**Supplementary Table 1**: Distribution of groups of neuropsychiatric symptoms according to APOE ε4 status, EPIDEMCA, 2011-2012

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Neuropsychiatric symptoms** | **APOE ε4 status** | **p-value** | **Test statistic** | **df** |
| **No ε4** | **Heterozygous ε4** | **Homozygous** **ε4** |
| **Affective symptoms** | 92 (49.5) | 51 (43.6) | 8 (44.4) | 0.59 | 1.04 | 2 |
| **Psychosis symptoms** | 26 (13.9) | 17 (14.6) | 5 (29.4) | 0.25 | 2.92 | 2 |
| **Hyperactivity symptoms** | 41 (21.9) | 30 (25.6) | 4 (22.2) | 0.74 | 0.56 | 2 |
| **Other behavioral symptoms** | 52 (27.9) | 31 (26.5) | 5 (27.8) | 0.97 | 0.07 | 2 |

**Supplementary Table 1**: Percentage of number of neuropsychiatric symptoms according to the presence of APOE ε4 allele, EPIDEMCA, 2011-2012

|  |  |  |
| --- | --- | --- |
| **APOE ε4 status** | **Percentage of number of neuropsychiatric symptoms**  | **p-value** |
| **No symptom** | **One or two symptoms**  | **At least three symptoms**  |
| **No ε4**  | 36.9 | 34.2 | 28.9 | 0.56 |
| **Heterozygous ε4** | 43.6 | 27.3 | 29.1 |
| **Homozygous** **ε4** | 53.0 | 23.5 | 23.5 |

**Supplementary Table 3**: Association betweenaffective symptoms and APOE ε4 genotype, EPIDEMCA, 2011-2012

|  |  |  |
| --- | --- | --- |
|  |  | **At least one affective symptom** |
| **Models**  |  | **OR** | **CI 95%** | **p-value** |
| **APOE ε4 allele in Model 1** (At least one neuropsychiatric symptom and APOE ε4) |  |  |  |  |
|  Heterozygous/None ε4 |  | 0.7 | 0.5-1.2 | 0.31 |
|  Homozygous/None ε4 |  | 0.8 | 0.3-2.2 | 0.68 |
| **APOE ε4 allele in Model 2** (Model 1 + age, sex, education level, marital status) |  |  |  |  |
|  Heterozygous/None ε4 |  | 0.7 | 0.5-1.2 | 0.23 |
|  Homozygous/None ε4 |  | 0.9 | 0.3-2.5 | 0.89 |
| **APOE ε4 allele in Model 3** (Model 2 + cognitive status)  |  |  |  |  |
|  Heterozygous/None ε4 |  | 0.7 | 0.4-1.2 | 0.27 |
|  Homozygous/None ε4 |  | 0.7 | 0.2-2.2 | 0.60 |
| **APOE ε4 allele in Model 4** (Model 3 + smoking status, alcohol consumption, hypertension, diabetes, physical activity) |  |  |  |  |
|  Heterozygous/None ε4 |  | 0.7 | 0.4-1.2 | 0.17 |
|  Homozygous/None ε4 |  | 0.8 | 0.2-2.5 | 0.67 |
| **APOE ε4 allele in Model 5** (Model 4 + number of stressful life events, dependent personality disorder, psychoactive drug abuse)  |  |  |  |  |
|  Heterozygous/None ε4 |  | 0.7 | 0.4-1.2 | 0.22 |
|  Homozygous/None ε4 |  | 0.8 | 0.2-2.9 | 0.72 |

**Supplementary Table 4**: Association betweenhyperactivity symptoms and APOE ε4 genotype, EPIDEMCA, 2011-2012

|  |  |  |
| --- | --- | --- |
|  |  | **At least one hyperactivity symptom** |
| **Models**  |  | **OR** | **CI 95%** | **p-value** |
| **APOE ε4 allele in Model 1** (At least one neuropsychiatric symptom and APOE ε4) |  |  |  |  |
|  Heterozygous/None ε4 |  | 0.9 | 0.5-1.5 | 0.78 |
|  Homozygous/None ε4 |  | 1.0 | 0.3-2.9 | 0.98 |
| **APOE ε4 allele in Model 2** (Model 1 + age, sex, education level, marital status) |  |  |  |  |
|  Heterozygous/None ε4 |  | 0.9 | 0.5-1.5 | 0.63 |
|  Homozygous/None ε4 |  | 1.0 | 0.3-3.2 | 0.90 |
| **APOE ε4 allele in Model 3** (Model 2 + cognitive status)  |  |  |  |  |
|  Heterozygous/None ε4 |  | 0.9 | 0.5-1.5 | 0.68 |
|  Homozygous/None ε4 |  | 0.9 | 0.3-2.7 | 0.80 |
| **APOE ε4 allele in Model 4** (Model 3 + smoking status, alcohol consumption, hypertension, diabetes, physical activity) |  |  |  |  |
|  Heterozygous/None ε4 |  | 0.9 | 0.5-1.6 | 0.79 |
|  Homozygous/None ε4 |  | 1.1 | 0.3-3.8 | 0.86 |
| **APOE ε4 allele in Model 5** (Model 4 + number of stressful life events, dependent personality disorder, psychoactive drug abuse)  |  |  |  |  |
|  Heterozygous/None ε4 |  | 0.9 | 0.5-1.7 | 0.89 |
|  Homozygous/None ε4 |  | 1.0 | 0.3-3.9 | 0.97 |

