

Supplemental Methods

Clinical Symptoms

The SDQ is an empirically valid epidemiological survey (1) suitable for use in community-recruited populations, and is sufficiently sensitive to detect clinical problems where they are present (2). Parent-youth rated agreement in SDQ symptom severity for the three symptom domains of interest (conduct, emotional and hyperactivity-inattention) while not as strong as Parent-Teacher ratings, tend to be in the moderate range and remain preferable to relying simply on one informant. Goodman et al (3) compared the concordance between Parent-Youth rated symptoms in adolescents (mean age 13 years) and found moderate agreement between both parties for conduct (correlation coefficient 0.36), hyperactivity (0.29) and emotional problems (0.52). A more recent investigation by Muris et al (4) supported this finding, reporting Parent-Youth inter-rater correlation coefficient of 0.31 for conduct, 0.42 for hyperactivity and 0.43 for emotional symptoms. We found Parent-Youth inter-rater agreement in the IMAGEN sample was also in the moderate range; emotional problems ($r=0.37$, $p<0.001$, $n=1288$), conduct symptoms ($r=0.32$, $p<0.001$, $n=1288$) and hyperactivity-inattention symptoms ($r=0.44$, $p<0.001$, $n=1288$). This study required a single symptom count variable for each domain of interest, therefore we compared the ratings of parents and youths for each item within each symptom subscale, and used whichever rating merited the more severe value in terms of symptom impairment. We did not average these scores as both

scores were not always available for every participant. Furthermore, parent- and youth-rated scores are generally moderately correlated (conduct problems: $r = 0.41$; hyperactivity/inattention: $r = 0.41$; emotional symptoms: $r = 0.37$ (1)). These item level scores were summed and a combined symptom count score calculated for use in this study.

TABLE S1. SDQ frequency table by score

| Group Classification | Conduct Disorder (n) | Group Classification | Hyperactivity (n) | Group Classification | Emotional (n) |
|-------------------------|----------------------|-------------------------|-------------------|-------------------------|---------------|
| Normal 0-2 | 744 | Normal 0-5 | 929 | Normal 0-3 | 941 |
| Slightly Elevated 3-4 | 398 | Slightly Elevated 6 | 150 | Slightly Raised 4 | 141 |
| High 5 | 86 | High 7 | 103 | High 5-6 | 116 |
| Very High/Abnormal 6-10 | 60 | Very High/Abnormal 8-10 | 106 | Very high/Abnormal 7-10 | 90 |

Stressful Life Events

A self-report measure (5) was used to index events that had occurred during the lifespan and in the 12 months prior to the assessment using Psytools software (Delosis Ltd, London, UK) via its internet-based platform. Twenty events were classed as stressful based on the reports of IMAGEN participants (N=1239) who had experienced the event and rated it as distressing ('unhappy' or 'very unhappy'). These were; parents divorced, family had money problems, parents argued or fought, parent abused alcohol, brother or sister moved out, death in the family, family accident/illness, serious accident/illness, got or gave a sexually transmitted disease (STD), broke up with a boyfriend/girlfriend, in trouble with the law, stole something valuable, got in trouble at school, ran away from home, changed schools, family moved, face broke out with

pimples, thought about suicide, got poor grades in school, gained a lot of weight. Sixteen events were consistently rated as positive ('happy' or 'very happy') and were classed as positive life events; these are not considered here.

A stressful life event frequency (SLEF) score was calculated based on the number of negative events that had occurred during the 12 months prior to the assessment only to avoid recall inaccuracy. The questionnaire was administered in such a way that events that had occurred in the previous 12 months could only be counted once.

fMRI Measurement and Processing

Structural and functional MRI data were acquired across all IMAGEN sites with 3T MRI scanners (Siemens, Philips, General Electric & Bruker). All sites used the same scanning protocol; high-resolution T1-weighted 3-dimensional structural images were acquired for anatomical localisation and registration with the functional time series. Blood oxygen-level dependent (BOLD) functional images were acquired with a gradient-echo, echo-planar imaging (EPI) sequence. In this task, 160 volumes were acquired per person, containing 40 slices (2.4mm slice thickness, 1mm gap) aligned to the anterior commission/posterior commission line and the echo-time optimised (TE 30ms; TR 2200ms) to reliably image subcortical regions. Data were pre-processed centrally (Neurospin, CEA) using SPM8 (Statistical Parametric Mapping, <http://www.fil.ion.ucl.ac.uk/spm/>).

