|  |  |  |  |
| --- | --- | --- | --- |
| Supplemental Table 1. Associations between persistent ADHD and young adult outcomes adjusting for number of childhood ADHD diagnoses (n=247) | | | |
|  |  | Number of childhood ADHD diagnoses | Adjusted for childhood IQ and conduct disorder |
| Depression |  | OR (95% CI) | OR (95% CI) |
| 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | 1.04 (0.53, 2.04) | 1.10 (0.55, 2.22) |
| 3 or 4 childhood ADHD dxs | 1.56 (0.57, 4.24) | 1.28 (0.43, 3.83) |
| Persistent ADHD |  | 2.01~ (0.98, 4.13) |
| Childhood IQβ |  | 1.00 (0.76, 1.30) |
| Childhood conduct disorder |  | 1.14 (0.58, 2.23) |
|  |  |  |  |
| Anxiety | 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | 1.30 (0.48, 3.52) | 1.73 (0.58, 5.10) |
| 3 or 4 childhood ADHD dxs | 1.31 (0.22, 7.68) | 1.00 (0.24, 4.21) |
| Persistent ADHD |  | **5.61 (2.10, 14.94)** |
| Childhood IQ |  | 0.72~ (0.51, 1.03) |
| Childhood conduct disorder |  | 0.47 (0.16, 1.41) |
|  |  |  |  |
| Conduct disorder | 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | 1.41 (0.70, 2.86) | 1.18 (0.57, 2.45) |
| 3 or 4 childhood ADHD dxs | 1.44 (0.45, 4.62) | 0.75 (0.22, 2.56) |
| Persistent ADHD |  | 2.11~ (0.99, 4.48) |
| Childhood IQ |  | 0.85 (0.67, 1.07) |
| Childhood conduct disorder |  | **2.31 (1.21, 4.40)** |
|  |  |  |  |
| Suicide/self-harm | 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | 1.11 (0.48, 2.58) | 1.06 (0.44, 2.54) |
| 3 or 4 childhood ADHD dxs | 1.77 (0.53, 5.88) | 1.07 (0.32, 3.55) |
| Persistent ADHD |  | **2.37 (1.06, 5.30)** |
| Childhood IQ |  | 0.77~ (0.58, 1.03) |
| Childhood conduct disorder |  | 1.48 (0.65, 3.36) |
|  |  |  |  |
| Cannabis dependence | 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | 1.75 (0.59, 5.15) | 1.40 (0.47, 4.19) |
| 3 or 4 childhood ADHD dxs | 2.81 (0.56, 14.05) | 1.26 (0.27, 5.82) |
| Persistent ADHD |  | 2.62~ (1.00, 6.87) |
| Childhood IQ |  | **0.63 (0.42, 0.93)** |
| Childhood conduct disorder |  | **4.29 (1.04, 17.76)** |
|  |  |  |  |
| Alcohol dependence | 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | 1.34 (0.64, 2.82) | 1.27 (0.61, 2.64) |
| 3 or 4 childhood ADHD dxs | 0.48 (0.11, 2.11) | 0.41 (0.08, 2.04) |
| Persistent ADHD |  | 0.79 (0.31, 1.99) |
| Childhood IQ |  | 0.88 (0.68, 1.13) |
| Childhood conduct disorder |  | 1.16 (0.51, 2.64) |
|  |  |  |  |
| Illicit drug use | 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | 1.63 (0.81, 3.31) | 1.53 (0.75, 3.11) |
| 3 or 4 childhood ADHD dxs | 2.15 (0.74, 6.26) | 1.70 (0.58, 4.99) |
| Persistent ADHD |  | 1.56 (0.76, 3.20) |
| Childhood IQ |  | 1.06 (0.84, 1.33) |
| Childhood conduct disorder |  | 1.44 (0.73, 2.90) |
|  |  |  |  |
| Life satisfaction |  | b (95% CI) | b (95% CI) |
| 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | -0.05 (-0.27, 0.18) | -0.01 (-0.23, 0.20) |
| 3 or 4 childhood ADHD dxs | -0.13 (-0.62, 0.36) | 0.06 (-0.43, 0.54) |
| Persistent ADHD |  | -0.23 (-0.52, 0.05) |
| Childhood IQ |  | 0.06~ (-0.01, 0.12) |
| Childhood conduct disorder |  | -0.18 (-0.40, 0.04) |
|  |  |  |  |
