Supplementary Online Content

Rice F, Sellers R, Hammerton G, et al. Antecedents of new-onset major depressive disorder in children and adolescents at high familial risk. *JAMA Psychiatry*. Published online December 7, 2016. doi:10.1001/jamapsychiatry.2016.3140

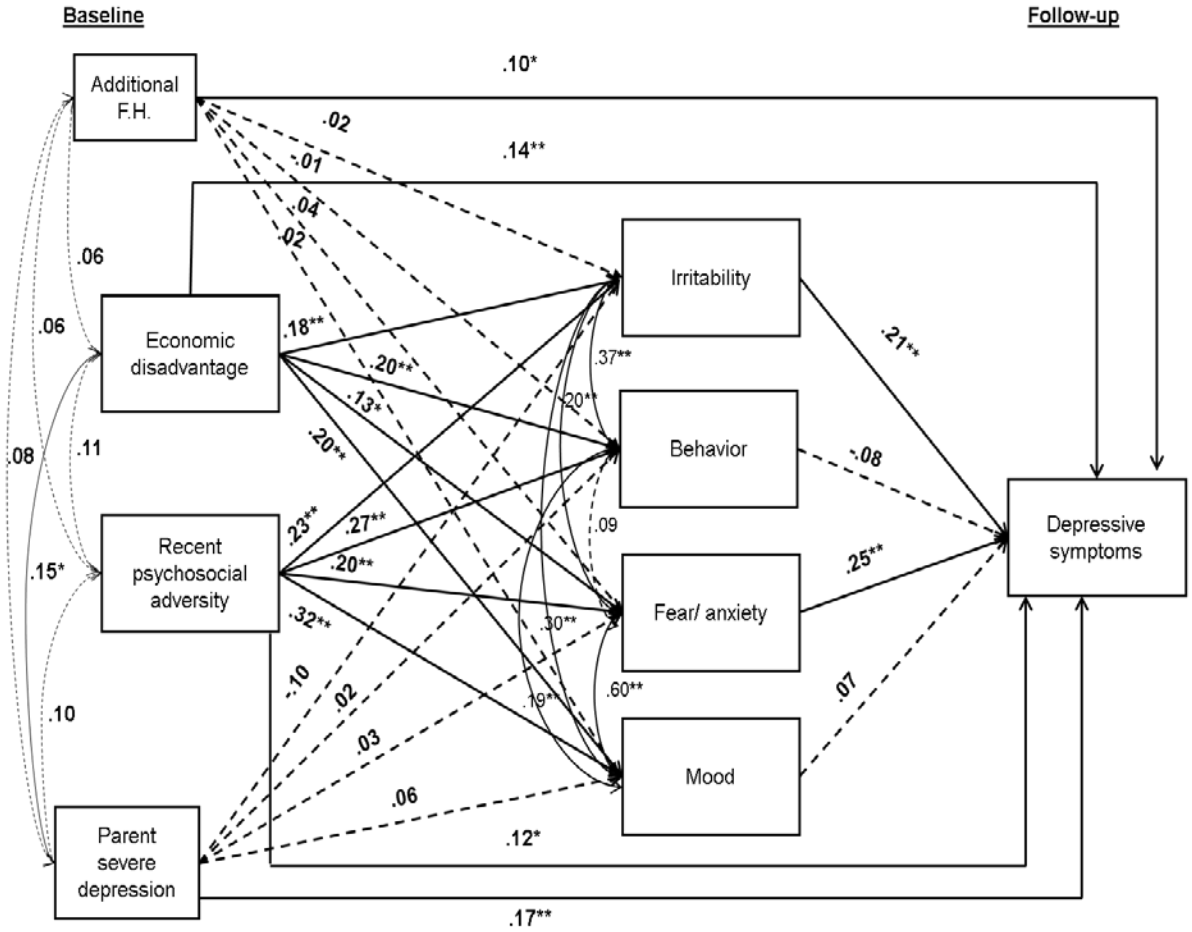
eAppendix. Supplementary Material for Secondary Outcome Variable of *DSM-IV* MDD Symptom Count and Sensitivity Analyses for the Primary Outcome of New-Onset MDD

This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix. Supplementary Material for Secondary Outcome Variable of *DSM-IV* MDD Symptom Count and Sensitivity Analyses for the Primary Outcome of New-Onset MDD