Functional image data were corrected for movement (realigned to the first volume), slice timing, non-linear warping of each EPI to a custom EPI template and were smoothed with a 5mm full-width half maximum Gaussian filter. Estimated movement parameters were added to each design matrix in the form of 18 additional columns (3 translations, 3 rotations, 3 quadratic and 3 cubic translations, and each 3 translations with a shift of ± 1 TR). Twenty individuals were excluded due to poor realignment. Normalised and smoothed single-subject contrast images were taken forward to second level random effects analysis. Three contrasts were investigated; angry faces vs. control, neutral faces vs. control and angry faces vs. neutral faces (see Figure S1). Our target region of interest (amygdala) was significantly activated in two of the contrasts; angry faces vs. control and neutral faces vs. control, but not in the anger vs. neutral contrast (see Table S2A).

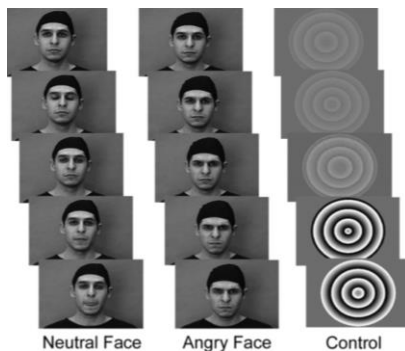


FIGURE S1. Emotional reactivity task showing neutral, angry, and control stimuli.

Using a separate sample of IMAGEN participants (N=326), not included in the experimental sample for reasons such as incomplete phenotypic data, we defined a functional amygdala region of interest (ROI) using a second-level ANOVA to generate a

contrast giving equal weighting to angry and neutral conditions, whilst subtracting the control condition (0.5 0.5 -1.0). There was bilateral activation in the left amygdala: left amygdala maximal voxel MNI coordinates $x = -18$ $y = -7$ $z = -14$, $F_{1975} = 13.71$, $\beta = 0.55$, $P < 0.001$; right amygdala maximal voxel MNI coordinates $x = 21$ $y = -7$ $z = -14$, $k = 2141$, $F_{1975} = 17.99$, $\beta = 0.60$, $P < 0.001$. Using these MNI coordinates we created an amygdala ROI with a 8mm sphere. We confirmed there was significant activation in the ROI in the experimental sample (N=1288) in the angry faces vs. control contrast (Left: $x = -18$ $y = -7$ $z = -14$, $k=80$, $T_{1287}=35.44$, $\beta= 0.609$, $p < .05$ FWE; Right: $x = 21$ $y = -7$ $z = -14$, $k = 81$, $T_{1287}=41.83$, $\beta= 0.570$, $p < .05$ FWE; see Figure S2A) and in the neutral faces vs. control contrast (Left: $x = -18$ $y = -7$ $z = -14$, $k = 80$, $T_{1287} = 35.52$, $\beta = 0.558$, $p < .05$ (FWE); Right: $x = 21$ $y = -7$ $z = -14$, $k = 81$, $T_{1287} = 46.74$, $\beta = 0.591$, $p < .05$ (FWE); see Figure S2B). Summarised beta values were extracted using MarsBaR [(6); <http://marsbar.sourceforge.net/>], and exported for analysis in SPSS.

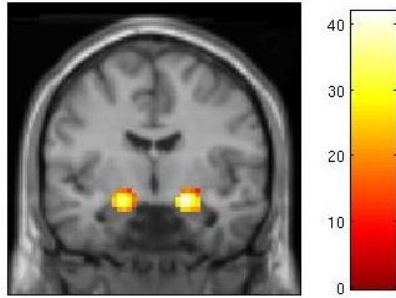


FIGURE S2A. Coronal view of a T1-weighted structural brain image illustrating bilateral amygdala region of interest in the angry faces vs. control contrast.

