PREDICTORS OF FAMILY ACCOMMODATION ACROSS FEAR-BASED DISORDERS

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ABSTRACT

Lillian Reuman: Predictors of family accommodation across fear-based disorders
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Fear-based disorders (FBDs) are associated with significant caregiver burden and family
distress. Specifically, symptom accommodation is ubiquitous in families with relatives affected
by FBDs, yet no study to date has examined potential psychological predictors of symptom
accommodation across diagnoses and relatives. The current study examined psychological
predictors (e.g., empathic concern) of symptom accommodation among co-residing relatives of
individuals diagnosed with FBDs. Participants (n = 49) completed a series of clinical interviews
via phone and an online self-report battery between November 2014 and October 2015. Study
hypotheses were partially supported, as results showed that accommodation occurred to similar
degrees across relatives with various relationships and FBDs. Further, empathic concern and
expressed emotion emerged as marginally significant predictors of symptom accommodation.
Study findings, limitations, and future directions are discussed.
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LIST OF ABBREVIATIONS

AS  Anxiety Sensitivity
EA  Experiential Avoidance
EE  Expressed Emotion
ER  Emotion Regulation
FBD Fear-Based Disorder
OCD Obsessive Compulsive Disorder
INTRODUCTION

Anxiety is fundamentally an adaptive reaction to the perception of threat, and anxiety control strategies, such as avoidance and checking for safety, are warranted when actual threat exists. Yet, overestimates of threat (i.e., the perception that threat exists when it objectively does not) result in a self-perpetuating vicious cycle in which avoidance and safety behaviors serve to prevent the self-correction of the overestimates. Such chronic fear and anxiety can lead to deleterious outcomes including extreme psychological distress and impairment in important areas of functioning. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), anxiety disorders are characterized by excessive fear and related behavioral disturbances (American Psychiatric Association, 2013). Although the focus of the anxiety may differ across conditions (e.g., social situations for individuals with social phobia), all anxiety disorders involve extreme arousal due to fear, and accompanying avoidance behaviors.

Until recently, obsessive-compulsive disorder (OCD) was classified as an anxiety disorder; however, it is now categorized as the flagship disorder among the newly formed “obsessive-compulsive and related disorders” chapter in the DSM-5. OCD is characterized by unwanted, intrusive thoughts and accompanying repetitive compulsions, or rituals. For example, an individual with intrusive thoughts about hurting a loved one may avoid spending time with this relative or repeatedly seek reassurance to ensure that they have not caused any harm.

Anxiety disorders and OCD alike entail recurrent catastrophic thoughts, the experience of fear, avoidance behaviors, and safety-seeking behaviors. Accordingly, in the current study, I refer to
anxiety disorders and OCD jointly as “fear-based disorders,” (FBDs) given the overlap in how these conditions are conceptualized (Barlow, 2000).

Across FBDs, certain (“disorder specific”) stimuli (e.g., heights in specific phobia, intrusive thoughts in OCD) provoke fear and anticipatory anxiety. These fears are maintained by exaggerated beliefs regarding the perceived probability and severity of danger associated with the stimuli (e.g., “I will embarrass myself if I speak up, and it will be awful”). Furthermore, individuals with FBDs engage in avoidance and safety behaviors (e.g., checking in OCD, anti-anxiety medication use in panic disorder) that serve to control or reduce anxiety and fear in the short-term, but that prevent the disconfirmation of exaggerated probability and severity estimates in the long-term, and thus maintain the fear (e.g., Clark, 1999). This conceptualization, which is fairly specific to the FBDs, has empirical support and forms the basis for effective psychological (cognitive-behavioral) treatment (Abramowitz & Deacon, 2005).

Individuals with FBDs also experience significant functional impairment (e.g., occupational functioning), increased burden, and decreased quality of life (e.g., perceptions of social relationships, physical health) relative to the general population (Eisen et al., 2006; Storch et al., 2014). Extensive rituals and avoidance of feared triggers (e.g., objects, memories, places, people) not only are mentally exhausting, but also limit the extent to which individuals are open to new experiences. Furthermore, FBDs exact high personal and economic (direct and indirect) costs (e.g., lost productivity; DuPont et al., 1996).