**Supplementary Table 5**: Association betweenpsychosis symptoms and APOE ε4 genotype, EPIDEMCA, 2011-2012

|  |  |  |
| --- | --- | --- |
|  |  | **At least one psychosis symptom** |
| **Models**  |  | **OR** | **CI 95%** | **p-value** |
| **APOE ε4 allele in Model 1** (At least one neuropsychiatric symptom and APOE ε4) |  |  |  |  |
|  Heterozygous/None ε4 |  | 1.0 | 0.5-2.0 | 0.87 |
|  Homozygous/None ε4 |  | 2.5 | 0.8-7.8 | 0.10 |
| **APOE ε4 allele in Model 2** (Model 1 + age, sex, education level, marital status) |  |  |  |  |
|  Heterozygous/None ε4 |  | 1.0 | 0.5-1.9 | 0.97 |
|  Homozygous/None ε4 |  | 3.3 | 1.0-10.7 | 0.04 |
| **APOE ε4 allele in Model 3** (Model 2 + cognitive status)  |  |  |  |  |
|  Heterozygous/None ε4 |  | 1.1 | 0.5-2.2 | 0.82 |
|  Homozygous/None ε4 |  | 2.6 | 0.8-9.1 | 0.12 |
| **APOE ε4 allele in Model 4** (Model 3 + smoking status, alcohol consumption, hypertension, diabetes, physical activity) |  |  |  |  |
|  Heterozygous/None ε4 |  | 1.0 | 0.5-2.2 | 0.89 |
|  Homozygous/None ε4 |  | 5.3 | 1.2-22.6 | 0.02 |
| **APOE ε4 allele in Model 5** (Model 4 + number of stressful life events, dependent personality disorder, psychoactive drug abuse)  |  |  |  |  |
|  Heterozygous/None ε4 |  | 1.0 | 0.5-2.2 | 0.93 |
|  Homozygous/None ε4 |  | 7.4 | 1.5-35.8 | 0.01 |

**Supplementary Table 6**: Association betweenother behavioral symptoms and APOE ε4 genotype, EPIDEMCA, 2011-2012

|  |  |  |
| --- | --- | --- |
|  |  | **At least one other behavioral symptom** |
| **Models**  |  | **OR** | **CI 95%** | **p-value** |
| **APOE ε4 allele in Model 1** (At least one neuropsychiatric symptom and APOE ε4) |  |  |  |  |
|  Heterozygous/None ε4 |  | 1.2 | 0.7-2.1 | 0.45 |
|  Homozygous/None ε4 |  | 1.0 | 0.3-3.2 | 0.97 |
| **APOE ε4 allele in Model 2** (Model 1 + age, sex, education level, marital status) |  |  |  |  |
|  Heterozygous/None ε4 |  | 1.1 | 0.6-1.9 | 0.67 |
|  Homozygous/None ε4 |  | 1.1 | 0.3-3.7 | 0.87 |
| **APOE ε4 allele in Model 3** (Model 2 + cognitive status)  |  |  |  |  |
|  Heterozygous/None ε4 |  | 1.2 | 0.7-2.0 | 0.59 |
|  Homozygous/None ε4 |  | 1.0 | 0.3-3.4 | 0.99 |
| **APOE ε4 allele in Model 4** (Model 3 + smoking status, alcohol consumption, hypertension, diabetes, physical activity) |  |  |  |  |
|  Heterozygous/None ε4 |  | 1.1 | 0.6-1.9 | 0.81 |
|  Homozygous/None ε4 |  | 1.0 | 0.3-3.7 | 0.93 |
| **APOE ε4 allele in Model 5** (Model 4 + number of stressful life events, dependent personality disorder, psychoactive drug abuse)  |  |  |  |  |
|  Heterozygous/None ε4 |  | 1.2 | 0.6-2.1 | 0.62 |
|  Homozygous/None ε4 |  | 1.2 | 0.3-4.7 | 0.75 |