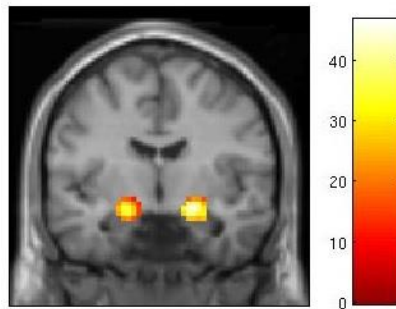


FIGURE S2B. Coronal view of a T1-weighted structural brain image illustrating bilateral amygdala region of interest in the neutral faces vs. control contrast.

TABLE S2A. Brain regions significantly activated in the full sample of adolescents (N=1288) in the Angry Faces vs. Neutral Faces contrast. Whole-brain voxel-wise random effects analysis (Height threshold $T=4.85$, $p_{FWE-corrected}<0.05$, extent threshold, $k=10$ voxels). We report only T-scores for the sub-peaks of each significant cluster.

| Anatomical Region | Left/Right | Coordinates of Peak Activation ^a (MNI) | t-score | β-value | Cluster Size (k) | p-value FWE-corrected |
|---------------------------|------------|---------------------------------------------------|---------|---------|------------------|------------------------|
| Anterior Cingulate Cortex | | 0 47 1 | 16.38 | .36 | 6434 | <.0001 |
| Middle Cingulate Cortex | | 0 -22 34 | 12.74 | | | |
| Insula | Left | -33 17 -14 | 9.76 | .16 | 121 | 7.44x10 ⁻¹⁵ |
| Middle Orbital Gyrus | Left | -30 44 -11 | 5.68 | | | |
| Inferior Frontal Gyrus | Left | -30 29 -14 | 5.42 | | | |
| Inferior Parietal Lobule | Right | 48 -58 49 | 9.04 | .13 | 365 | <.0001 |
| Angular Gyrus | Right | 51 -61 37 | 8.79 | | | |
| Insula | Right | 30 20 -11 | 7.99 | .11 | 38 | 5.99x10 ⁻⁸ |
| Superior Frontal Gyrus | Left | -21 41 34 | 7.87 | .09 | 228 | <.0001 |
| Inferior Temporal Gyrus | Left | -48 8 -35 | 7.74 | .10 | 135 | 7.77x10 ⁻¹⁶ |
| Medial Temporal Pole | Left | -39 23 -35 | 6.11 | | | |
| Middle Temporal Gyrus | Left | -63 -13 -20 | 6.11 | | | |
| Middle Temporal Gyrus | Right | 63 -25 -17 | 7.61 | .09 | 41 | 2.95x10 ⁻⁸ |
| Lingual gyrus | Right | 3 -79 -8 | 6.91 | .14 | 40 | 3.72x10 ⁻⁸ |
| Sub-lobar, Extra-Nuclear | Left | -12 -1 -11 | 6.79 | .11 | 31 | 3.39x10 ⁻⁷ |
| Caudate | Left | -12 11 -11 | 5.47 | | | |
| Postcentral Gyrus | Left | -39 -19 40 | 6.48 | .09 | 11 | 1.30x10 ⁻⁴ |
| Middle Frontal Gyrus | Right | 33 38 46 | 6.48 | .11 | 102 | 1.79x10 ⁻¹³ |
| Superior Frontal Gyrus | Right | 27 44 40 | 5.85 | | | |
| Olfactory cortex | | 0 17 -5 | 6.42 | .12 | 28 | 7.42x10 ⁻⁷ |

FWE, family-wise error; MNI, Montreal Neurological Institute; ^a Coordinates refer to the voxel with the maximum signal intensity