Although typically conceptualized and treated from the individual’s perspective, FBDs often occur in an interpersonal context, such as within families. The relationship between anxiety disorders and family functioning is bidirectional; impairment due to FBDs affects the family unit as relatives are not only impacted by their loved one’s symptomatology, but also drawn into
various avoidance behaviors and ritualistic routines. Research with OCD patients, for example, shows that symptom severity is associated with greater levels of caregiver burden and family distress (Storch et al., 2009; Ramos-Cerqueira, Torres, Torresan, Negreiros, & Vitorino, 2008). The burden is pervasive and negatively affects various domains including physical and emotional intimacy and family functioning (Senaratne, Van Ameringen, Mancini, & Patterson, 2010). Arguments and hostility over the seeming illogic of a person’s fears (e.g., contamination, being alone) may increase overall relationship distress, leading to aggravated anxiety and poorer treatment outcome (Van Noppen, Rasmussen, Eisen, & McCartney, 1991). Conversely, decreases in symptom accommodation are associated with better treatment outcome (Merlo, Lehmkuhl, Geffken, & Storch, 2009; Piacentini et al., 2011). Thus, it is essential to understand the interpersonal context when conceptualizing FBDs and developing and implementing empirically-based interventions.

In an effort to reduce their own distress or show care and concern for a loved one, family members may engage in behaviors to immediately relieve their loved one’s anxiety, even if it means going out of their way and sacrificing the family routine. For example, a spouse might speak for a socially anxious loved one to help him avoid the fear of potential embarrassment; a sibling might engage in washing and cleaning behaviors to assuage her loved one’s contamination fears. This anxiety-reduction behavior on behalf of the family member – called symptom accommodation – is described in many different psychological paradigms (e.g., “symptom-system fit” from a family-systems perspective; Rohrbaugh, Shoham, & Racioppo, 2002), and it is very common among family members of individuals with FBDs (Amir, Freshman, & Foa, 2000; Calvocoressi et al., 1995; Stewart et al., 2008). Although accommodation, as with other forms of avoidance and safety-seeking behaviors, relieves fear in
the short term, it perpetuates the cycle of anxiety by preventing the disconfirmation of exaggerated beliefs and predictions of feared outcomes (Salkovskis, 1996). Moreover, frequent accommodation might lead to increased relationship distress as the accommodating individual becomes resentful; having the overall effect of exacerbating anxiety and FBD symptoms. Focused on the short-term anxiety reducing effects, however, family members often do not recognize that accommodating behaviors reinforce FBD symptoms in the long-run. Thus, the behavior pattern persists despite the burden and negative impact on relationship and family functioning.

Clinical observations suggest that accommodation is ubiquitous in families affected by FBDs, yet to date, the empirical research has primarily focused on OCD samples with little work examining this phenomenon in other FBDs. Calvocoressi and colleagues (1995, 1999) developed a scale to assess family accommodation and accompanying distress in OCD and found that 88% of family members reported accommodating their partner’s or child’s OCD symptoms despite recognizing that such accommodation is unreasonable. An adult OCD sample indicated that 100% of partners accommodated their loved ones’ compulsive and avoidance behaviors (Boeding et al., 2013), and that accommodation was associated not only with greater symptom severity and impairment, but also with decreased relationship functioning (i.e., satisfaction).

Findings from studies with pediatric OCD samples mirror those from adult samples: family accommodation is positively associated with the child’s functional impairment and increased accommodation is associated with externalizing and internalizing behavior problems in children (Storch et al., 2007).

A study of accommodation in a sample of children with different anxiety disorders (Lebowitz et al., 2013) found that accommodation among parents was highly prevalent and
associated with separation anxiety in the youth. Over 97% of parents endorsed accommodation behaviors (participation in symptoms and modification of the family routine), and over 70% reported resulting distress from accommodating their children’s anxiety. The majority (85.3%) reported negative consequences (e.g., child became angry or abusive) of not accommodating their child’s anxious behaviors. Furthermore, accommodation is positively associated with parental distress (Storch et al., 2009) and with anxiety and depression in relatives of adults with OCD (Amir, Freshman, & Foa, 2000).

Although the literature to date has established an association between accommodation and increased severity and caregiver burden in OCD, little research has examined predictors of accommodation behavior across FBDs. Understanding the possible predictors of accommodation is important as it could help clinicians to better anticipate and address this maladaptive, yet highly prevalent, phenomenon. Given the conceptual overlaps across the FBDs, (Abramowitz & Deacon, 2005) there is good reason to assume that accommodation and its predictors are transdiagnostic processes across the FBDs (Abramowitz & Deacon, 2005; Baucom, Stanton, & Epstein, 2003). Accordingly, the aim of the present study is to elucidate conceptually relevant psychological factors within co-residing relatives (caregiver-variables) that might predict their accommodation of a loved one’s FBD symptoms.

