** |  |  |  |
| 16-24 | 1.00 (ref) |  | 1.00 (ref) |
| 25-34 | 1.05 (0.86-1.28) | 1.05 (0.86-1.28) | 1.44 (1.15-1.80) |
| 35-44 | 1.00 (0.83-1.21) | 1.00 (0.82-1.21) | 1.46 (1.16-1.85) |
| 45-54 | 1.10 (0.92-1.33) | 1.08 (0.90-1.31) | 1.57 (1.24-1.98) |
| 55-64 | 0.88 (0.72-1.07) | 0.86 (0.71-1.05) | 1.06 (0.83-1.34) |
| 65-74 | 0.57 (0.46-0.71) | 0.56 (0.45-0.69) | 0.51 (0.39-0.67) |
| 75+ | 0.46 (0.37-0.58) | 0.43 (0.34-0.54) | 0.32 (0.24-0.43) |
|  | F=21.1, P<0.0001 | F=21.2, P<0.0001 | F=34.7, P<0.0001 |
| **Survey year** |  |  |  |
| 2007 | 1.00 (ref) | 1.00 (ref) | 1.00 (ref) |
| 2014 | 1.07 (0.96-1.19) | 1.09 (0.98-1.22) | 1.10 (0.99-1.23) |
|  | F=1.6, P=0.21 | F=2.8, P=0.10 | F=3.0, P=0.08 |
| **Notes:** Model 2: no evidence of ethnicity\*survey year interaction found: F=1.28, P=0.24Model 3: no evidence of ethnicity\*survey year interaction found: F=1.02, P=0.42 |
| *Table continued overleaf* |

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| **Supplementary table 3 continued: Logistic regression results for explanatory factors marital status, home tenure, education, and social class, outcome: prevalence of common mental disorder, (CMD) CISR>12APMS 2007-2014 (n=14,600) OR with 95% CI, Adjusted Wald test results (F, P) for association of each factor with outcome** |
| **Factors** | **Unadjusted models** | **Adjusted for ethnicity, age, sex, marital status, education, home tenure, social class, and survey year (model 3)** |
| **Marital status** |  |  |
| Married / co-habiting | 1.00 (ref) | 1.00 (ref) |
| Single | 1.50 (1.33-1.68) | 1.30 (1.12-1.50) |
| Divorced / separated | 1.47 (1.31-1.64) | 1.43 (1.27-1.62) |
|  | F=35.8, P<0.0001 | F=18.7, P<0.0001 |
| **Home tenure** |  |  |
| Owner occupier | 1.00 (ref) | 1.00 (ref) |
| Private renter | 2.58 (2.30-2.90) | 1.95 (1.71-2.22) |
| Social renter | 1.51 (1.32-1.73) | 1.32 (1.13-1.54) |
|  | F=132.3, P<0.0001 | F=50.7, P=0.0001 |
| **Education** |  |  |
| Degree | 1.00 (ref) | 1.00 (ref) |
| Teaching, nursing, HND | 1.11 (0.90-1.37) | 1.12 (0.90-1.40) |
| A Level | 1.28 (1.08-1.53) | 1.20 (0.99-1.45) |
| GCSE / equivalent | 1.53 (1.32-1.78) | 1.33 (1.12-1.57) |
| Foreign / other | 0.92 (0.69-1.23) | 1.08 (0.79-1.47) |
| No qualifications | 1.45 (1.26-1.67) | 1.38 (1.16-1.65) |
|  | F=9.7, P<0.0001 | F=3.4, P=0.005 |
| **NS-SEC (social class)** |  |  |
| Managerial/professional | 1.00 (ref) | 1.00 (ref) |
| Intermediate | 1.33 (1.07-1.65) | 1.03 (0.83-1.29) |
| Small employers/own account workers | 1.04 (0.80-1.33) | 1.06 (0.82-1.38) |
| Lower supervisory/ technical occupations | 0.97 (0.73-1.28) | 0.92 (0.69-1.24) |
| Semi-routine/routine occupations | 1.32 (1.12-1.54) | 1.02 (0.86-1.22) |
| Never worked / not worked in past year | 1.48 (1.31-1.67) | 1.75 (1.49-2.05) |
|  | F=9.9, P<0.0001 | F=14.0, P<0.0001 |