TABLE S2B. Demographic information for the amygdala region of interest test sample

| | Verbal IQ | SES | Handedness | PDS | Parent CP | Youth CP |
|------------------|------------|-------|------------|-------|-----------|----------|
| Missing Data (N) | 67 | 79 | 6 | 16 | 7 | 6 |
| Mean | 105.266409 | 0.83 | - | 3.56 | 1.69 | 2.13 |
| SD | 17.666442 | 1.155 | - | 0.729 | 1.728 | 1.556 |
| Min-Max | 50-152 | 0-6 | - | 0-5 | 0-8 | 0-8 |
| Pass/Fail QC (N) | | | | | 7 | 5 |

PPI analyses

Generalized PPI (gPPI) regression analyses were carried out via the standard procedures of the SPM-based CONN toolbox ((7); <http://www.nitrc.org/projects/conn>) using the same amygdala ROI as our *a priori* seed region. gPPI also includes interaction factors from all conditions simultaneously in the estimation model to better account for between-condition overlaps. Functional data were band-pass filtered ($0.008 < f < 0.1$ Hz) to remove physiological noise. BOLD signal from white matter and CSF (5 dimensions each derived from the T1) were regressed out of the signal. Pre-processing-derived movement parameters and general task-related effects (first derivative) were also removed. Analyses were conducted on the subsequent BOLD signal. Analyses were thresholded at $p < 0.001$ (voxel-level uncorrected) and statistically significant clusters were reported at $p < 0.05$ (family-wise error corrected). To adjust for multiple testing we applied the same Bonferroni correction ($p < .05/12$). We also ran non-parametric statistics ($n=5000$ permutations).

Supplemental Results

Comorbidity

We examined the correlations between the symptoms, considering their comorbidity. Hyperactivity and conduct symptoms had the strongest association ($r = 0.445$, $p = 1.37 \times 10^{-63}$). Weaker correlations existed between emotion and the other two domains: (with hyperactivity, $r = 0.235$, $p = 1.20 \times 10^{-17}$; with conduct symptoms, $r = 0.226$, $p = 2.29 \times 10^{-16}$).

Site Differences

Considering the multisite nature of the study, engendering demographic differences, as well as scanner manufacturer and head coil differences, we explored whether the effect of site affected our main ROI results. We conducted a meta-analysis using the betas and standard errors from the regression models conducted separately for each site. We found that the sites have similar non-zero effect sizes and show overall significance in the models. This is true when examining 1) the interaction of conduct symptoms and stressful life events on right amygdala activation during the angry versus control contrast ($p=0.000573$); 2) the interaction of conduct symptoms and stressful life events on left amygdala activation in the neutral versus control contrast ($p=0.0111$); and 3) the interaction of hyperactivity symptoms and stressful life events on left amygdala activation in the angry versus control contrast ($p=0.0387$). Based on these data, we conclude that our model results are stable across sites.

TABLE S3A. Descriptive statistics by site

| Site | | Pubertal Status | Verbal IQ | SES | Psychosocial Stress Frequency | Age | Conduct Symptoms | Hyperactivity Symptoms | Emotion Symptoms |
|------------|--------------------|-----------------|-----------|-------|-------------------------------|---------|------------------|------------------------|------------------|
| London | Mean | 3.67 | 112.39 | .75 | 3.30 | 14.3393 | 2.3971 | 4.83 | 2.37 |
| | N (F=111 M=93) | 204 | 204 | 204 | 204 | 204 | 204 | 204 | 204 |
| | Std. Deviation | .712 | 12.209 | 1.021 | 1.998 | .37863 | 1.53584 | 2.066 | 2.388 |
| Nottingham | Mean | 3.73 | 103.78 | .67 | 3.22 | 14.4564 | 2.3710 | 4.74 | 2.38 |
| | N (F=103 M=83) | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 |
| | Std. Deviation | .670 | 12.303 | 1.054 | 2.210 | .27828 | 1.73268 | 2.278 | 2.249 |
| Dublin | Mean | 3.57 | 109.97 | .77 | 3.15 | 14.3599 | 2.2979 | 4.51 | 2.53 |
| | N (F=51 M=43) | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| | Std. Deviation | .664 | 13.333 | 1.140 | 1.866 | .29968 | 1.55079 | 2.368 | 2.327 |
| Berlin | Mean | 3.65 | 114.82 | .85 | 3.78 | 14.4800 | 2.6727 | 4.44 | 2.60 |
| | N (F=65 M=45) | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 |
| | Std. Deviation | .698 | 14.070 | 1.340 | 2.065 | .32869 | 1.69786 | 1.947 | 2.585 |
| Mannheim | Mean | 3.64 | 112.07 | .79 | 3.67 | 14.3182 | 2.5367 | 4.10 | 2.33 |
| | N (F=118 M=100) | 218 | 218 | 218 | 218 | 218 | 218 | 218 | 218 |
| | Std. Deviation | .631 | 15.161 | 1.074 | 2.206 | .39638 | 1.51217 | 2.067 | 2.317 |