**Possible Predictors of Family Accommodation**

The available literature on interpersonal processes and on FBDs suggests a number of factors that might predict symptom accommodation. One reason relatives (i.e., partners and parents) might accommodate symptoms of FBDs is to avoid or reduce their own distress about their relative’s struggle with FBDs. Accordingly, the relatives’ degree of trait anxiety,
depressive symptoms, anxiety sensitivity, emotion regulation, experiential avoidance, and expressed emotion might be predictors of accommodation. A relative might also accommodate to express care and concern for the affected individual. To this end, empathy might also serve as a predictor. In addition to these emotional and psychological factors, relatives might accommodate for practical reasons (i.e., “I will miss work if I don’t speed this along”), lack of knowledge (i.e., “I didn’t know any better”), or poor consideration of future, long-term consequences. This study, however, will focus on the potential emotional and psychological (rather than logistical) predictors of accommodation reviewed next.

**Trait anxiety and depressive symptoms.** Findings from studies of parental accommodation among families of children with FBDs have found that parental anxiety is predictive of accommodation behaviors (Lebowitz, Panza, Su, & Bloch, 2012; Flessner et al., 2011). Amir, Freshman, and Foa (2000) also found that levels of anxiety and depression in relatives was related to behaviors associated with accommodation (e.g., critical comments to patients, degree of modification of routine activities, and patients’ reactions when a relative refused to assist in the patients’ rituals). Perhaps relatives with elevated trait anxiety and depressive symptoms (which may collectively be referred to as “general psychological distress”) engage in accommodation to quell their own distress (in this case related to a loved one’s suffering).

**Anxiety sensitivity.** Anxiety sensitivity (AS; Reiss & McNally, 1985) refers to the fear of anxiety-related bodily sensations based on the belief that such sensations are dangerous (e.g., “when my heart beats rapidly, I fear I am having a heart attack”). AS is conceptually distinguishable from trait anxiety: the former represents a specific tendency to respond fearfully to symptoms of anxiety, whereas the latter refers to the general tendency to respond fearfully to
stressors (McNally, 1989). AS is a multidimensional construct composed of physical (e.g., fear of a racing heart), social (e.g., fear of trembling in front of others), and cognitive (e.g., fear of racing thoughts) factors. Moreover, research suggests that AS is elevated across the FBDs (Taylor, Koch, & McNally, 1992; Deacon & Abramowitz, 2006) and plays a role in the development and maintenance of these problems (e.g., panic attacks; McNally, 1994; Taylor, 1999; OCD; Wheaton et al., 2012b).

Previous studies have examined the relationship of relatives’ and patients’ AS. For example, paternal anxiety sensitivity was positively related to anxiety disorders in offspring (East, Berman, & Stoppelbein, 2007) and parent AS predicted child AS (Tsao et al., 2005). Drake and Kearney (2008) posited that parents might provide feedback that enhances child anxiety and avoidance (Dadds, Barrett, Rapee, & Ryan, 1996) or inadvertently model anxiety-based reactions for their children. More recently, Francis (2014) revealed that parent reports of their child’s anxiety symptoms were significantly related to parental AS and child’s self reported AS, suggesting that AS is related to parent’s perceptions of their child’s anxiety. Although no research has examined the relationship between a relative’s AS and his or her accommodation of a loved one’s FBD symptoms, the data reviewed above (i.e., Francis, 2014) lead to the hypothesis that a close relative’s AS would predict greater accommodation of a loved one’s FBD symptoms.

**Emotion regulation.** The degree to which a relative responds to symptoms of FBDs with accommodation may also depend on the degree to which he or she controls his or her own emotions and reacts to a loved one’s symptoms. As such, another possible predictor of caretaker accommodation behavior is emotion regulation (ER), which refers to the effective management of one’s own emotional responses (i.e., lack of emotional awareness, nonacceptance of emotional...
responses, impulse control difficulties, lack of emotional clarity). Although the focus of the current study is not the relative’s own psychopathology, research suggests that relatives’ own beliefs about the importance of controlling emotions affect the ways in which they interact with other family members (Gottman, Katz, & Hooven, 1997). In situations where a loved one’s fear-based symptoms merit a response, difficulties in ER could impact a relative’s ability to inhibit accommodation behaviors as they may experience difficulties controlling impulsive emotions stemming from mounting caregiver burden. Although ER has not been examined in relation to accommodation, findings from studies relating to psychopathology, parenting, and the family context lead to the hypothesis that ER would be related to maladaptive behaviors, such as accommodation.