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| **Supplementary table 4: Logistic regression model results for explanatory factors of age, sex, and survey year, outcome: any treatment receipt for CMD****APMS 2007-2014 (n=14,600) OR with 95% CI, Adjusted Wald test results (F, P) for association of each factor with outcome** |
|  | **Unadjusted models** | **Adjusted for ethnicity, age, sex, and ethnicity \* survey year interaction (model 5)** | **Adjusted for ethnicity, age, sex, marital status, education, tenure, social class, CMD prevalence, and ethnicity \* survey year interaction (model 6)** |
| **Sex** |  |  |  |  |  |
| Male | 1.00 (ref) | 1.00 (ref) |  | 1.00 (ref) |  |
| Female | 2.01 (1.80-2.25) | 2.06 (1.84-2.30) |  | 1.64 (1.45-1.87) |  |
|  | F=147.9, P<0.0001 | F=156.8, P<0.0001 |  | F=58.9, P<0.0001 |  |
| **Age** |  |  |  |  |  |
| 16-24 | 1.00 (ref) | 1.00 (ref) |  | 1.00 (ref) |  |
| 25-34 | 1.35 (1.08-1.68) | 1.37 (1.10-1.71) |  | 1.69 (1.29-2.22) |  |
| 35-44 | 1.41 (1.14-1.74) | 1.44 (1.16-1.77) |  | 1.92 (1.47-2.51) |  |
| 45-54 | 1.57 (1.27-1.94) | 1.50 (1.22-1.86) |  | 1.88 (1.43-2.49) |  |
| 55-64 | 1.47 (1.18-1.83) | 1.40 (1.13-1.74) |  | 1.67 (1.25-2.24) |  |
| 65-74 | 0.94 (0.75-1.18) | 0.85 (0.68-1.07) |  | 0.85 (0.62-1.15) |  |
| 75+ | 0.86 (0.68-1.10) | 0.75 (0.58-0.95) |  | 0.67 (0.48-0.94) |  |
|  | F=12.6, P<0.0001 | F=16.3, P<0.0001 |  | F=19.7, P<0.0001 |  |
| **Survey year** |  |  |  |  |  |
| 2007 | 1.00 (ref) | 1.00 (ref) |  | 1.00 (ref) |  |
| 2014 | 1.35 (1.23-1.49) | 1.46 (1.32-1.62) |  | 1.50 (1.34-1.69) |  |
|  | F=37.7, P<0.0001 | F=52.0, P<0.0001 |  | F=46.9, P<0.0001 |  |
| **Notes:** Model 5: ethnicity\*survey year interaction: F=8.9, P<0.0001Model 6: ethnicity\*survey year interaction: F=10.60, P<0.0001 |
| *Table continued overleaf* |

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| **Supplementary table 4 continued: Logistic regression results for explanatory factors of marital status, home tenure, education, social class, and CMD prevalence, outcome: any treatment receipt for CMD****APMS 2007-2014 (n=14,600) OR with 95% CI, Adjusted Wald test results (F, P) for association of each factor with outcome** |
| **Factors** |  | **Unadjusted models** | **Adjusted for age, sex, marital status, education, tenure, social class, CMD prevalence, and ethnicity \* survey year interaction (model 6)** |
| **Marital status** |  |  |  |
| Married / co-habiting |  | 1.00 (ref) | 1.00 (ref) |
| Single |  | 1.19 (1.04-1.36) | 1.15 (0.97-1.37) |
| Divorced / separated |  | 1.78 (1.59-1.99) | 1.59 (1.38-1.84) |
|  |  | F=49.9, P<0.0001 | F=19.5, P<0.0001 |
| **Home tenure** |  |  |  |
| Owner occupier |  | 1.00 (ref) | 1.00 (ref) |
| Private renter |  | 2.14 (1.89-2.42) | 1.36 (1.16-1.60) |
| Social renter |  | 1.34 (1.16-1.54) | 1.20 (1.01-1.43) |
|  |  | F=74.0, P<0.0001 | F=7.6, P=0.0005 |
| **Education** |  |  |  |
| Degree |  | 1.00 (ref) | 1.00 (ref) |
| Teaching, nursing, HND |  | 1.18 (0.94-1.48) | 1.13 (0.88-1.45) |
| A Level |  | 1.14 (0.96-1.35) | 1.04 (0.86-1.26) |
| GCSE / equivalent |  | 1.30 (1.12-1.51) | 1.03 (0.86-1.23) |
| Foreign / other |  | 0.81 (0.60-1.10) | 0.87 (0.61-1.24) |
| No qualifications |  | 1.38 (1.19-1.60) | 1.06 (0.87-1.29) |
|  |  | F=6.0, P<0.0001 | F=0.4, P=0.82 |
| **NS-SEC (social class)** |  |  |  |
| Managerial/professional |  | 1.00 (ref) | 1.00 (ref) |
| Intermediate |  | 1.38 (1.13-1.68) | 1.10 (0.88-1.38) |
| Small employers/own account workers |  | 0.80 (0.60-1.06) | 0.80 (0.59-1.09) |
| Lower supervisory/ technical occupations |  | 0.71 (0.51-0.98) | 0.74 (0.53-1.04) |
| Semi-routine/routine occupations |  | 1.11 (0.95-1.31) | 1.00 (0.82-1.22) |
| Never worked / not worked in past year |  | 1.58 (1.39-1.79) | 1.71 (1.43-2.04) |
|  |  | F=18.1, P<0.0001 | F=14.5, P<0.0001 |
| **Any CMD** |  |  |  |
| Not present |  |  | 1.00 (ref) |
| Present |  |  | 8.07 (7.14-9.12) |
|  |  |  | F=1127.7, P<0.0001 |