| | | | | | | | | | |
|---------|--------------------|------|--------|-------|-------|---------|---------|-------|-------|
| Hamburg | Mean | 3.69 | 105.69 | .53 | 3.37 | 14.4527 | 2.3772 | 3.75 | 1.69 |
| | N (F=100 M=67) | 167 | 167 | 167 | 167 | 167 | 167 | 167 | 167 |
| | Std. Deviation | .685 | 14.099 | 1.017 | 2.064 | .49007 | 1.39542 | 2.108 | 2.021 |
| Paris | Mean | 3.51 | 122.03 | .37 | 3.06 | 14.3683 | 2.8365 | 4.33 | 2.08 |
| | N (F=104 M=104) | 208 | 208 | 208 | 208 | 208 | 208 | 208 | 208 |
| | Std. Deviation | .798 | 15.017 | .762 | 2.016 | .45795 | 1.69461 | 2.205 | 2.145 |
| Dresden | Mean | 3.67 | 114.58 | .73 | 3.25 | 14.5461 | 2.2178 | 3.83 | 2.16 |
| | N (F=53 M=48) | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 |
| | Std. Deviation | .694 | 12.148 | 1.139 | 2.037 | .38121 | 1.36091 | 2.084 | 2.411 |
| Total | Mean | 3.64 | 111.98 | .66 | 3.35 | 14.4018 | 2.4876 | 4.34 | 2.24 |
| | N (F=705 M=583) | 1288 | 1288 | 1288 | 1288 | 1288 | 1288 | 1288 | 1288 |
| | Std. Deviation | .700 | 14.823 | 1.057 | 2.084 | .39612 | 1.58121 | 2.167 | 2.297 |

TABLE S3B. Table of descriptive statistic site differences – covariates and symptoms

| Measure | ANOVA | | | Post-Hoc | | | | | |
|------------------------|--------|-----------|------------------------|------------|-----------|------|------------------------|--------|-------|
| | F | DF | P | Direction | mean diff | SE | P | 95% CI | |
| | | | | | | | | lower | upper |
| PDS | 1.76 | (7, 1280) | .091 | - | | | | | |
| VIQ¹ | 31.982 | (7, 1280) | 4.34x10 ⁻⁴¹ | Lon>Nott | 8.61 | 1.24 | 4.99x10 ⁻¹⁰ | 4.82 | 12.40 |
| | | | | Lon>Ham | 6.70 | 1.39 | .000056 | 2.47 | 10.93 |
| | | | | Dub>Nott | 6.19 | 1.65 | .005520 | 1.14 | 11.23 |
| | | | | Berl>Nott | 11.04 | 1.62 | 2.67x10 ⁻⁹ | 6.09 | 15.99 |
| | | | | Berl>Ham | 9.12 | 1.73 | .000008 | 3.83 | 14.41 |
| | | | | Mann>Nott | 8.29 | 1.37 | 8.54x10 ⁻⁸ | 4.12 | 12.45 |
| | | | | Mann>Ham | 6.37 | 1.50 | .000695 | 1.81 | 10.94 |
| | | | | Paris>Lon | 9.64 | 1.35 | 1.16x10 ⁻¹⁰ | 5.53 | 13.74 |
| | | | | Paris>Nott | 18.25 | 1.38 | 5.44x10 ⁻¹³ | 14.05 | 22.45 |
| | | | | Paris>Dub | 12.06 | 1.73 | 1.10x10 ⁻⁹ | 6.78 | 17.34 |
| | | | | Paris>Berl | 7.21 | 1.70 | .0000812 | 2.02 | 12.40 |
| | | | | Paris>Mann | 9.96 | 1.46 | 9.35x10 ⁻¹⁰ | 5.51 | 14.41 |
| | | | | Paris>Ham | 16.33 | 1.51 | 5.49x10 ⁻¹³ | 11.74 | 20.93 |
| | | | | Paris>Dres | 7.45 | 1.60 | .000137 | 2.57 | 12.32 |
| | | | | Dres>Nott | 10.81 | 1.51 | 3.77 ⁻¹⁰ | 6.19 | 15.42 |
| | | | | Dres>Ham | 8.89 | 1.63 | .000003 | 3.91 | 13.87 |
| SES¹ | 4.158 | (7, 1280) | .000155 | Lon>Paris | .39 | .089 | .000406 | .12 | .66 |