**Experiential avoidance.** Experiential avoidance (EA) refers to an individual’s attempts to suppress unwanted internal experiences (i.e., emotions, thoughts) and deliberate efforts to escape from such experiences (Hayes, Strosahl, & Wilson, 1999). EA is strongly correlated with measures of general psychopathology (Hayes et al., 2004), and anxiety more specifically (Roemer et al., 2005). Furthermore, studies have suggested that EA is a psychological vulnerability for anxiety pathology (Kashdan et al., 2006). EA may serve as a short-term self-protective strategy to prevent unwanted distress and manage emotional expression. Although not previously examined in the context of family accommodation, EA may be particularly relevant with regards to the caregiver’s experience of burden and distress evoked by a relative’s FBD symptoms, and thus predict greater accommodation.

**Expressed emotion.** Another possible predictor is expressed emotion (EE), a construct that relates to how much hostility (i.e., dislike and rejection of the patient), emotional over-involvement (i.e., overprotective attitude), and criticism (e.g., critical remarks) one family
member exhibits when describing another family member with psychopathology. Families of patients with FBDs show high levels of criticism, over-involvement and hostility (Hibbs et al., 1993; Shanmugiah, Varghese, & Khanna, 2002). Specifically, components of over-involvement, which include intrusion (unsolicited advice), excessive self-sacrifice, and exaggerated personal emotional response, are of interest in relation to symptom accommodation. Intrusion may be evidence of the relative’s belief that their loved once can’t “make it on their own” and, therefore, needs to be taken care of, via symptom accommodation. As such, relatives may self-sacrifice (i.e., alter the family routine and put their loved ones’ needs first) in order to demonstrate care and concern. Results from a recent naturalistic, longitudinal study found that families of patients who did not remit over the course of a year reported higher levels of accommodation and EE at the baseline compared to those who remitted (Cherian, Pandian, Bada Math, Kandavel, & Janardhan Reddy, 2014). This finding emphasizes the family’s potential role in maintaining the disorder via accommodation and supports the hypothesis that high EE (i.e., over-involvement) would be associated with greater accommodation of FBD symptoms as relatives take part in symptoms associated with FBDs such as checking.

**Empathy.** Empathy refers to the capacity for taking another person’s perspective and sharing a congruent emotional reaction (Davis, 1983). Empathy is a multidimensional construct comprised of both cognitive (i.e., perspective-taking) and emotional (i.e., visceral reactions) components. Relatives with higher levels of trait empathy might also have a strong emotional reaction to their partner or child’s experiences with anxiety. Higher levels of empathy may also contribute to “helping-behaviors” due to increased levels of concern. Ironically, therefore, empathy might lead relatives to engage in accommodation behaviors to demonstrate care or concern. Indeed, Caporino and colleagues (2012) found evidence that parents who were highly
empathic, and less likely to consider the future consequences of accommodation, accommodated more than parents who scored low on measures of empathy.

Although a few studies have examined the relationship between a family member’s clinical characteristics (e.g., anxiety, depression) and his or her accommodation of a loved one’s FBD symptoms, no studies have examined the previously discussed constructs in combination as predictors of accommodation across the various FBDs. Moreover, almost all previous research has focused on accommodation behaviors by either parents or spouses, and no work has directly examined whether the patterns of predictors of accommodation differ between types of relatives. Accordingly, additional work is needed to better understand such associations given their close relevance to long-term outcomes and potential for intervening with this process. Accordingly, the present study was designed to build on the existing literature by examining a more comprehensive group of conceptually relevant constructs (symptoms, behavioral, and cognitive factors) as predictors of accommodation among various relatives (caregivers; i.e., parents and partners) of individuals with various FBDs. Given that accommodation is a widespread phenomenon, it is important to characterize relatives who accommodate in order to better develop interventions to target such treatment-interfering behaviors. I hypothesized that accommodation levels would not differ significantly across the FBDs and relatives. I also hypothesized that the aforementioned constructs would jointly predict family accommodation on the part of caregivers.
METHOD

