SomatoSomatic Complaints in Young Children: Relationships with Cortisol, Internalizing ProblemsComplaints in Young Children: Relationships with Cortisol, Internalizing Problems
& Maternal Anxiety Disorders

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Introduction

Somatic complaints, which affect 10-30% of youth in the United States, refer to physical symptoms (i.e., headache, abdominal pain) with no identifiable organic cause (Beck, 2008; Campo, 2012).

Children with somatic complaints are significantly more likely to experience internalizing symptoms and disorders (Campo, 2012; Hotopf et al., 1988). The parallels between somatic complaints, anxiety, and depression, including dysregulated HPA-axis activity, suggest a latent internalizing factor may underlie these three phenotypes (Ask et al., 2016). However, little work has examined the persistence and behavioral correlates of somatic complaints as early as the preschool years.

Maternal anxiety has been associated with child somatic complaints, but the mechanisms underlying this association are unknown (Wolff et al., 2010). It is also unclear whether the correlates and outcomes associated with preschool somatic complaints might be different for children of mothers with anxiety disorders, relative to controls.

The current study explored the longitudinal development of somatic complaints from preschool to school-age and their relationships with child internalizing symptoms and cortisol reactivity, examining maternal anxiety disorder as a potential moderator of these associations.

Method

Participants & Procedures

185 mother-child dyads (151 recruited from Emory Women’s Mental Health Program, 34 community controls) completed a lab visit at preschool-age (2.5-5.5 years) and an online follow-up survey (via REDCap) at school-age (5-10 years, M=7.16, SD=1.20, N=48.6% female). Secondary caregivers also completed reports at both time points.

Measures

Child Internalizing Symptoms

Mothers and secondary caregivers completed the Somatic Complaints and Anxious/Depressed subscales of the Child Behavior Checklist (Achenbach, 2001; Achenbach & Rescorla, 2000) at both preschool and school-age.

Child Cortisol

During the preschool visit, children provided two saliva samples (one after acclimation to the lab and the other following frustration tasks).

Maternal Anxiety

During the preschool visit, mothers were assessed using the Structured Clinical Interview for DSM-IV Axis I Disorders, a semi-structured interview that assesses lifetime history of mental illness (First, Spitzer, Gibbon, & Williams, 1995). Mothers who met lifetime criteria for panic disorder, agoraphobia, social anxiety disorder, OCD, PTSD, GAD, anxiety due to another medical condition, substance-induced anxiety disorder, or anxiety disorder NOS were classified as having an anxiety disorder.

Analyses

Descriptive Analyses

- Nearly half (47.6%) of mothers met lifetime criteria for an anxiety disorder.
- Prevalence of somatic complaints was high. Across reporters, over 60% of preschool and nearly 50% of school-age children experienced at least one somatic complaint.

Statistical Analyses

- Data analyses were carried out by linear and logistic regressions.
- Demographic factors including sex, maternal age, maternal education, and child age were tested as potential covariates; child age was significant and thus controlled for in all necessary analyses.

Results

Maternal (Wald=4.83, p<.026) and alternate caregiver (Wald=5.14, p<.023) reports indicated a significant interaction for maternal anxiety and cortisol in the prediction of persistent somatic complaints.

Specifically, in children of mothers with a history of an anxiety disorder, lower cortisol reactivity was related to child persistent somatic complaints, whereas in children of mothers without history of an anxiety disorder, higher cortisol reactivity was related to child persistent somatic complaints.

Conclusions

This study provides evidence of associations between child somatic complaints, cortisol reactivity, and maternal anxiety disorder history. Results support the notion of a latent internalizing factor, of which somatic complaints may be the earliest behavioral manifestation.

This work highlights the potential for early childhood somatic complaints to serve as an intervention target for childhood mood and anxiety disorders, particularly among children of mothers with a history of anxiety.

Biological mechanisms (e.g., HPA-axis function) underlying childhood somatic complaints may differ depending upon the presence or absence of a family history of anxiety disorder.

Future work should continue to consider maternal psychopathology and child physiological factors when examining the development of somatic complaints in childhood. Longitudinally following children from preschool into early adulthood will provide a more nuanced developmental understanding and inform optimal periods of intervention.

References

Camp, J. V. (2012). Annual research review: Functional somatic symptoms and associated anxiety and depression: Biological mechanisms (e.g., HPA-axis function) underlying childhood somatic complaints may differ depending upon the presence or absence of a family history of anxiety disorder. *Biological Psychology, 91*, 96-108.

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