| Social isolation | 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | 1.03 (-0.38, 2.44) | 0.67 (-0.70, 2.03) |
| 3 or 4 childhood ADHD dxs | 1.48 (-0.84, 3.80) | 0.35 (-2.24, 2.93) |
| Persistent ADHD |  | 0.53 (-1.21, 2.27) |
| Childhood IQ |  | -0.16 (-0.66, 0.35) |
| Childhood conduct disorder |  | **1.77 (0.55, 2.98)** |
|  |  |  |  |
| Problematic technology use | 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | 1.14 (-0.28, 2.57) | 1.06 (-0.37, 2.48) |
| 3 or 4 childhood ADHD dxs | 0.83 (-0.96, 2.63) | 0.00 (-1.73, 1.73) |
| Persistent ADHD |  | **3.07 (1.36, 4.77)** |
| Childhood IQ |  | 0.18 (-0.32, 0.67) |
| Childhood conduct disorder |  | 0.66 (-0.58, 1.90) |
|  |  |  |  |
| Obesity |  | OR (95% CI) | OR (95% CI) |
| 1 childhood ADHD dx |  |  |
| 2 childhood ADHD dxs | 1.32 (0.58, 3.00) | 1.69 (0.68, 4.17) |
| 3 or 4 childhood ADHD dxs | 0.26 (0.03, 2.05) | 0.33 (0.04, 3.12) |
| Persistent ADHD |  | 1.44 (0.51, 4.02) |
| Childhood IQ |  | 0.86 (0.61, 1.22) |
| Childhood conduct disorder |  | 0.41~ (0.15, 1.11) |
|  |  |  |  |
| Daily cigarette smoking | 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | 1.53 (0.83, 2.93) | 1.35 (0.70, 2.59) |
| 3 or 4 childhood ADHD dxs | **2.95 (1.04, 8.34)** | 2.21 (0.78, 6.26) |
| Persistent ADHD |  | 0.93 (0.47, 1.85) |
| Childhood IQ |  | 0.98 (0.80, 1.20) |
| Childhood conduct disorder |  | 1.74~ (0.93, 3.24) |
|  |  |  |
| Emergency department visit | 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | 1.13 (0.57, 2.26) | 1.12 (0.56, 2.23) |
| 3 or 4 childhood ADHD dxs | 2.09~ (0.89, 4.88) | 1.92 (0.77, 4.77) |
| Persistent ADHD |  | 1.41 (0.70, 2.83) |
| Childhood IQ |  | 1.10 (0.89, 1.35) |
| Childhood conduct disorder |  | 1.13 (0.61, 2.11) |
|  |  |  |  |
| Low educational attainment | 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | 1.24 (0.64, 2.41) | 1.10 (0.53, 2.29) |
| 3 or 4 childhood ADHD dxs | **11.80 (2.47, 56.40)** | **7.55 (1.50, 38.07)** |
| Persistent ADHD |  | 1.40 (0.72, 2.71) |
| Childhood IQ |  | **0.57 (0.43, 0.74)** |
| Childhood conduct disorder |  | 0.96 (0.51, 1.83) |
|  |  |  |  |
| NEET status | 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | 1.26 (0.60, 2.66) | 1.10 (0.51, 2.35) |
| 3 or 4 childhood ADHD dxs | **3.47 (1.22, 9.85)** | 2.29 (0.76, 6.95) |
| Persistent ADHD |  | 1.23 (0.54, 2.80) |
| Childhood IQ |  | 0.78~ (0.61, 1.00) |
| Childhood conduct disorder |  | 1.46 (0.71, 2.99) |
|  |  |  |  |
| Criminal cautions/ conviction | 1 childhood ADHD dx | --- | --- |
| 2 childhood ADHD dxs | 1.03 (0.51, 2.06) | 0.79 (0.37, 1.70) |
| 3 or 4 childhood ADHD dxs | 1.40 (0.39, 5.01) | 0.78 (0.20, 3.03) |
| Persistent ADHD |  | 0.94 (0.45, 1.98) |
| Childhood IQ |  | 0.82 (0.63, 1.07) |
| Childhood conduct disorder |  | **2.48 (1.16, 5.29)** |
|  |  |  |  |

There were 159 participants with one childhood ADHD diagnosis, 63 with two diagnoses and 25 with 3 or 4 diagnoses. dx=diagnoses, CI=confidence interval. Reference group is participants who had ADHD one time in childhood. Statistically significant results are presented in bold. β = scaled to ten IQ points , ~ = marginally significant (p<0.10).