Participants

Although 63 individuals completed study measures, several potential participants were excluded given that their relative’s FBD was not diagnosed by a doctoral level mental health professional \( (n = 12) \) or that they were the sibling of a relative with a FBD \( (n = 2) \). Ultimately, the study sample included 49 individuals (i.e., partner or parent) with relatives suffering from a FBD. Twenty two participants were parents \( (n_{mother} = 20; 40.8\%) \), and 27 were partners \( (n_{wife} = 15; 30.6\%) \) of the FBD sufferer. Participant age ranged from 23 to 73 \( (M_{age} = 45.04, SD = 11.60) \), the majority \( (81.6\%; n = 40) \) were married, and on average, participants had resided with their relative for 12.62 years \( (SD = 10.53) \). The sample was predominately female \( (n = 35; 71.4\%) \) and Caucasian \( (n = 44; 89.8\%) \). Participants were well educated; over 48.9\% had a masters or graduate-level degree (i.e., Ph.D., M.D., J.D.). The majority \( (55.2\%) \) of participants reported a combined family income less than $99,000.

Fourteen \( (28.6\%) \) participants self-reported a clinical diagnosis (i.e., depression) and 34 \( (69.4\%) \) had received treatment for or education about FBDs. Education included a broad range of activities, ranging from reading a self-help book to receiving a formal education in the context of a social work degree. Treatment ranged from attending a child/partner’s therapy session to receiving a formal series of cognitive-behaviorally based sessions.

Participants reported that their relatives had the following diagnoses: 25 \( (51\%) \) had GAD, 7 \( (14.3\%) \) had OCD, 3 \( (6.1\%) \) had social anxiety disorder, and 14 \( (28.6\%) \) had multiple FBD diagnoses (i.e., separation anxiety disorder and a specific phobia). Nine \( (18.4\%) \) of relatives also
had a comorbid non-FBD diagnosis (i.e., ADHD, depression). The majority of relatives ($n = 47; 95.9\%$) had received (past or current) at least one type of treatment [i.e., medication ($n = 9; 18.4\%$), therapy ($n = 8; 16.3\%$), or both ($n = 30; 61.2\%$)] for their FBD during their lifetime.

**Procedure**

The UNC Institutional Review Board approved all study measures and procedures. Participants were recruited via therapist referrals, brochures, flyers, mass emails, and professional organizations’ listservs. Interested individuals ($n = 63$) were screened over the telephone to assess eligibility criteria; callers who appeared eligible were informed of the study’s purpose and offered an opportunity to ask questions. After providing verbal consent to participate, participants answered a series of questions designed to determine (as best as possible) whether their relative met criteria for an FBD diagnosis (i.e., “When was your relative diagnosed with a FBD?”). Next, participants provided information about any treatment/medication their relative received for their FBD. They also answered questions regarding their own treatment history for psychological disorders and indicated the extent of formal education (e.g., took a class, read a book, formal therapy) they had received about anxiety disorders. Lastly, participants completed the Family Accommodation Scale-Anxiety (Lebowitz et al., 2013) to assess the extent to which they engaged in various accommodation behaviors (over the past week).

Upon finishing the phone interview, participants completed an online battery of demographic and self-report measures (as described below) using a secure link via the Qualtrics survey platform. On average, participants spent 30.67 minutes ($SD = 18.33$) completing the measures. Upon completing these measures, participants were debriefed and thanked for their participation. Participants completed the study between November 2014 and October 2015.
Measures

The *Family Accommodation Scale – Anxiety* (FAS-A; Lebowitz et al., 2013) is a 9-item interview measure designed to assess the degree to which family members accommodate a patient’s FBD symptoms. Items (e.g., “Have you modified your leisure activities because of your [relative’s] anxiety?”) are rated on a five-point Likert Scale from 0 (*Never*) to 4 (*Daily*). The FAS-A displays good internal consistency and convergent and discriminant validity. The FAS-A showed good internal consistency ($\alpha = .87$) in the current sample.

The 21-item *Depression Anxiety Stress Scales* (DASS-21; Lovibond & Lovibond, 1995) is a self-report measure designed to assess severity of depression, anxiety, and stress over the past week. Participants rate seven items (e.g., “I felt that life was meaningless”) of each subscale on a four-point Likert scale ranging from 0 (*Never*) to 3 (*Most of the time*). The DASS-21 exhibits excellent reliability and adequate convergent and discriminant validity. The DASS-Depression subscale was used to measure depressive symptoms in the current sample and exhibited good internal consistency ($\alpha = .86$).

