

DEVELOPMENT OF A MEASURE OF FAMILY ACCOMMODATION FOR PEDIATRIC  
ANXIETY DISORDERS

By

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To my Dad

## ACKNOWLEDGMENTS

I would like to thank my parents and my mentors, all of whom have been supportive throughout my graduate training.

## TABLE OF CONTENTS

	<u>page</u>
ACKNOWLEDGMENTS .....	4
LIST OF TABLES .....	6
LIST OF FIGURES .....	7
ABSTRACT .....	8
CHAPTER	
1 INTRODUCTION .....	10
Family Variables related to Pediatric Anxiety .....	10
Family Accommodation .....	12
Family Accommodation and Pediatric Anxiety Treatment .....	15
Aims of the Current Study .....	17
2 METHOD .....	18
Participants .....	19
Clinical Interviewers .....	20
Measures .....	21
Clinician Administered .....	21
Child Report .....	22
Parent Report .....	23
Procedures .....	25
3 RESULTS .....	27
Evaluation of Scale Items .....	27
Reliability .....	30
Convergent and Discriminant Validity .....	30
Exploratory Analysis of Family Accommodation Construct .....	34
Mediation Analyses .....	34
4 DISCUSSION .....	36
APPENDIX: PEDIATRIC ACCOMMODATION SCALE .....	43
LIST OF REFERENCES .....	47
BIOGRAPHICAL SKETCH .....	53

## LIST OF TABLES

<u>Table</u>		<u>page</u>
3-1	PAS item characteristics by site .....	28
3-2	Pearson correlations among study variables.....	32

## LIST OF FIGURES

<u>Figure</u>	<u>page</u>
3-1 Models of conditional indirect effects.....	35

Abstract of Dissertation Presented to the Graduate School  
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The present study developed a measure of family accommodation (Pediatric Accommodation Scale; PAS) for children with Generalized Anxiety Disorder (GAD), Social Phobia (SP), and Separation Anxiety Disorder (SAD). Participants were 59 caretakers and their children ages 7 to 17 with a principle diagnosis of GAD, SP, or SAD. The PAS, a clinician-administered measure, was administered at two sites along with other study measures. Results provided preliminary evidence for the psychometric properties of the PAS, including internal consistency, inter-rater reliability, and some evidence of convergent validity. Examination of the frequency of individual items on the PAS showed that up to 90% of parents endorsed at least minimal accommodation. There were significant site differences on the PAS, suggesting that results may have been influenced by the interviewer's level of training and experience with an anxiety disorders population. Based on findings in the Obsessive Compulsive Disorder (OCD) literature, a series of mediation models were tested that did not support family accommodation as a mediator in the relationship between symptom severity and functional impairment or in the relationship between parent psychopathology and symptom severity. It is possible that accommodation has a different role in these anxiety

disorders compared with its role in OCD, but is also possible that the current study was underpowered to detect mediation effects.

## CHAPTER 1 INTRODUCTION

Anxiety disorders represent the most common group of psychiatric disorders in children, with prevalence rates of 12% to 20% (Achenbach, Howell, McConaughy, & Stanger, 1995; Velting, Setzer, & Albano, 2004). Anxiety disorders in childhood cause impairment across multiple domains, including academic and interpersonal functioning, and are associated with lower levels of social supports, academic underachievement, underemployment, substance use, and high comorbidity with other disorders (Bernstein & Borchardt, 1991; Velting et al., 2004). Additionally, untreated pediatric anxiety disorders are often unremitting into adulthood (Last, Phillips, & Statfield, 1987). Although Cognitive Behavioral Therapy (CBT) has been identified as a probably efficacious treatment for childhood anxiety, there remain children who are treatment refractory (Cartwright-Hatton et al., 2004), and the majority of treatment studies have failed to identify mechanisms of change in treatment or predictors of treatment refractoriness (Cartwright-Hatton et al., 2004). Identification of mechanisms of change and predictors of treatment outcome is important to improve treatments and to address the needs of treatment refractory patients. Development of measures to assess these variables and inclusion of such measures in treatment studies will be necessary to identify ways to improve treatment.

### **Family Variables related to Pediatric Anxiety**

Applied practice has frequently implicated parent and family variables in child symptom expression and in treatment outcome (Gosch et al., 2006; Kingery et al., 2006). Although a number of studies have explored the role of parent and family variables, the range of variables investigated to date has been limited. More

specifically, parental factors associated with childhood anxiety disorders include parenting stress (Mash & Johnston, 1990), and presence of parental psychopathology (McClure, Brennan, Hammen, & le Broque, 2001). Parents of anxious children are also less likely to encourage autonomy and more likely to support avoidant coping strategies (Dadds, Barrett, Rapee, & Ryan, 1996). Family factors, such as low levels of family adaptiveness and high levels of family cohesion (Poleg-Popko & Dar, 2001) have also been associated with anxiety in children.

Similarly, those parental and family factors have been associated with treatment outcome in anxious children. Children with high levels of family dysfunction, parental frustration, and parenting stress may have poorer response to treatment (Crawford & Manassis, 2001). This may be due to presence of family processes with the potential to interfere with progress in treatment or to prevent families from fully engaging in treatment. In contrast to the results of Poleg-Popko and Dar (2001), Victor, Bernat, Bernstein, and Layne (2007) demonstrated that families high in cohesion had better treatment outcome than those low in cohesion, following CBT with parent training. They also reported no differences in treatment outcome related to family adaptability, parenting stress, or parental psychopathology.

Despite a number of theoretical and empirical reports of the role of parenting in development and maintenance of pediatric anxiety, meta-analysis of 47 investigations revealed that only 4% of variance in child symptoms was accounted for by parenting practices (McLeod, Wood, & Weisz, 2007). However, the vast majority of parenting practices investigated were some form of parental rejection or parental control. Given that studies inconsistently identify family variables associated with pediatric anxiety

disorders and outcomes of treatment, and the limited range of family variables that have previously been studied, it is likely that research has not yet identified relevant family variables.

### **Family Accommodation**

One reason for the failure to identify family variables related to childhood anxiety may be a lack of appropriate measures to assess them. Family accommodation, for example, has been clinically reported as a barrier to pediatric anxiety treatment by virtue of being counter to the principles of CBT (Storch et al., 2007a). Family accommodation refers to ways in which family members accommodate patient symptoms, such as providing reassurance, avoiding feared stimuli, taking over a patient's duties, participation in rituals and modifying family routines. Theoretically, family accommodations negatively reinforce the patient's symptoms, thereby affecting symptom severity and adversely affecting treatment outcome (Leane, 1991). For example, provision of reassurance is negatively reinforcing because it temporarily reduces anxiety. Similarly, allowing the patient to avoid feared situations is negatively reinforcing. Given that family accommodation has been related to symptom severity and treatment outcome in children and adults with Obsessive-Compulsive Disorder (OCD; Amir, Freshman, & Foa, 2000; Storch et al., 2007a; Storch et al., 2007b), it may be a family variable that is important to investigate in other pediatric anxiety disorders. Similar to the manner in which family accommodation is theorized to interfere with treatment through provision of negative and positive reinforcement of OCD symptoms, families of children with other anxiety disorders may also be reinforcing symptoms through accommodation. Although children with other anxiety disorders do not have

rituals, parents may accommodate in many other ways (e.g., providing reassurance, allowing avoidance of feared stimuli, taking over a patient's responsibilities).