| | | | | | | | | | |
|----------------------------------|-------|--------------|-----------------------|------------|-------|------|---------|-------|-------|
| | | | | Nott>Paris | .30 | .094 | .030 | .02 | .59 |
| | | | | Dub>Paris | .40 | .129 | .046 | .00 | .80 |
| | | | | Berl>Paris | .49 | .14 | .012 | .06 | .91 |
| | | | | Man>Paris | .42 | .090 | .000092 | .15 | .70 |
| Age Years¹ | 6.065 | (7, 1280) | 5.57x10 ⁻⁷ | Nott>Lon | .12 | .033 | .012 | .015 | .219 |
| | | | | Nott>Mann | .034 | .033 | .001298 | .036 | .24 |
| | | | | Berl>Lon | .141 | .041 | .016 | .015 | .266 |
| | | | | Berl>Mann | .162 | .041 | .002802 | .036 | .288 |
| | | | | Dre>Lon | .21 | .046 | .000347 | .065 | .348 |
| | | | | Dre>Dub | .186 | .049 | .004649 | .036 | .336 |
| | | | | Dre>Mann | .228 | .046 | .000052 | .086 | .370 |
| | | | | Dre>Par | .178 | .049 | .009314 | .0265 | .3291 |
| Conduct¹ | 2.687 | (7, 1280) | .009162 | Par>Dre | .62 | .179 | .015 | .0705 | 1.166 |
| Hyper² | 5.641 | (7, 1280) | .000002 | Lon>Mann | .74 | .209 | .012 | .08 | 1.39 |
| | | | | Lon>Ham | 1.085 | .223 | .000038 | .39 | 1.78 |
| | | | | Lon>Dre | 1.00 | .260 | .003527 | .19 | 1.82 |
| | | | | Nott>Ham | .993 | .228 | .000405 | .28 | 1.71 |
| | | | | Nott>Dres | .910 | .265 | .017 | .08 | 1.74 |
| Emotion¹ | 2.400 | (7, 1280) | .019259 | Ber>Ham | .911 | .292 | .042 | .02 | 1.81 |

¹Post-Hoc Test = Games Howell ²Post-Hoc Test = Bonferroni

fMRI Analysis Results

ROI results controlling for substance use:

We also ran the regression analyses controlling for substance use (defined in the Methods section). Including substance use in the regression models did not change our results. The interactions remained significant with respect to correction for multiple comparisons (angry vs. control contrast, conduct by stress in right amygdala: $p_{\text{family-wise error-corrected}}=0.003$, $p_{\text{Bonferroni-corrected}}=0.036$; neutral vs. control contrast, conduct by stress in left amygdala: $p_{\text{family-wise error-corrected}}=0.001$, $p_{\text{Bonferroni-corrected}}=0.012$; angry vs. control contrast, hyperactivity by stress in left amygdala: $p_{\text{family-wise error-corrected}}=0.002$, $p_{\text{Bonferroni-corrected}}=0.024$). There was only a main effect of drug use ($p_{\text{family-wise error-corrected}}=0.025$) for the conduct by stress interaction on left amygdala activation in the angry vs. control contrast that does not survive multiple comparison correction ($p_{\text{Bonferroni-corrected}}=0.3$). The emotional symptom regression models were still non-significant when controlling for substance use.