Supplemental Table 2. Late-onset ADHD and young adult outcomes, adjusting for average number of childhood ADHD symptoms

|  |  |  |
| --- | --- | --- |
|  | Late-onset ADHD | |
| ***Young adult outcome*** |  |  |
| ***Mental health*** | OR (95% CI) | p value |
| Depression | 3.19 (2.12, 4.80) | **<0.001** |
| Anxiety | 2.77 (1.62, 4.75) | **<0.001** |
| Conduct disorder | 3.49 (2.21, 5.52) | **<0.001** |
| Suicide/self-harm | 2.15 (1.37, 3.40) | **0.001** |
|  |  |  |
| ***Substance use*** |  |  |
| Cannabis dependence | 3.47 (1.67, 7.21) | **0.001** |
| Illicit drug use | 2.07 (1.31, 3.27) | **0.002** |
| Alcohol dependence | 3.65 (2.36, 5.65) | **<0.001** |
|  |  |  |
| ***Psychosocial*** | b (95% CI) | p value |
| Life satisfaction | -0.46 (-0.61, -0.30) | **<0.001** |
| Social isolation | 1.21 (0.33, 2.09) | **0.007** |
| Problematic technology use | 3.80 (2.87, 4.72) | **<0.001** |
|  |  |  |
| ***Physical health*** | OR (95% CI) | p value |
| Obesity | 1.18 (0.63, 2.20) | 0.600 |
| Daily cigarette smoking | 2.03 (1.31, 3.16) | **0.002** |
| Emergency department visit | 1.63 (1.07, 2.48) | **0.024** |
|  |  |  |
| ***Socioeconomic*** |  |  |
| Low educational attainment | 1.80 (1.12, 2.90) | **0.015** |
| NEET status | 1.67 (0.93, 3.00) | 0.086 |
| Criminal cautions/conviction | 1.51 (0.79, 2.89) | 0.209 |
|  |  |  |

OR=odds ratio, CI=confidence interval, b=unstandardized beta

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Young adult outcomes*** | Never ADHD | Remitted ADHD | | Persistent ADHD | | Late-onset ADHD | | Persist v remit | Persist v late-onset |
|  | n=1288 | n=132 | | n=33 | | n=59 | |
| ***Mental health*** | *N (%)* | *N (%)* | *OR, p value* | *N (%)* | *OR, p value* | *N (%)* | *OR, p value* | *OR, p value* | *OR, p value* |
| Depression | 184 (14.3) | 21 (15.9) | 1.28, 0.359 | 10 (30.3) | 3.12, **0.007** | 16 (27.1) | 2.15, **0.010** | 2.58, **0.049** | 1.33, 0.568 |
| Anxiety | 73 (5.6) | 4 (3.1) | 0.70, 0.503 | 5 (15.2) | 4.43, **0.010** | 7 (11.9) | 2.41, **0.032** | 7.07, **0.018** | 1.94, 0.389 |
| Conduct disorder | 82 (6.4) | 13 (10.0) | 1.02, 0.951 | 10 (32.3) | 5.09, **<0.001** | 13 (22.0) | 3.94, **<0.001** | 4.87, **0.003** | 1.55, 0.430 |