Although there is not currently a measure of family accommodation for general child anxiety, Calvocoressi et al. (1995; 1999) developed a 13-item measure of family accommodation specific to symptoms of OCD, demonstrating good internal consistency ( $\alpha = .76 - .82$ ), interrater reliability (ICCs = .72 to 1.0), and construct validity through higher correlations with measures of family functioning and family stress than with measures of financial stress and stress associated with caring for those with physical disabilities. The FAS targets the following forms of accommodation: facilitation of compulsions, providing reassurance, facilitating avoidance, modifying family routines, and assuming responsibilities of the patient. These accommodating behaviors were associated with reduced global functioning and increased symptom severity.

Following development of the FAS, researchers have been able to study family accommodation in adults and children with OCD. Up to 90% of families of OCD adults report at least minimal accommodation of symptoms (Allsop & Verduyn, 1990; Storch et al., 2007b). Family accommodation has also been positively related to depression and anxiety in family members of adult OCD patients (Amir, Freshman, & Foa, 2000). In family members of patients with OCD, disengagement coping strategies such as family accommodation were positively related to depression and inversely related to hope and adaptive coping (Geffken, Storch, Duke, Monaco, and Goodman, 2006). In a study of children with OCD, most families reported some degree of family accommodation (Storch et al., 2007a). Family accommodation was also related to symptom severity, functional impairment, and to comorbid internalizing and externalizing behavior

problems. Storch et al. (2007b) found that family accommodation mediates the relationship between symptom severity and parent-rated functional impairment, further demonstrating the potential importance of addressing family accommodation in treatment.

In a study of adults with OCD, Amir, Freshman, and Foa (2000) found that family accommodation and family distress were related to symptom severity post-treatment, suggesting that family accommodation hinders progress in treatment. They argue that family functioning, including family accommodation, should be addressed as part of treatment. Similarly, Ferrao et al. (2006) reported that while most families of patients with OCD entering treatment reported some level of accommodation, treatment refractory patients demonstrated the highest levels. In that study, 52.4% of families of refractory patients were classified as having extreme family accommodation, compared with only 3.8% of treatment responder families. In a study of family-based CBT for pediatric OCD, family accommodation was reduced following treatment, although this study did not examine the mechanism of change (Storch et al., 2007a).

Despite its importance in treatment outcome of pediatric OCD, family accommodation has not been studied in children with other pediatric anxiety disorders. Similar to the way in which family accommodation reinforces OCD symptoms, it may reinforce symptoms in other pediatric anxiety disorders. In Generalized Anxiety Disorder (GAD), for example, parents may provide reassurance about many different worries, or allow their children to avoid situations which might elicit anxiety (e.g., watching the news). In Social Phobia (SP), parents may allow their children to avoid feared social situations, or rearrange family routines to accompany the child to social

situations which the child might otherwise fear. By nature of the disorder, parents of children with Separation Anxiety Disorder (SAD) are involved in symptoms. Parents of children with SAD likely spend extra time upon separating trying to reassure the patient, or rearrange family schedules to allow children to avoid separation. Accommodating behaviors such as these have the potential to interfere with treatment, as they may undermine techniques that are central to completion of CBT.

### **Family Accommodation and Pediatric Anxiety Treatment**

Similar to OCD, other anxiety disorders are hypothesized to be maintained through negative reinforcement. Existence of contingency management as an integral part of treatments for pediatric anxiety implies that many parents need to cease providing negative reinforcement, through learning ways to reinforce appropriate behaviors and not to reinforce inappropriate, anxiety-driven behaviors (Kendall, 1994; Kendall, 2000; Spence et al., 2000). Studies have not investigated which behaviors parents engage in that necessitate contingency management training. It may be that in some cases parents engage in accommodation of symptoms that inadvertently reinforce anxiety.

Kendall (1990) reported that when family members are not included in treatment of pediatric anxiety disorders, one-third to one-half of patients continue to have clinically significant anxiety problems after treatment. However, studies directly comparing treatments with and without family involvement have yielded mixed results (Barrett et al., 1996; Cobham et al., 1998; Barrett et al., 1998; Mendlowitz et al., 1999; Nauta et al., 2003, Spence et al., 2000; Wood, Piacentini, Southam-Gerow, Chu, & Sigman, 2006). Of seven studies to date, two demonstrated no difference between treatments with and without parent involvement (Nauta et al., 2003; Spence et al., 2000), four found

increased benefits of parents involvement on only some outcome measures (Barrett et al., 1996; Cobham et al., 1998; Barrett et al., 1998; Mendlowitz et al., 1999), and only one demonstrated clear benefit of parent involvement on a majority of outcome measures (Wood et al., 2006). Although lack of significant findings may indicate low power for finding differences between active treatments, the majority of these studies do not thoroughly describe the family intervention, and it appears that family components of treatment may vary widely among treatment studies in general. Thus, it is likely that some of the interventions tested have not targeted family variables that have an effect on child anxiety.

In the only study to date demonstrating better outcome on a majority of measures for parent involvement in treatment, Wood et al. (2006) investigated a family-based intervention including modules designed to target “parent intrusiveness” and discouragement of child autonomy. Parental intrusiveness has been described as parent performance of tasks a child should be performing independently (Chorpita & Barlow, 1998; Whaley et al., 1999; Wood et al., 2003), which is similar to some family accommodations described by Calvocoressi et al. (1999). There was a greater decline in anxiety severity for children assigned to the family-based intervention, and 78.9% of those in the family-based intervention remitted diagnostic status, compared with 52.6% in the child treatment condition. However, this study failed to investigate the mechanism of change responsible for the difference between groups, so conclusions about the role of these factors cannot be drawn. In summary, although it has been shown that inclusion of families in treatment can enhance treatment outcome, few studies have found a consistent relationship between specific family variables and

childhood symptom expression or treatment outcome. This discrepancy suggests that there are family variables that influence treatment outcome which have not yet been identified.

### **Aims of the Current Study**

Currently, there is a need to identify family variables that have a role in pediatric anxiety symptom presentation and treatment outcome. Although early research with pediatric and adult OCD has indicated the potential importance of family accommodation, studies have not investigated its role in other pediatric anxiety disorders. Study of this construct is limited by lack of a measure of family accommodation for general pediatric anxiety. The current study aims to develop and validate such a measure, and to collect preliminary data regarding correlates of family accommodation in pediatric anxiety. This study also aims to test for a mediation effect of family accommodation in the relationship between symptom severity and functional impairment, previously reported by Storch et al. (2007b) in a pediatric OCD sample. As well, we will test for family accommodation as a possible mediator of the relationship between parent psychopathology and child symptom severity.

## CHAPTER 2 METHOD

Development of the PAS occurred in three phases.

**Phase 1: Initial scale development.** Items were initially generated from the FAS (Calvocoressi et al., 1999; see Table 1), review of the extant literature, and clinical experience of a writing committee. In addition to the first author, the writing committee was comprised of 5 members representing psychologists and psychiatrists with expertise and interest in pediatric anxiety disorders. Members were Dr. Eric Storch, Ph.D. (University of South Florida), Gary Geffken, Ph.D. (University of Florida), Tanya Murphy, M.D. (University of South Florida), Ayesha Lall, M.D. (University of Florida), and Golda Ginsburg, Ph.D. (Johns Hopkins University).