TABLE S3C. Brain regions significantly activated in adolescents in the Angry Faces vs. Control contrast as a function of conduct, hyperactivity/inattention problems and stressful life events. Whole-brain voxel-wise regression analysis (height threshold $T=3.10$, $p_{\text{uncorrected}} < 0.001$, extent threshold, $k=10$ voxels), p-values are reported at family-wise error-corrected cluster level.

| Region | Left/Right | Coordinates of Peak Activation ^a (MNI) | <i>t</i> | β | Cluster Size (<i>k</i>) | <i>p</i> |
|-----------------------------------------------------------------------------|------------|---------------------------------------------------|----------|---------|---------------------------|-----------------------|
| Main effect: Conduct Problems | | | | | | |
| Superior parietal lobule and precuneus BA7 | Right | 24, -73, 49 ^a | 4.42 | .05 | 48 | .015 |
| Postcentral gyrus | Right | 33, -52, 73 ^a | 4.18 | .04 | 51 | .011 |
| Interaction effect: Conduct Problems x Psychosocial Stress Frequency | | | | | | |
| Region | Left/Right | Coordinates of Peak Activation ^a (MNI) | <i>t</i> | β | Cluster Size (<i>k</i>) | <i>p</i> |
| Middle Temporal Gyrus and Superior Temporal Gyrus | Right | 69, -40, 7 ^a | 5.41 | .02 | 83 | 5.72×10^{-4} |
| Superior Temporal Gyrus and Middle Temporal Gyrus | Right | 42, -10, -14 ^a | 4.85 | .02 | 137 | 2.15×10^{-5} |
| Thalamus and Pulvinar | Left | -12, -28, 13 ^a | 4.85 | .02 | 124 | 2.15×10^{-5} |
| Insula, Rolandic Operculum, BA13 and Superior Temporal Gyrus | Right | 36, -22, 19 ^a | 4.78 | .02 | 65 | 4.78 |
| Anterior Cingulate Cortex and Medial Frontal Gyrus | Left | -6, 47, 7 ^a | 4.72 | .02 | 191 | 2.03×10^{-7} |
| Superior Frontal Gyrus and Middle Frontal Gyrus | Right | 30, 62, 19 ^a | 4.69 | .03 | 62 | 3.8×10^{-3} |
| Extra-Nuclear, Sub-lobar | Right | 12, -31, 10 ^a | 4.53 | .02 | 47 | .017 |
| Inferior Frontal Gyrus | Right | 60, 23, 10 ^a | 4.42 | .01 | 42 | .028 |
| Middle Cingulate Cortex | Right | 3, 5, 37 ^a | 4.38 | .02 | 128 | 1.60×10^{-5} |
| Middle Frontal Gyrus | Right | 36, 38, 46 ^a | 4.30 | .02 | 74 | 1.3×10^{-3} |
| Thalamus, Medial Globus Pallidus | Right | 15, -16, 1 ^a | 4.28 | .01 | 71 | 1.6×10^{-3} |
| Inferior Frontal Gyrus | Left | -51, 14, 4 ^a | 3.98 | .02 | 39 | .038 |

| Interaction effect: Hyperactivity/Inattention Problems x Psychosocial Stress Frequency | | | | | | |
|-----------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------|-----------------|---------------------------|--------------------------------|-----------------|
| Region | Left/Right | Coordinates of Peak Activation^a (MNI) | <i>t</i> | β | Cluster Size (<i>k</i>) | <i>p</i> |
| Middle Cingulate Cortex BA24, Anterior Cingulate Cortex | Left | -3, 2, 37 ^a | 7.09 | .01 | 49 | .014 |

MNI, Montreal Neurological Institute; ^aCoordinates refer to the voxel with the maximum signal intensity.

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