We carried out a number of supplementary analyses. We first examined the full estimated model for the secondary outcome of DSM-IV MDD symptom count. The full model is presented in Figure E1 and, as described in the results section, the pattern of findings was very similar to those for the primary outcome of new-onset MDD. The exception to this was that the paths to MDD symptoms from irritability and from fear/anxiety were not significantly different (χ^2 (1) = 0.27, p = .605). The indirect effect from economic disadvantage to MDD symptom count via irritability was not significant (β= .008, p=.45) nor was the indirect effect from economic disadvantage via fear/anxiety (β= -.001 p=.93). The indirect effects from psychosocial adversity to DSM-IV MDD symptom count via fear/anxiety (β= -.006, p=.54) and via irritability (β= .007, p=.51) were also not significant. The proportion of variation in MDD symptom count explained was 30% (Hayduk's blocked-error R^2= .301).

eFigure: Structural equation model examining pathways to DSM-IV Major Depressive Disorder symptom count



Footnote to Figure E1

F.H.: Family history; * p < .05; **p < .01

Final model fit was excellent χ^2 (10) = 10.89, p = .366; RMSEA = .02 (.00, .07); CFI = 1.00; SRMR = .02

Sensitivity analyses for primary outcome of new-onset MDD

Next, we carried out a number of sensitivity analyses examining the primary outcome of new-onset MDD. We first checked whether results were influenced by the allowance of irritability as opposed to low mood by the DSM as a core mood symptom of depression in young people. There were no cases with irritability as their only mood symptom. We next checked the effects of age by examining the pattern of results when excluding pre-pubertal new-onset MDD given that prior research has indicated evidence to suggest that pre-pubertal onset MDD may differ from adolescent and adult onset MDD[1-8]. At each assessment phase, participants aged under 17 years reported on pubertal status by completing the Puberty Development Scale which shows good validity in comparison to physician ratings[9,10]. Items ask whether there had been no development, a little development or a lot of development in five areas: body hair, skin and increased speed of growing with separate additional items for boys and girls. Boys were also asked about 'voice breaking' and facial hair. Girls were also asked about breast development. Individuals were considered pre-pubertal if there had been no development in each area. Scores for each characteristic (0 = no development; 1 = a little; 2 = a lot) were summed to produce a continuous puberty scale (range for boys: 0-10; range for girls: 0-8). We examined pubertal status for the new-onset MDD cases by examining their self-reported puberty data as reported at the assessment contemporaneous with their MDD onset. All of the individuals with new-onset MDD had some pubertal characteristics (continuous puberty score range 1-8, median =6). Three individuals did not provide puberty data as they were aged 17 or over. Puberty data were missing for three individuals (a 12 year old female, a 15 year old female and a 16 year old female). Thus, we did not undertake any further sensitivity analysis as no individuals could be considered pre-pubertal. We then

examined whether the separate dimensions of fear/anxiety were differentially associated with new-onset MDD. Models were run for each anxiety dimension assessed by the SCARED[11,12] (panic disorder/somatic symptoms, generalized anxiety, separation anxiety, social anxiety and school avoidance) and the magnitude of the path to new-onset MDD was examined. The path estimates for each anxiety dimension to new-onset MDD were: panic disorder/somatic symptoms (β=.17, p=.004), generalized anxiety (β=.27, p<.0001), separation anxiety (β=.29, p<.0001), social anxiety (β=.15, p=.004) and school avoidance (β=.30, p<.0001). For separation anxiety, social anxiety and panic disorder/somatic symptoms there were additional (independent) significant positive associations of low mood with new-onset MDD (β=.13, p=.01; β=.19, p=.002; β=.17, p=.01) respectively. Thus, of the five anxiety dimensions, the stronger predictive effects on new-onset MDD came from generalized anxiety and school avoidance. The full pattern of results when using the generalized anxiety sub-scale as a dimensional clinical antecedent was very similar to that observed for the total anxiety score (results available from first author). Whilst separation anxiety, social anxiety and panic disorder/somatic symptoms showed significant association with new-onset MDD there were additional independent effects of low mood in those analyses. Finally, we examined whether the clinical antecedents of fear/anxiety and irritability were associated with MDD age-of-onset given previous suggestions that fear/anxiety might be associated with early-onset MDD. Consistent with previous suggestions, we observed an inverse correlation between fear/anxiety and MDD age of onset (r= -.568, p=.009) but not for irritability (r= -.078, p=.745). However, it should be noted that offspring in our study are all children/adolescents so age of onset variation is restricted.

References supplementary material

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