**Phase 2: Pilot testing.** We initially examined the measure in a sample of 5 children and their caregivers. Based on feedback from these families, we added several items to the PAS to reflect responses of children when accommodation is not provided (i.e. added sad/down and angry/abusive) and altered the response choices to provide more concrete frequency options (i.e. changed response range from “never” to “always” to a new response range of “never” to “11+ times per day”). After making these revisions, we piloted the PAS in a second group of 5 patients and their caregivers. Those families did not have any suggestions for substantive changes to the measure.

**Phase 3: Scale validation.** The final version of the PAS was complete following phases 1 and 2. The PAS, including all items, is included in the appendix. The PAS was designed to be a clinician-rated scale incorporating information from the patient, caregivers, and clinician judgment. It may be administered by a psychologist, psychiatrist, or a trained clinical interviewer. The final PAS contains 16 items, each of

which includes a specific question followed by a series of examples that can be altered by the administering clinician. For example, to assess whether parents facilitate avoidance, the PAS asks “How often in the last week did you help your child avoid things or situations that might make him/her more anxious, such as talking to others, separating from you, or watching the news?” Clinicians are able to substitute known symptoms for the provided examples, tailoring the administration for each family. In addition, the semi-structured format permits follow-up questions as necessary to clarify a response or to probe more carefully around a family routine. Responses are then provided on a 0 (never) to 8 (11+ times per day) scale. Participants, measures, and procedures for validation of the PAS are described below.

### **Participants**

Participants were 59 children ( $n = 27$  male,  $n = 32$  female) and their caretakers. Children ranged in age from 7 to 17 ( $M = 12.59$ ,  $SD = 2.97$ ). Children were primarily Caucasian (91.4%; 3.4% Hispanic, 5.2% Other) and average household income was \$77,633.20 ( $SD = \$43,618.64$ , Median = \$69,000). All children had a principal diagnosis of Generalized Anxiety Disorder (GAD;  $n = 30$ ), Social Phobia (SP;  $n = 19$ ), or Separation Anxiety Disorder (SAD;  $n = 11$ ) according to DSM-IV-TR criteria (American Psychiatric Association, 2000). These disorders were chosen based on evidence that anxiety symptoms are similar in all three disorders (Ginsburg, Riddle, & Davies, 2006) and that these disorders are very frequently combined in treatment studies (Cartwright-Hatton et al., 2004). There were no differences on any study variables based on diagnosis ( $ps > .05$ ).

Inclusion criteria were: (a) principal diagnosis of GAD, SAD, or SP, (b) child age between 6 and 17 years, and (c) parent age above 21 years. Exclusion criteria were (a)

positive diagnosis of psychosis or autism, (b) principal diagnosis other than GAD, SAD, or SP and (c) positive diagnosis in the caregiver of mental retardation, psychosis, or other psychiatric disorders or conditions that would limit their ability to complete measures. In order to maximize generalizability, children with comorbid diagnoses (except psychosis or autism) were included. Comorbid diagnoses, when present, included presence of another anxiety disorder ( $n = 26$ ), Attention Deficit Hyperactivity Disorder (ADHD;  $n = 10$ ), Major Depressive Disorder ( $n = 8$ ), OCD ( $n = 2$ ), Oppositional Defiant Disorder (ODD;  $n = 1$ ), and Tourette's Disorder ( $n = 1$ ).

All children and their caretakers were recruited through one of two outpatient anxiety disorder specialty clinics: one clinic affiliated with the University of Florida (UF) and one clinic affiliated with the University of South Florida (USF). Examination of all study variables by site revealed no significant differences in demographic information, child-report, or parent-report data ( $ps > .05$ ). However, significant differences emerged on the clinician-administered measures: the PAS,  $t(56) = -2.04$ ,  $p < .05$ , and the Pediatric Anxiety Rating Scale (PARS; see Measures section for a full description),  $t(55) = -2.90$ ,  $p < .05$ . It is possible that differences were due to the level of experience of clinical interviewers at the two sites.

### **Clinical Interviewers**

Interviews were conducted by trained clinical interviewers. At the UF site, clinical interviewers included undergraduate level research assistants with prior training in child psychopathology and additional experience with OCD patient populations. At the USF site, clinical interviewers were post-undergraduate level research assistants with experience with OCD patient populations; though these research assistants had more assessment experience with this population. Although there were differences between

sites in the experience of clinicians with the population, use of both sites was necessary for feasibility and recruitment of an adequate sample size. To ensure fidelity across sites, all clinical interviewers were trained to a reliable standard on clinician rated measures through a training workshop, joint interviews, and discussion. More specifically, to complete training, clinical interviewers completed practice administrations using standardized vignettes, observed two administrations of each measure by the first author or another trained clinical interviewer, and completed two practice interviews under supervision. In addition, clinical interviewers attended weekly assessment meetings to promote quality assurance of study assessments.

## **Measures**

### **Clinician Administered**

**Pediatric Anxiety Rating Scale.** The Pediatric Anxiety Rating Scale (PARS; Research Units on Pediatric Pharmacology Anxiety Study Group, 2002) was used to rate the severity of anxiety symptoms, and contains separate symptom checklist and severity rating scales. The symptom checklist contains 50 items assessing presence or absence of anxiety symptoms related to social interactions, separation, generalized anxiety, specific phobias, and physical symptoms. The severity rating scales contain seven items rating severity of anxiety feelings, physical symptoms, avoidance, interference, overall severity, and overall frequency. The PARS has demonstrated inter-rater reliability (ICC = .97), convergent (with the HAM-A and SCARED-P) and divergent validity (with CBCL-Externalizing and CDRS), and sensitivity to treatment effects (Research Units on Pediatric Pharmacology Anxiety Study Group, 2002). In this sample, reliability was adequate at both sites (Cronbach's alpha = .79 at UF and .74 at USF) and inter-rater reliability was good (ICCs ranged from .89 to 1.00 at both sites).

**Pediatric Accommodation Scale.** The PAS, described in the present study, was administered to examine family accommodation of child anxiety symptoms. The PAS contains 16 items and the psychometric properties are detailed in the present investigation.

### **Child Report**

**Child Anxiety Impact Scale-Child Version.** The Child Anxiety Impact Scale-Child version (CAIS-C; Langley, Bergman, McCracken, & Piacentini, 2004) was used to examine functional impairment due to anxiety symptoms. The CAIS-C is a 34-item scale measuring the amount of impairment across domains: school, social activities, home/family activities, and globally. Responses are given on a four point scale from “not at all” to “very much”. The CAIS-C has demonstrated good psychometric properties, including internal consistency (Cronbach’s alpha = 0.73 to 0.87), convergent validity (with CBCL-Internalizing and Child Depression Inventory), and divergent validity (CBCL-Externalizing; Langley et al., 2004). Reliability was excellent in this sample (Cronbach’s alpha = .92).

**Children’s Depression Inventory.** The Children’s Depression Inventory (CDI; Kovacs, 1992) is a 27-item child-report measure that assesses the presence and severity of cognitive, affective, or behavioral symptoms of depression during the previous two weeks. Widely used, the CDI has adequate internal consistency ( $r = .71-.89$ ) and differentiates between depressed and non-depressed youth (Carlson & Cantwell, 1979). In addition, the CDI has good test-retest reliability ( $r = .87$ ) and construct validity as determined by high correlations with similar depression measures and through factor analysis (Kovacs, 1992; Craighead et al., 1998). Reliability was excellent in this sample (Cronbach’s alpha = .91).