The *State-Trait Anxiety Inventory* (STAI; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) is a 40-item inventory that measures state and trait anxiety. It is often used as a measure of caregiver distress. Sample items measuring state and trait anxiety include “I feel at ease” and “I am a steady person,” respectively. Respondents answer items on a four-point Likert scale from 1 (*Not at all*) to 4 (*Very much so*). Higher scores indicate higher levels of anxiety. Evidence suggests that is a valid scale and sensitive predictor of caregiver distress over time (Elliot, Shewchuk, & Richards, 2001). The STAI-Trait and STAI-State subscales exhibited excellent internal consistency ($\alpha = .92$ and .95, respectively) in the current sample.
The Anxiety Sensitivity Index – 3 (ASI-3; Taylor et al., 2007) is an 18-item version of the original ASI (Reiss, Peterson, Gursky, & McNally, 1986) that measures beliefs about the feared consequences of symptoms associated with anxious arousal (e.g., “It scares me when I become short of breath”). Respondents indicate their agreement with each item from 0 (Very Little) to 4 (Very Much), with total scores ranging from 0 to 72. The ASI-3 contains three empirically established subscales relating to fears of social concerns, fears of physical symptoms, and fears of cognitive dyscontrol. The measure exhibits excellent psychometric properties (reliability and validity). In the current sample, internal consistency estimates for the total and subscale scores ranged from acceptable to good (αs = .72 - .85).

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36-item measure designed to assess multiple aspects (i.e., lack of emotional clarity) of emotional dysregulation. Sample items include, “When I’m upset, I acknowledge my emotions” and “When I’m upset, I lose control over my behaviors.” Items are rated on a five-point Likert scale ranging from 1 (Almost never) to 5 (Almost always). The measure exhibits high internal consistency, good test–retest reliability, and adequate construct and predictive validity, and the current sample was no exception (α = .94).

The Acceptance and Action Questionnaire (AAQ-II; Bond et al., 2011) is a seven-item measure of experiential avoidance and psychological inflexibility. Items on the AAQ assess unwillingness to experience certain private events (“e.g., “I’m afraid of my feelings”), the desire to control the form/frequency of private events, and the inability to take action in the face of negative private events. Participants respond to items using a seven-point Likert scale ranging from 1 (Never true) to 7 (Always). The psychometric properties (i.e., sound factor structure and
good reliability) of this scale have been well-established in clinical and non-clinical samples. Internal consistency for the current sample was good ($\alpha = .87$).

The *Family Attitude Scale* (FAS; Kavanagh et al., 1997) is a 30-item self-report instrument designed to measure EE. Sample items include “I wish he were not here” and “I lose my temper with him.” Items are rated on a five-point Likert scale from 0 (*Never*) to 4 (*Every day*). It is a reliable and valid measure of relationship stress and expressed anger that can be completed by any informant. Internal consistency for the current sample was excellent ($\alpha = .96$).

The *Interpersonal Reactivity Index* (IRI; Davis, 1983) is a measure of dispositional empathy that contains four subscales, each addressing a separate domain of empathy. The current study focused on two seven-item scales: the perspective taking (PT) scale, which reflects the cognitive component of empathy and measures one’s tendency to adopt the psychological viewpoint of others (“I sometimes try to understand my friends better by imagining how things look from their perspective”) and the empathic concern (EC) scale, which reflects the affective component of empathy and assesses the tendency to experience feelings of compassion for others (“I often have tender, concerned feelings for people less fortunate than me”). Participants respond to items using a 5-point Likert scale ranging from 1 (*Does not describe me very well*) to 5 (*Describes me very well*). The IRI showed good internal consistency ($\alpha = .80$) in the current sample.

