

BACKGROUND

- Non-specific somatic symptoms are common pediatric complaints that are frequently encountered by youth, their parents/caregivers and pediatric health-care providers.
- Among the most challenging of these symptoms are chronic pediatric pain complaints, which affect 15-37% of youth today.
- Pain can interfere in daily functioning and is a risk factor for developing a chronic pain syndrome in adulthood.
- Developmental frameworks include family level factors (e.g., cohesion, functioning) and parents' own emotions, health and behaviors as factors that may influence their children's experience of pain and symptoms.
- Gaps exist in current knowledge of transmission of risk from parents to their offspring for anxiety, somatic symptoms and social problems.

OBJECTIVE

To examine both mother and father self-reports of anxiety and somatization and their prospective relationship to adolescent symptom reports of anxiety, somatic symptoms and social problems in a longitudinal community sample.

METHODS

Participants:

- 10th and 11th grade high school students from 7 public high schools in the Mid-Atlantic region of the U.S. and their mothers (N = 147) and fathers (N = 86). Only participants with completed parent and adolescent reports were examined in this project.
- Adolescent participants were 57% female; age: M = 16.10, SD = 0.71, 65% Non-Hispanic White; 19% African American; 11% Hispanic/ Latino; 2% Asian; 3% "other."
- Most adolescents (60%) lived with both biological parents; 91% lived with their biological mother and 65% lived with their biological father.
- The majority of mothers (96%) and fathers (97%) had graduated from high school.

Procedure:

- Self-report questionnaires were administered to adolescents during school in the spring of 2007 (Time 1, T1) and 2008 (Time 2, T2); parents were mailed packets that included a consent form, surveys, and a prepaid return envelope.
- 80% of adolescents participating at T1 also participated at T2. A smaller subset of parents completed study questionnaires at both time points.

METHODS

Measures:

- **Brief Symptom Inventory (BSI)** – parent self-reported symptoms on the **Anxiety** subscale (assessed general signs of nervousness and tension) and the **Somatization** subscale (reflects distress arising from perceived bodily dysfunction including pain and discomfort)
- **Child Behavior Checklist (CBC)** – parent report on scales assessing **somatic complaints** (e.g., aches/pains, nausea, dizzy/lightheaded) and **social problems** (e.g., gets teased a lot, clings to adults/too dependent, doesn't get along with other kids)
- **Screen for Anxiety Related Disorders (SCARED)** – adolescent self-reports for scales assessing **generalized anxiety** disorder (e.g., "I am a worrier"), **significant school avoidance** (e.g., "I get headaches [or stomachaches] at school"), and **social anxiety** disorder (e.g., "I don't like to be with people I don't know well") were examined

Analytic Plan:

- Bivariate correlations between parent anxiety and somatization and adolescent anxiety, somatic symptoms and social problems
- Regression analyses to examine mother and father reports of anxiety and somatization as predictors of adolescent anxiety, somatic symptoms and social problems

RESULTS

Table 1. Correlations between T1 Mother and Father reports on BSI subscales and Adolescent CBC and SCARED subscales reported at T1 and T2.

Adolescent Measures (T1)	Mothers (T1)		Fathers (T1)	
	BSI Anxiety	BSI Somatization	BSI Anxiety	BSI Somatization
CBC social problems	.175*	.213*	.04	-.051
CBC somatic complaints	.136	.374**	.158	.148
SCARED generalized anxiety	.230*	-.016	.039	.216
SCARED school avoidance	.185*	.061	.084	.055
SCARED social anxiety	.057	-.101	.090	-.028
Adolescent Measures (T2)	Mothers (T2)		Fathers (T2)	
CBC social problems	.222*	.240*	.352*	.512**
CBC somatic complaints	.112	.204*	.364*	.104
SCARED generalized anxiety	.264**	-.014	.110	-.292*
SCARED school avoidance	.092	.061	.326*	.120
SCARED social anxiety	-.060	-.223*	.093	-.077

Note. *p < .05; **p < .01; T1=Time 1, T2=Time 2

RESULTS

- Mothers who initially report more symptoms of:
 - Anxiety have adolescents with more school avoidance at T1 and generalized anxiety and social problems both at T1 and T2.
 - Somatization perceive their adolescents as having more social problems and somatic complaints both at T1 and T2, but less social anxiety only at T2.
- Fathers who initially report more symptoms of:
 - Anxiety have adolescents with more social problems, somatic complaints, and school avoidance anxiety at T2 only.
 - Somatization have adolescents with more social problems, but less generalized anxiety at T2 only.

A series of hierarchical regression models were examined within a subsample (n=40) of adolescents that had both mother and father reported data to determine significant parent predictors of adolescent symptoms on the CBC and SCARED at T2. A significant regression model [$F(40, 3)=14.72, p < 0.001$] found both mother and father self-reported anxiety at T1 were unique predictors of adolescent significant school avoidance at T2.

Table 2. Hierarchical regression model results for mother and father anxiety at T1 as predictors of adolescent significant school avoidance anxiety at T2.

Variables	β	t	R	R ²	ΔR^2
Step 1			.654	.428	.428***
1. T1 SCARED school avoidance	.654	.5405***			
Step 2			.738	.544	.116*
1. T1 SCARED school avoidance	-.688	6.145***			
2. T1 Mothers' anxiety	-.295	-2.530*			
3. T1 Fathers' anxiety	.272	2.355*			

Note. *p < .05; **p < .01; ***p < .001. T1=Time 1, T2=Time 2

CONCLUSION

- Both mother's and father's experience of anxiety and somatic symptoms are important factors to consider in the development of adolescent social and emotional health.
- Notably, T1 mother and father anxiety uniquely predicted adolescent self-reported significant school avoidance at T2.
- Findings have implications for pediatricians who are often the first point of contact for youth with somatic symptom complaints that often overlap with anxiety.
- Pediatricians' awareness of intergenerational associations between parent and youth anxiety and somatic symptoms plays a critical role in early identification support to prevent development of chronic symptoms and associated functional disability (e.g., school avoidance) in youth.
- Further research targeting optimal integration of brief, effective, family centered intervention strategies for families at risk for developing chronic pain and somatic symptom disorders is needed to support pediatric providers working in busy pediatric primary care settings.