**Multidimensional Anxiety Scale for Children.** The Multidimensional Anxiety Scale for Children (MASC; March et al., 1997) is a 39-item child-report index that assesses symptoms of general, social, and separation anxiety. Good psychometrics have been reported, including construct validity through confirmatory factor analysis, internal consistency (Cronbach's alpha = .87), convergent validity (with the STAI-C and RCMAS), and divergent validity (with the BDI, CDRS, and HAM-D; Ryn et al., 2006; March et al., 1997, 1999). Reliability was good in this sample (Cronbach's alpha = .89).

### **Parent Report**

**Beck Depression Inventory-Second Edition.** Based on the original Beck Depression Inventory (Beck et al., 1961), the Beck Depression Inventory-Second Edition (BDI-II; Beck et al., 1996) is a 21-item self-report measure of depressive symptoms experienced during the past week. Extensive reliability and validity data have been reported in clinical and non-clinical samples, including evidence of construct validity using confirmatory factor analysis, high internal consistency (Cronbach's alpha = .90), convergent validity with other measures of depression, and divergent validity with measures of anxiety (Beck et al., 1996; Whisman et al., 2000; Storch et al., 2004). Reliability was good in this sample (Cronbach's alpha = .87).

**Child Anxiety Impact Scale-Parent Version.** The Child Anxiety Impact Scale-Parent version (CAIS-P; Langley, Bergman, McCracken, & Piacentini, 2004) was used to examine functional impairment due to anxiety symptoms. The CAIS-P is a 34-item scale measuring the amount of impairment across domains: school, social activities, home/family activities, and globally. Responses are given on a four point scale from "not at all" to "very much". The CAIS-P has demonstrated good psychometric properties, including internal consistency (Cronbach's alpha = 0.73 to 0.87), convergent

validity (with CBCL-Internalizing and Child Depression Inventory), and divergent validity (CBCL-Externalizing; Langley et al., 2004). Reliability was good in this sample (Cronbach's alpha = .89).

**Child Behavior Checklist.** The Child Behavior Checklist (CBCL; Achenbach, 1991) is a parent-rated questionnaire assessing the frequency and intensity of behavioral and emotional problems exhibited by the child in the past six months. The CBCL consists of eight syndrome scales (withdrawn, somatic complaints, anxious/depressed, social problems, thought problems, attention problems, delinquent behavior, and aggressive behavior) and two composite scales (externalizing and internalizing problems). Overall, the CBCL has excellent psychometric properties including one-week test-retest reliability, adequate internal consistency (Cronbach's alpha = .62-.92), and construct validity (e.g., strong associations with subscales of other measures that assess similar constructs; Achenbach, 1991). Reliability was good in this sample (Cronbach's alpha = .93 externalizing and .95 internalizing).

**Family Adaptability and Cohesion Evaluation Scale – fourth edition (FACES-IV).** This questionnaire is designed to assess family cohesion and family flexibility (Olsen, Gorall, and Tiesel, 2007). Within cohesion, the FACES assesses both overall Cohesion and unbalanced cohesion in the form of Enmeshment and Disengagement. Within flexibility, the FACES assesses both overall Flexibility and unbalanced flexibility in the form of Chaos and Rigidity. The FACES consists of 62 statements about family characteristics, asking family members to indicate agreement on a 5-point scale from 1 (strongly disagree) to 5 (strongly agree). The FACES-IV has demonstrated good psychometric properties, including reliability (Cronbach's alpha ranging from .77 to .87)

and convergent validity (with Self-Report Family Inventory, Family Satisfaction Scale, and Family Assessment Device). Reliability for the subscales was good in this sample, with Cronbach's alpha ranging from .78 (rigid) to .94 (cohesion).

**State-Trait Anxiety Inventory - Trait version (STAI-T).** The State-Trait Anxiety Inventory - Trait version (STAI-T; Spielberger, 1983) is a 20-item scale rated on a 4-point Likert scale that measures the tendency of people to experience general anxiety and view stressful situations as threatening. The widely-used STAI-T has been found to have good internal consistency (Cronbach's alpha = .89 to .91), convergent validity (with the Penn State Worry Questionnaire and Worry Domains Questionnaire) and divergent validity (with Lykken's Activity Questionnaire), and can discriminate between patients with anxiety and non-clinical controls (Bieling et al., 1998; Spielberger, 1983, 1989). Reliability was excellent in the present sample (Cronbach's alpha = .92).

### **Procedures**

The University of Florida and University of South Florida institutional review boards provided appropriate human subjects ethical approval of this project. A waiver of informed consent was granted so that the first author or another study representative could identify qualifying participants by diagnosis. Diagnoses were made by the patient's clinician (a licensed child clinical psychologist or board-certified child psychiatrist), through clinical interview, behavioral observation, parent-report, child-report, and all available information. The first author verified diagnosis through review of medical records and through information collected during clinician interview. Additionally, the first author discussed evidence for diagnoses of participants with the diagnosing clinician. The first author and clinician shared 100% diagnostic agreement about all participants. Following verification of diagnosis, clinicians of qualifying

patients were then notified of patient eligibility. The clinician subsequently informed a study representative when parents and patients expressed interest in participating. Thereafter, the study representative fully described the study and obtained informed parental consent and child assent. Participants then completed study measures in a private setting. First, the clinical interviewer administered the PARS and the PAS, following which children and their caregivers completed self-report measures. Children completed the MASC, CDI, and CAIS-C while parents completed the CBCL, CAIS-P, FACES-III, BDI-II, and STAI-T. Although some very young children were not able to complete self-report measures alone, inclusion of young children in the current study is important to determine the role of family accommodation for children of all ages. This is particularly critical given a lack of any treatment research in very young children (Verdeli, Mufson, Lee, & Keith, 2006). Therefore, the clinical interviewer verbally administered child-report measures to children who were unable to complete them alone ( $n = 3$ ). Completion of all measures took between 60 and 90 minutes.

## CHAPTER 3 RESULTS

### Evaluation of Scale Items

Means, standard deviations, and item-total correlations for each of the 16 items on the PAS are presented in Table 1. Examination of skewness and kurtosis values (see Table 1) reveal that at the UF site, 7 items were positively kurtotic and 15 items were positively skewed such that items indicating less accommodation were most frequently endorsed. At the USF site, 8 items were positively kurtotic and 11 items were positively skewed. Percentage of parents endorsing the item (i.e. indicating that it occurred at least once in the preceding week) is also reported in Table 1. The most frequently endorsed items include item 1/providing reassurance (UF = 70.1%, USF = 90.5%), item 2/allowing children to avoid anxiety provoking stimuli (UF = 63.2%, USF = 71.4%), and item 12/parents becoming distressed when providing accommodation (UF = 55.3%, USF = 75.2%). The least frequently endorsed items include item 5/parents changing their work schedule (UF = 36.8%, USF = 19.0%), item 9/changing child social activities (UF = 13.2%, USF = 38.1%), and item 11/changing the family schedule (UF = 34.2%, USF = 23.8%). Examination of item-total correlations revealed scores ranging from .79 to .84 at the UF site, and from .09 to .67 at the USF site. Low item-total correlations (< .3) may be accounted for by some items that were susceptible to influence of severity rather than frequency. For example, allowing a child to sleep with parents nightly may earn a rating of “8” (11+ times per day) because it is a level of accommodation that the rater deemed not adequately captured by a rating of “4” (1 time per day). Note that this was not a standardized instruction, and thus, ratings that might be influenced by severity were made based on individual judgment and not provided uniformly.