| Suicide/self-harm | 141 (11.0) | 10 (7.6) | 0.77, 0.442 | 7 (21.2) | 2.77, **0.042** | 11 (18.6) | 1.81, 0.087 | 3.27, **0.039** | 2.11, 0.214 |
| ***Psychosocial*** | *Mean (SD)* | *Mean (SD)* | *β, p value* | *Mean (SD)* | *β, p value* | *Mean (SD)* | *β, p value* | *β, p value* | *β, p value* |
| Life satisfaction | 4.00 (0.6) | 3.87 (0.7) | -0.04, 0.092 | 3.57 (0.7) | -0.10, **0.001** | 3.76 (0.7) | -0.07, **0.024** | -0.19, **0.018** | -0.17, 0.078 |
| Social isolation | 2.93 (4.0) | 3.22 (4.3) | -0.00, 0.946 | 4.28 (4.4) | 0.04, 0.175 | 4.42 (5.0) | 0.08, **0.033** | 0.12, 0.149 | 0.04, 0.702 |
| Problematic technology use | 3.93 (3.5) | 4.26 (4.1) | 0.02, 0.447 | 7.58 (5.1) | 0.16, **<0.001** | 7.31 (4.4) | 0.20, **<0.001** | 0.35, **0.001** | 0.14, 0.265 |
| ***Physical health*** | *N (%)* | *N (%)* | *OR, p value* | *N (%)* | *OR, p value* | *N (%)* | *OR, p value* | *OR, p value* | *OR, p value* |
| Obesity | 115 (9.1) | 17 (13.0) | 1.68, 0.092 | 6 (18.2) | 2.63, **0.049** | 7 (12.1) | 1.23, 0.624 | 1.40, 0.556 | 2.05, 0.206 |
| Daily cigarette smoking | 153 (11.9) | 37 (28.0) | 2.56, **<0.001** | 6 (18.2) | 1.69, 0.273 | 10 (17.2) | 1.29, 0.482 | 0.58, 0.280 | 1.22, 0.776 |
| Emergency department visit | 210 (16.3) | 29 (22.0) | 1.39, 0.159 | 7 (21.2) | 1.37, 0.468 | 15 (25.4) | 1.71, 0.077 | 0.92, 0.868 | 0.80, 0.670 |
| ***Socioeconomic*** | *N (%)* | *N (%)* | *OR, p value* | *N (%)* | *OR, p value* | *N (%)* | *OR, p value* | *OR, p value* | *OR, p value* |
| Low educational attainment | 185 (14.4) | 64 (48.9) | 5.33, <**0.001** | 20 (60.6) | 11.1, **<0.001** | 15 (25.4) | 1.68, 0.093 | 2.10, 0.092 | 9.01, **0.001** |
| NEET status | 101 (7.8) | 25 (18.9) | 2.50, **0.001** | 6 (18.2) | 3.08, **0.022** | 11 (18.6) | 2.22, **0.036** | 1.24, 0.686 | 1.27, 0.683 |
| Criminal cautions/convictions | 72 (5.6) | 26 (19.7) | 2.72, **<0.001** | 6 (19.4) | 2.82, **0.027** | 3 (5.2) | 0.78, 0.666 | 1.11, 0.851 | 4.90, 0.087 |

Supplemental Table 3. Mental health and functional outcomes at age 18 years comparing remitted, persistent, and late-onset ADHD groups with those who never had ADHD amongst those with no substance use disorder (marijuana dependence, alcohol dependence or any drug use)