NEW RESEARCH

Biases in Interpretation as a Vulnerability Factor for Children of Parents With an Anxiety Disorder

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Objective: Children of parents with an anxiety disorder have a higher risk of developing an anxiety disorder than children of parents without an anxiety disorder. Parental anxiety is not regarded as a causal risk factor itself, but is likely to be mediated via other mechanisms, for example via cognitive factors. We investigated whether children of parents with an anxiety disorder would show an interpretation bias corresponding to the diagnosis of their parent. We also explored whether children's interpretation biases were explained by parental anxiety and/or children's levels of anxiety.

Method: In total, 44 children of parents with a panic disorder (PD), 27 children of parents with a social anxiety disorder (SAD), 7 children of parents with SAD/PD, and 84 children of parents without an anxiety disorder (controls) participated in this study. Parents and children filled out the Screen for Child Anxiety Related Disorders (SCARED) questionnaire, and children performed two ambiguous scenario tasks: one with and one without video priming.

Results: Children of parents with PD displayed significantly more negative interpretations of panic scenarios and social scenarios than controls. Negative interpretations of panic scenarios were explained by parental PD diagnosis and children's anxiety levels. These effects were not found for children of parents with SAD. Priming did not affect interpretation.

Conclusion: Our results showed that children of parents with PD have a higher chance of interpreting ambiguous situations more negatively than children of parents without anxiety disorders. More research is needed to study whether this negative bias predicts later development of anxiety disorders in children.

Key words: anxiety, risk factors, affective disorders, developmental psychopathology, interpretation bias

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Children of parents with an anxiety disorder have a higher risk of developing an anxiety disorder than children of parents without an anxiety disorder.[1] Studies report heritability estimates of 30% to 50% for anxiety symptoms in children.[2] Parental anxiety is not regarded as a causal risk factor itself but is likely to be mediated via other mechanisms.[3] From a preventive perspective, it is crucial to improve our knowledge about the mechanisms that increase vulnerability for psychopathology in children of parents with an anxiety disorder.

Cognitive theories propose that biases in cognitive processing, including interpretation bias, may be an underlying factor in the intergenerational transmission of anxiety.[4] Interpretation bias refers to the tendency to form a threatening interpretation of ambiguous situations and stimuli. A recent meta-analysis found a medium positive association between anxiety and interpretation bias in children.[5] Furthermore, it found a moderating effect of the content of ambiguous scenarios and of age; the relation between anxiety and interpretation bias was stronger when the ambiguous scenarios matched the anxiety subtype under investigation and was also stronger in older children. However, the authors pointed out that this effect was driven mainly by studies that focused on social anxiety, and clearly more studies are needed before firm conclusions can be drawn.

As interpretation biases are associated with childhood anxiety, it is possible that children of parents with anxiety disorder show antecedents of an interpretation bias before developing an anxiety disorder. Parents with anxiety disorders might somehow also transmit specific information related to their disorder to their children, which makes their children more vulnerable to developing a similar anxiety disorder. To date, little is known about the role that cognitive biases might play in the increased vulnerability of children of parents with anxiety. There are a few studies that investigated interpretation biases in familial relationships.[6,7] However, these studies included either community samples or samples of children with anxiety disorder, which is not informative about how specific parental diagnoses relate to interpretation biases of the child. Therefore, the aim of the current study was to study the presence of interpretation biases in children of parents with anxiety disorders.

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The current study was based on the single published study that focused on the role of interpretation biases in children of parents with anxiety disorder. Schneider *et al.*[8] presented ambiguous scenarios to three groups of children: children of parents with PD, children of parents with an animal phobia, and children of parents without an anxiety disorder. They administered the scenarios task twice, the second time preceding the task with video priming. Priming is assumed to increase the accessibility of already existing anxiety associations and linked threat information, thereby making it more likely that information-processing resources are directed toward threat.[9] The investigators found that children of a parent with PD displayed significantly more negative interpretations of panic-related physical sensations after they had seen the panic priming video. This effect was not found for the other scenarios, which suggests that the bias of the child was specifically related to the parental diagnosis.

The first objective of the current study was to investigate interpretation biases in children of a parent with PD or SAD, compared to children of parents without an anxiety disorder. We chose to study PD and SAD because we wanted to include two anxiety disorders to test for content-specificity of interpretation bias and because the clinics that collaborated with us had relatively more patients with SAD/PD than other anxiety disorders. More specifically, we investigated whether parent's lifetime type of anxiety was related to the child's interpretation bias score for the same lifetime type of anxiety, controlled for the child's anxiety score. It was expected that children of a parent with PD would show the most negative interpretations of panic scenarios, followed by children of a parent with SAD (due to comorbidity), followed by children of parents without an anxiety disorder (controls). Children of parents with SAD were expected to have the most negative interpretations of social scenarios, followed by children of a parent with PD, followed by controls. Schneider *et al.*[8] showed that priming might activate a latent fear schema in children at risk. Therefore, we preliminarily tested whether priming has an effect on children's interpretation bias. If this effect appeared to be negligible, we would use the mean of the nonpriming task score and the priming task score. The second aim was to explore whether child interpretation biases can be explained by the lifetime diagnosis of the parent anxiety, current anxiety levels of the parent, and/or current anxiety levels of the child. Since the parents with anxiety in our study had a lifetime PD or lifetime SAD, some of the parents might not have had symptoms of their disorders at the time of testing. Therefore, we included current parental anxiety levels.

METHOD

Participants

Participants were between 7 and 14 years of age (mean = 10.16 years, SD = 1.58 years). We recruited three groups of children: children of a parent with PD with or without agoraphobia; children of a parent with SAD; and children of parents with no anxiety disorders (controls). For the children of a parent with PD and/or SAD, at least one parent had to have the target lifetime diagnosis, whereas for the controls neither parent had a history of anxiety disorders during the life of the child and no lifetime SAD or PD. The gender distribution is provided in Table 1. Because of time limitations, we were unfortunately not able to obtain a diagnostic interview of the partner of the parent with an anxiety disorder.

Children of a parent with an anxiety disorder (n = 67) were recruited via the treatment facility of the parents. Diagnoses in parents were assessed with a Mini–International Neuropsychiatric Interview (MINI), a semi-structured interview,[10] by licensed therapists. All patients at the different treatment facilities with PD and/or SAD were screened for having children. If parents had children in the sought age range, they were asked if they and their children would be interested in participating in the study. Children were included in the study if their biological parent had SAD or PD after the child had been born. Four clinics (that are connected to NijCa^{2}re: a Dutch research group of clinicians and researchers with the aim to bridge the gap between science and practice) participated in the project, with most clinics having more treatment facilities spread throughout the eastern part of the Netherlands.

Controls were recruited via connections of the authors (n = 26) and a participating school (n = 69). To rule out PD and SAD diagnoses, the control children's parents were interviewed either face-to-face or by telephone with the MINI diagnostic interview by trained and supervised clinical Master's degree students. Lifetime and current diagnoses were assessed. Furthermore, it was assessed whether the disorder was present during the life of the child, and whether parents had ever followed treatment for anxiety disorder or other psychological problems at some point during their life. Four parents of the recruited control children had PD or SAD during the life of their child, so they were included in the group with the corresponding diagnosis. Seven children in the control group were excluded after the data collection at school because the MINI interview with the parents revealed that they did not meet the inclusion criteria for the clinical or control groups (e.g., because the child was not the biological child of the parent). Exclusion criteria for all three groups were acute suicidal ideation and current psychosis.