Table 3-1. PAS item characteristics by site

Item	<i>M</i> ( <i>SD</i> )	Item-total ( <i>r</i> )	Skewness	Kurtosis	% Endorsing	Inter-rater Reliability (ICC) <sup>a</sup>
1. Reassurance	2.41(2.11)	.80	0.28	-1.21	71.1	.99
	4.48(2.58)	.43	-0.22	-.088	90.5	1.00
2. Avoidance	1.76(1.88)	.80	0.80*	-0.43	63.2	1.00
	2.33(2.24)	.48	0.83	0.21	71.4	1.00
3. Parent social change	0.24(0.60)	.82	2.41*	4.65*	15.8	.78
	0.81(0.93)	.61	0.83	-0.29	52.4	1.00
4. Parent routine change	1.54(1.88)	.80	1.07*	0.39	50.0	.99
	1.05(1.83)	.67	1.66*	1.60*	33.3	1.00
5. Parent work change	0.81(1.35)	.81	1.42*	0.65	36.8	1.00
	0.81(2.04)	-.37	2.78*	7.75*	19.0	1.00
6. Parent leisure change	0.81(2.00)	.80	2.98*	8.51*	23.7	1.00
	0.91(1.58)	.45	1.66*	1.69*	33.3	.33
7. Child responsibility change	1.27(1.66)	.81	1.31*	0.87	50.0	.94
	1.71(2.45)	.55	1.20*	0.36*	42.9	.36
8. Child school change	0.43(0.83)	.81	2.29*	5.58*	31.6	.88
	2.10(2.84)	.58	1.31*	0.50	52.4	1.00
9. Child social change	0.16(0.44)	.81	2.92*	8.59*	13.2	.93
	0.95(1.91)	.20	2.93*	9.52*	38.1	.79
10. Child sleep change	1.41(2.01)	.84	1.23*	1.09	42.1	.99
	1.71(2.24)	.09	1.25*	1.32	47.6	1.00
11. Family schedule change	0.73(1.12)	.80	1.24*	-0.05	34.2	1.00
	0.57(1.16)	.40	2.01*	3.20*	23.8	1.00
12. Parent distress	1.43(2.08)	.79	1.64*	2.03*	55.3	.84
	1.86(1.59)	.49	0.67	-0.33	76.2	1.00
13. Child distress/anxiety	1.54(1.77)	.80	0.94*	-0.19	56.8	1.00
	1.86(1.80)	.43	0.52	-1.15	66.7	1.00
14. Child oppositional/defiant	1.27(1.68)	.79	1.05*	-0.27	50.0	.95
	1.33(2.29)	.44	1.76*	2.49*	33.3	1.00
15. Child angry/abusive	0.89(1.51)	.79	1.78*	2.59*	39.5	.93
	1.23(1.82)	.63	1.12*	-0.24	42.9	1.00

Table 3-1. Continued

Item	<i>M</i> ( <i>SD</i> )	Item-total ( <i>r</i> )	Skewness	Kurtosis	% Endorsing	Inter-rater Reliability (ICC) <sup>a</sup>
16. Child sad/down	1.03(1.42)	.80	1.76*	3.34*	47.4	.80
	1.43(1.57)	.36	1.27*	0.96	66.7	1.00

<sup>a</sup>n = 21(UF), n = 7 (USF), \*p <.05. Data are presented by site, with line 1 = UF (n = 38), line 2 = USF (n = 21). Responses to the PAS are provided on a 0 (never) to 8 (11+ times per day) scale based on the frequency the behavior occurred in the preceding week.

Total scores on the PAS ranged from 0 to 49 ( $M = 17.73$ ,  $SD = 13.22$ ) at UF and from 6 to 54 at USF ( $M = 25.19$ ,  $SD = 15.37$ ), with Shapiro-Wilk tests of normality indicating significantly non-normal distribution of scores at both sites ( $ps < .05$ ). Examination of skewness and kurtosis values for the PAS indicated significant positive skewness (Skewness =  $.749$ ,  $SD = .389$ ) and absence of kurtosis (Kurtosis =  $-.333$ ,  $SD = .778$ ). This finding is similar to that of Calvocoressi et al. (1999), who reported positively skewed total scores on the FAS for OCD.

### **Reliability**

Reliability statistics were calculated separately for each site. Cronbach's alpha was good at both sites (UF =  $.81$  and USF =  $.78$ ). Inter-rater reliability was assessed by two live, independent raters who were blind to the ratings of the other. Inter-rater reliability was available for a portion of the sample ( $n = 27$  of 59), based on the availability of raters during measure administration. Feasibility did not permit two raters to be available for all administrations of the PAS. Intraclass correlation coefficients were calculated for each item (see Table 1) and ranged from  $.78$  to  $1.0$  at the UF site ( $n = 20$ ) and from  $.33$  to  $1.0$  at the USF site ( $n = 7$ ).

### **Convergent and Discriminant Validity**

Given that the distribution of scores on the PAS was significantly positively skewed, square root transformation was applied to total PAS scores. Square root transformation is an approach that normalizes positively skewed data and is a conservative transformation relative to other approaches (e.g., logarithmic transformation, inverse transformation). Following square root transformation, Shapiro Wilk tests of normality indicated that the assumption of an underlying normal distribution could be maintained ( $p > .05$ ). As well, examination of individual skewness scores

indicated that square root transformed PAS scores were not significantly skewed (Skewness =  $-.23$ ,  $SD = .31$ ). In subsequent analyses, where PAS scores are reported they reflect the square root transformation unless otherwise noted.

PAS total scores were examined by site for evidence of convergent and discriminant validity using Pearson's correlations (see Table 2). To correct for the risk of making a Type I error through multiple analyses, significance was set at  $p < .01$ . Given the small sample size in the current study, particularly when examining site differences, Bonferroni correction was not used to avoid the risk of Type II error. UF site. As expected, the PAS correlated significantly with parent-rated impairment (CAIS-P;  $r = .46$ ,  $p < .01$ ). It did not correlate significantly with child-rated symptoms of depression (CDI;  $r = -.05$ ,  $p > .01$ ). Fisher's  $r$  to  $z$  comparison test shows that the PAS is more strongly correlated with the CAIS-P than with the CDI, providing some evidence for convergent and divergent validity ( $z = 2.22$ ,  $p < .05$ ). Contrary to expectations, the PAS did not correlate significantly with other similar constructs such as child-rated anxiety symptoms (MASC;  $r = .20$ ,  $p > .01$ ), overall anxiety symptoms (PARS;  $r = .25$ ,  $p > .01$ ), child rated impairment (CAIS-C;  $r = .17$ ,  $p > .01$ ), or internalizing symptoms (CBCL-Internalizing;  $r = .15$ ,  $p > .01$ ). USF site. As expected, the PAS correlated significantly with overall anxiety symptoms (PARS;  $r = .59$ ,  $p < .01$ ), child-rated anxiety symptoms (MASC;  $.58$ ,  $p < .01$ ), and internalizing symptoms (CBCL-Internalizing;  $r = .58$ ,  $p < .01$ ). Contrary to expectations, the PAS did not correlate significantly with either child-rated or parent-rated impairment (CAIS-C;  $r = .40$ ,  $p > .01$ ; CAIS-P;  $r = .44$ ,  $p > .01$ ). As well, the PAS correlated significantly with child-rated depression, a theoretically distinct construct (CDI;  $r = .68$ ,  $p < .01$ ).

Table 3-2. Pearson correlations among study variables

	PAS <sup>a</sup>	PARS	CAISP	CAISC	CDI	MASC	CBCL- -Int	CBCL- -Ext	BDI-II	STAI- T	Cohes	Flex	Disen	Enme	Rigid	Chao
PAS	--	.25	.46*	.17	-.05	.20	.15	.26	.37	.23	-.12	-.02	.00	.36	.28	.15
		.59*	.44	.40	.68**	.58*	.58*	.52	.57*	.67**	-.53	-.56*	.13	.49	.15	.48
PARS		--	.37	.53**	.39	.56**	.29	.10	-.03	.24	.05	.09	-.15	-.01	.04	-.08
			.28	.35	.49	.50	.33	.32	.31	.49	-.41	-.25	.23	.34	.04	.44
CAISP			--	.38	.23	.40	.43*	.26	.17	.26	-.18	-.23	.10	.39	.18	.09
				.48	.38	.41	.44	.59*	.31	.49	-.41	-.40	.16	.32	.27	.41
CAISC				--	.47*	.69**	.53**	.03	-.11	.12	-.11	-.03	.00	.25	-.03	.18
					.71**	.49	.64*	.39	.26	.36	-.20	-.43	.16	.32	.17	.40
CDI					--	.62**	.50**	.08	-.20	.01	-.25	-.03	.03	-.08	-.23	.09
						.66*	.81**	.56	.35	.57	-.63*	-.68**	.28	.18	.05	.61*
MASC						--	.43	-.08	-.10	.36	-.22	-.13	.10	.17	-.11	.27
							.40	.31	.49	.56*	-.60*	-.76**	.41	.35	-.01	.72**
CBCL- Int							--	.46*	.01	.09	-.27	.09	.15	.42	.03	.21
								.52	.54	.68*	-.38	-.43	.08	.24	.15	.52
CBCL- Ext								--	.16	.17	-.15	.04	.12	.11	.19	.12
									.29	.43	-.48	-.34	.07	.47	.14	.50
BDI-II									--	.71**	-.40	-.49*	.51**	.36	-.02	.44*
										.87**	-.43	-.37	.19	.46	-.22	.61**
STAI-T										--	-.36	-.55**	.47*	.31	.01	.45*
											-.50	-.45	.20	.52	-.16	.69**
Cohes											--	.64**	-.70**	-.52**	.20	-.59**
												.76**	-.65**	-.54	.11	-.51
Flex												--	-.54**	-.33	.27	-.44*
													-.45	-.38	.03	-.64**
Disen													--	.41*	-.16	.67**
														.48	.01	.27
Enme														--	.18	.39
															.31	.50
Rigid															--	-.26
																-.03
Chao																--

\*p<.01, \*\*p<.003 (.05/16 = .003), <sup>a</sup>PAS scores were square-root transformed. Data are presented by site, with line 1 = UF (n = 38), line 2 = USF (n = 21). PAS = Pediatric Accommodation Scale, PARS = Pediatric Anxiety Rating Scale, CAISP = Child Anxiety Impact Scale (Parent-rated),

CAISC = Child Anxiety Impact Scale (Child-rated), CDI = Child Depression Inventory, MASC = Multidimensional Anxiety Scale for Children, CBCL-Int = Child Behavior Checklist-Internalizing scale, CBCL-Ext = Child Behavior Checklist-Externalizing scale, BDI-II = Beck Depression Inventory Second Edition, STAI-T = State-Trait Anxiety Inventory-Trait scale, Cohes = Family Adaptability and Cohesion Scale-Cohesion subscale, Flex = Family Adaptability and Cohesion Scale-Flexibility subscale, Disen = Family Adaptability and Cohesion Scale-Disengaged subscale, Enme = Family Adaptability and Cohesion Scale-Enmeshed subscale, Rigid = Family Adaptability and Cohesion Scale-Rigid subscale, Chao = Family Adaptability and Cohesion Scale-Chaotic subscale.

The PAS was not significantly correlated with externalizing symptoms (CBCL-Externalizing,  $r = .52, p > .01$ ), although the size of the correlation was large. Fisher's  $r$  to  $z$  comparison tests do not show that theoretically similar constructs show a significantly stronger relationship to the PAS compared with those that are theoretically dissimilar ( $ps > .05$ ).

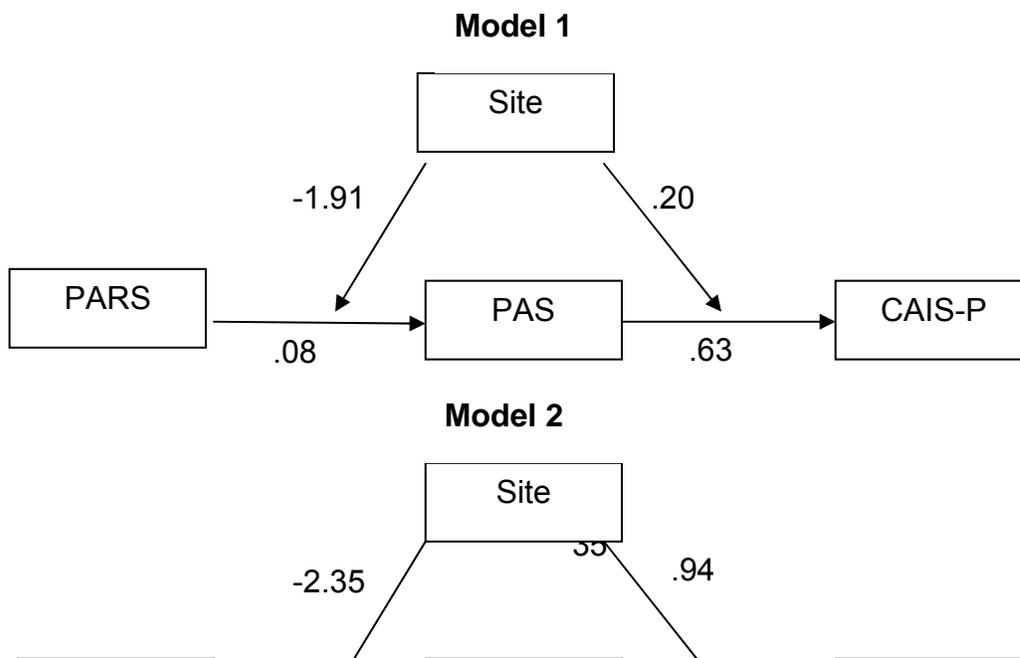
### **Exploratory Analysis of Family Accommodation Construct**

Pearson's correlations were conducted to explore relationships of the PAS with constructs of interest (see Table 2). UF Site. Contrary to expectations, data from the UF site revealed that the PAS was not significantly related to any measures of parent psychopathology or family functioning (see Table 2). USF Site. As expected, the PAS was significantly positively related to parent symptoms of depression (BDI-II;  $.57, p < .01$ ) and anxiety (STAI-T;  $r = .66, p < .01$ ). The PAS was negatively related to family flexibility (FACES-Flexibility;  $r = -.56$ ). Inconsistent with previous findings, the PAS was not significantly related to family cohesion (FACES-Cohesion;  $r = -.53$ ), although the size of the correlation was large and approached significance. Again, different findings between the two sites are likely due to the difference in skill of clinical interviewers administering both the PAS and the PARS.

### **Mediation Analyses**

This study aimed to test a mediation model in which family accommodation mediates the relationship between anxiety symptom severity and functional impairment, as reported by Storch et al. (2007b). As well, we proposed a second mediation model in which family accommodation mediates the relationship between parent psychopathology and anxiety symptom severity. However, given the site differences in the PAS data, we tested a series of models in which site moderates the mediation effect

(see Figure 1). All models included site as a moderator and used bootstrapping ( $n = 5000$ ), as other techniques (i.e. Sobel's test) may result in unstable estimates when sample sizes are small. Models were analyzed in SPSS using the macro provided by Preacher, Rucker, and Hayes (2007). Model 1. This model tested PAS as a mediator of the relationship between symptom severity (PARS) and parent-rated functional impairment (CAIS-P). Results indicated nonsignificant indirect effects at both UF ( $B = .04$ ,  $z = 1.31$ ,  $p > .05$ ) and USF ( $B = .11$ ,  $z = 1.06$ ,  $p > .05$ ). Model 2. This model tested PAS as a mediator of the relationship between symptom severity (PARS) and child-rated functional impairment (CAIS-C). Results indicated nonsignificant indirect effects at both UF ( $B = .01$ ,  $z = .26$ ,  $p > .05$ ) and at USF ( $B = .15$ ,  $z = .94$ ,  $p > .05$ ). Model 3. This model tested PAS as a mediator of the relationship between parent depressive symptoms (BDI-II) and symptom severity (PARS). Results indicated nonsignificant indirect effects at both UF ( $B = .09$ ,  $z = 1.07$ ,  $p > .05$ ) and USF ( $B = .13$ ,  $z = .92$ ,  $p > .05$ ). Model 4. This model tested PAS as a mediator of the relationship between parent anxiety symptoms (STAI-T) and symptom severity (PARS). Results indicated nonsignificant indirect effects at both UF ( $B = .03$ ,  $z = .87$ ,  $p > .05$ ) and at USF ( $B = .12$ ,  $z = 1.06$ ,  $p > .05$ ).



## CHAPTER 4 DISCUSSION

The current study investigated the reliability and validity of the PAS in a sample of children with GAD, SAD, and SP and is the first investigation of the family accommodation construct in this population. Data were collected from two anxiety-disorder specialty clinics, and results showed a significant difference in PAS scores based on site. Notably, the two sites showed significant differences on both clinician-rated measures. These results may have been influenced by the interviewer's level of training and experience with an anxiety disorders population. Although we made every effort to standardize clinical interviewer training, those at the USF site had prior specialty assessment experience with an OCD population that may have benefited administration of the PAS. It may be that capturing family accommodation requires careful probing around symptoms and family activities. For example, a parent who initially denies changing his/her work schedule but previously reported changing the child's school schedule might be asked about the details of the family routine when the child is not in school (e.g., "Earlier you told me that you had to take Mary to school late on Tuesday. Did you get to work on time that day?"). Therefore, results of the present investigation may indicate the importance of clinician experience with an anxiety population when administering this measure. However, we did not measure clinical interviewer experience and therefore cannot be certain that this is the cause of the site differences.

Overall, the PAS showed good internal consistency and inter-rater reliability across two sites. Inter-rater reliability was low on two items at the USF site, but this was likely due to the small number of participants ( $n = 7$ ) for whom two raters were available

at that site. As well, verbal indication that some clinical interviewers incorporated severity into ratings, while some did not, may have contributed to low inter-rater reliability. Evidence for convergent validity was mixed, with the PAS showing a significant, positive relationship with other measures of anxiety symptoms, anxiety related impairment, and internalizing symptoms. Results at the UF site indicated that the PAS did not correlate significantly with a measure of child-rated depression, which supports divergent validity, but results from the USF site show a strong relationship with this measure. Given that there were no significant differences in depressive symptoms or comorbidity between sites, the difference may be related to the relationship between accommodation and depression at each site or possibly to differential ratings of interviewers at each site.

Examination of individual items on the PAS revealed that item-total correlations ranged from .79 to .84 at the UF site and from .09 to .67 at the USF site. Items with low item total correlations ( $< .3$ ) at USF were item 9 (changing the child's social activities) and item 10 (changing the child's sleep routine). One discrepancy among items that may explain this is the susceptibility of some items to severity of accommodation. For example, for a child that sleeps with parents nightly, some interviewers provided a rating of "11+ times per day" because a rating of "1 time per day" does not adequately capture the seriousness of the accommodation. In this case, although clinical interviewers were not trained to incorporate severity in ratings of accommodation, severity of the behavior interfered with the frequency rating. If some items partially reflect severity, which may be a separate construct, those items may not be as closely related to the scale. Additionally, it is possible that this interference occurred to a greater degree at the USF

site if clinical interviewers, who may have probed more closely than those at the UF site, relied more heavily on clinical judgment rather than parent report. However, given that we did not measure clinician judgment, we cannot draw this conclusion with certainty and it is possible that future analysis of the PAS will identify these items as those that should be removed from the scale. In future studies of the PAS, addition of a severity scale may benefit this measure so that we may separately assess the severity construct.

Further examination of individual items shows that accommodation of anxiety symptoms in the previous week was endorsed by a high percentage of parents. Most commonly, parents reported providing reassurance to their children (UF = 71.1%, USF = 90.5%) and helping their children avoid anxiety-provoking stimuli (UF = 63.2%, USF = 71.4%). Additionally, a large number of parents reported feeling distressed when accommodating their child's symptoms (UF = 55.3%, USF = 76.2%), which suggests that many parents accommodate reluctantly. Over half of parents reported their child's anxiety increasing when accommodation was not provided (UF = 56.8%, USF = 66.7%). Some parents also endorsed oppositional/defiant behavior (UF = 50.0%, USF = 33.3%), angry/abusive behavior (UF = 39.5%, USF = 42.9%), and sad/down behavior (UF = 47.4%, USF = 66.7%) when accommodation was not provided. Endorsement of these items demonstrates that child emotional reaction or behavior is one factor that could maintain parent accommodation of pediatric anxiety symptoms. Least commonly endorsed forms of accommodation were changing parent work schedules (UF = 36.8%, USF = 19.0%) and changing the child's social activities (UF = 13.2%, USF = 38.1%). However, some infrequent forms of accommodation may have high potential for

negative consequences (e.g., parents missing work). Therefore, it is important to continue assessing these behaviors in the context of accommodation. Overall, these percentages suggest that a large number of parents accommodate anxiety symptoms in this population of patients.

In addition to the high number of parents reporting accommodation, results indicated that family accommodation is positively related to both parent-rated functional impairment (UF site) and to clinician-, parent-, and child-rated measures of anxiety symptoms (USF site). These results suggest that the role of accommodation in pediatric anxiety may be similar to its role in an OCD population and that family accommodation may have eventual implications for treatment. However, these results should be interpreted as preliminary given that the present study is complicated by site differences and does not provide information about causality in this relationship (i.e. whether accommodation leads to increased severity/decreased functioning).

Exploratory analyses of the PAS with measures of parent psychopathology revealed that family accommodation was strongly related to both parent symptoms of depression and anxiety (USF site). While previous studies have shown inconsistent findings regarding the relationship of parent psychopathology to child anxiety symptoms, our results suggest that parents with higher levels of symptoms engage in more accommodation of child symptoms. As well, exploratory analyses of the PAS with measures of family functioning revealed an association with family flexibility (USF site), indicating that higher frequency of accommodation is associated with lower levels of flexibility. As well, the relationship of the PAS to family cohesion suggested that frequent accommodation is related to low levels of family cohesion, but this relationship

only approached statistical significance (USF site). This finding is contrary to previous reports suggesting high cohesion is linked to higher symptom severity (Poleg-Popko & Dar, 2001) but supports treatment research suggesting that high cohesion is related to improved outcomes (Victor et al., 2007). Positive relationships with other family constructs in our sample (i.e. Enmeshment and Chaos) were large but did not achieve statistical significance. Future investigations of the PAS should explore relationships with family constructs in a larger sample. However, these results suggest that families that are less flexible and cohesive may need additional support to target accommodation that could interfere with CBT treatment. Additionally, families in which parents are experiencing symptoms of anxiety and depression may also need targeted intervention to facilitate reduced accommodation.

Finally, the present investigation aimed to test several mediation models that were moderated by site. We hypothesized that family accommodation mediates the relationship between parent psychopathology and child anxiety symptoms. However, results did not support mediation models based on either parent anxiety or depressive symptoms. We also hypothesized that family accommodation mediates the relationship between symptom severity and functional impairment, similar to the role of family accommodation in OCD (Storch et al., 2007b). However, results did not support the mediation model for either parent or child reported functional impairment. It may be that family accommodation does not have the same relationship to symptom severity and functional impairment in this anxiety population compared with the mediation effect found for patients with OCD. One possible explanation is that patients with OCD may have very visible symptoms (i.e. compulsions) that both contribute to impairment and

draw accommodation. However, it is also likely that the present investigation was underpowered to detect mediation effects. It will be important to test family accommodation as a possible mediator in these relationships in future investigations with a larger sample.

Although this study offers promising preliminary data for the development of the PAS, its limitations should be noted. As noted previously, the sample size limits our ability to draw conclusions from the data. As well, the site differences related to clinical interviewer ratings limited our ability to generalize results across settings and further reduced sample size given the need to conduct many analyses separately. However, given that our site differences may have been related to clinical interviewer experience, direct examination of interviewer experience as a variable that influences the validity of this and other clinician-administered scales may be warranted. Finally, several items on the PAS showed low item-total correlations, perhaps due to some clinical interviewers incorporating severity into ratings. The PAS may benefit from inclusion of a severity scale for this reason, and a severity scale may also contribute to overall understanding of the family accommodation construct and its relationship to other symptom and treatment variables.

Overall, the present study is the first to investigate family accommodation in a sample of children with GAD, SP, and SAD. Results show that a large percentage of parents provide accommodation, particularly when providing reassurance and allowing children to avoid anxiety-provoking stimuli. The PAS shows good preliminary psychometric properties, including internal consistency, inter-rater reliability, and some evidence of convergent validity. However, differences related to clinical interviewer

ratings and inability to rate severity of accommodation suggest that the PAS should be revised and re-administered in a second sample. Beyond re-administration of the PAS in a second sample, future studies should examine the role of family accommodation in CBT, including its ability to predict treatment outcome and whether addressing family accommodation in treatment is a mechanism of change. The current study may also have implications for clinicians and researchers wishing to identify families who are likely to accommodate prior to beginning treatment, as low family cohesion and flexibility are related to high levels of accommodation. Studies should continue to examine family variables related to accommodation in order to aid in identification of these families.

APPENDIX A  
PEDIATRIC ACCOMMODATION SCALE

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**Pediatric Accommodation Scale (PAS)**

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**Note:** This measure is designed to be administered by a clinician or trained interviewer. Responses should be chosen based on clinician judgment of responses. Each item contains examples that may be substituted with a child's specific symptoms. After each item, the clinician may ask follow-up questions to clarify or to probe more closely for accommodation.

**Clinician States:** This questionnaire asks about different ways that you have dealt with your child's anxiety, such as reassuring your child when he/she is anxious, rearranging your child's schedule, and allowing your child to avoid certain things. These questions are asking about things you have done during the **past week**, so please answer keeping only the **past week** in mind.

**In the past week, how often...**

1. Did you reassure your child about his/her fears, for example, fears that something bad would happen him/her, something bad would happen to you, or fear that others may be thinking bad things about him/her?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

2. Did you help your child to avoid things or situations that might make him/her more

anxious such as talking to others, separating from you, or watching the news?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

3. Have you avoided doing things such as going out to a social event or being with people because your child might get nervous or scared?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

4. Have you modified your routine in any way to reduce your child's anxiety, for example, spending less time with other people or getting up early to send your child to school because of your child's symptoms?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

5. Have you modified your work schedule because of your child's symptoms, such as going to work late because your child refuses to go to school or taking days off because your child is frequently feeling sick?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

6. Have you modified your social leisure activities or hobbies because of your child's symptoms, for example, staying home when he/she is distressed or spending less time with friends because he/she is worried?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

7. Have you modified your child's responsibilities because of his/her symptoms, such as

completing chores for him/her or reducing difficulty of his/her schoolwork?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

8. Have you modified your child's school schedule because of his/her symptoms, such as allowing him/her to miss school, go to school late, or leave school early because he/she is worried or frequently ill?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

9. Have you changed your child's social or leisure activities as a result of his/her symptoms, such as picking your child up early from peer gatherings or withdrawing him/her from sports teams of other social organizations?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

10. Have you changed your child's sleep or bedtime routine because of his/her symptoms, such as checking under beds or in closets or allowing your child to sleep in a room that is not his/her bedroom?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

11. Have you modified the schedule of other family members, such as siblings, because of your child's symptoms, such as decreasing family member's activities or spending less time with other family members?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

12. Did you become upset, stressed, or distressed when you help your child cope with anxiety in unhealthy ways (e.g., allowing him/her to miss school, rearranging your schedule so your child can be with you, or constantly providing reassurance)?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

13. Has your child become more distressed or anxious when you have not provided assistance during times of anxiety, such as providing reassurance or allowing him/her to avoid social activities or school?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

14. Has your child become oppositional or defiant when you have not provided assistance, such as refusing to obey or throwing a tantrum?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

15. Has your child become angry or abusive when you have not provided assistance, such as saying hurtful things, being destructive, or physically hurting someone?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

16. Has your child become sad or down when you have not provided assistance, such as becoming tearful or withdrawing from you or others?

0 = Never	3 = 4-6 times per week	6 = 4-6 times per day
1 = 1 time per week	4 = 1 time per day	7 = 7-10 times per day
2 = 2-3 times per week	5 = 2-3 times per day	8 = 11+ times per day

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