**Data Analytic Strategy**

Data analyses in SPSS proceeded as follows: First, mean scores on all measures were examined, tests of equivalence and independent-samples t-tests were conducted to examine possible differences between relatives (i.e., parent vs. partner), and one-way ANOVAs were conducted to examine possible differences across FBD diagnoses. Additionally, an independent
samples equivalence test was conducted using the Weber-Popova Independent Samples Equivalence Procedure (Weber & Popova, 2012) to demonstrate equivalence (rather than lack of an effect; i.e., statistical support for the null hypothesis) in levels of accommodation between relatives. Second, zero-order correlations among the identified predictors of accommodation were performed to inspect for possible multicollinearity (i.e., $rs > .80$). Zero-order correlations were also computed between the FAS-A and the hypothesized predictors of accommodation. Third, a multiple linear regression was performed to examine the extent to which the aforementioned constructs predicted accommodation across FBDs. All variables were entered simultaneously into the regression model as there was no theoretical basis to support the use of hierarchical regression. Regression diagnostics (i.e., variance inflation factor and tolerance) were examined to ensure that multicollinearity was within acceptable levels.
RESULTS

Descriptive Statistics

Table 1 displays the means, standard deviations, ranges, skewness, and kurtosis for all study variables. Given that the DASS-Depression scores were positively skewed and leptokurtic, DASS-Depression scores were log-transformed, and the log-transformed scores were used in subsequent analyses. As can be seen in Table 1, participants endorsed mild levels of depression (DASS-D) and trait anxiety (STAI-Trait). Mean scores and standard deviations on the FAS-A were comparable to the standardization sample (Lebowitz et al., 2013). Mean scores on the ASI-3, AAQ-II, and DERS were comparable to community norms (Wheaton et al., 2012a, Bond et al., 2011, Gratz & Roemer, 2004). Levels of expressed emotion (FAS) in the current sample were comparable to community norms and lower than average levels reported by relatives of individuals with psychotic disorders or conduct disorders (Kavanagh et al., 2008).

Accommodation was ubiquitous; all participants endorsed engaging in accommodation behaviors to some degree over the past month. Results from a one-way ANOVA with FAS-A as the dependent variable and relationship to the relative as the independent variable revealed that there was no significant difference between partners ($M = 15.85; SD = 8.49$) and parents ($M = 19.36; SD = 7.83$) in how frequently they accommodate, $F(1,47)= 2.22, ns, MSE = 67.29, \eta^2 = 0.05$. Further, results from the Weber-Popova Independent Samples Equivalence Procedure demonstrated equivalence in levels of accommodation between the two groups of relatives (partners vs. parents), $t(47) = 1.49, \Delta = .30, p_{eq} = .40$ (two-tailed). Results from a one-way ANOVA with FAS-A as the dependent variable and relative’s FBD diagnosis as the independent
variable revealed no significant difference in levels of accommodation based on FBD diagnosis, $F(3,45)= .73$, $ns$ (and the homoscedasticity assumption was met).

**Correlational Analyses**

Table 2 displays two-tailed, zero-order bivariate (Pearson) correlations among all study measures. To control for multiple correlations with the FAS-A, the dependent variable, a Bonferroni corrected critical $\alpha = .007 (.05/7)$ was used. Correlations ranged in magnitude from -.06 to .83. Symptom accommodation was most strongly associated with expressed emotion and empathic concern, although these relationships were not statistically significant. Given their strong association with other study measures, the AAQ-II and STAI-Trait both posed a threat to multicollinearity and were removed from subsequent analyses given that they provide redundant information. Levels of accommodation (measured by the FAS-A) were neither associated with relative age, nor time living together (all $ps > .50$).

**Regression Analyses**

A simultaneous linear regression analysis was conducted with the aforementioned predictors (except for the AAQ-II and STAI-Trait scores) and FAS-A as the dependent variable. Indices of multicollinearity were acceptable for all predictors (all tolerance values $\geq .60$ and all VIF $\leq 1.68$), suggesting a lack of redundancy in model predictors. Simultaneous linear regression statistics for the model are presented in Table 3. The overall regression model accounted for approximately 22% of variance in FAS-A scores, $F(5,41) = 2.32$, $p = .06$, $R^2 = 0.28$. No single measure emerged as a significant unique predictor.
DISCUSSION

Clinical observations and empirical research suggest that accommodation is an omnipresent, conceptually relevant, treatment-interfering behavior performed by loved ones of those with FBDs that is associated with increased symptom severity and caregiver burden (Lebowitz et al., 2013). Little is known, however, about the extent to which various characteristics of the relative performing said accommodation (e.g., empathy) predict the frequency, intensity, and duration of these behaviors. The present study sought to elucidate predictors of accommodation among individuals with relatives diagnosed with a FBD. To my knowledge, this is the first study of accommodation to conceptualize this phenomenon as a transdiagnostic interpersonal maintenance process and to include a sample of both parents and partners – two groups of individuals that play unique yet prominent roles in their loved ones’ FBD.

In support of the first hypothesis that family accommodation would occur at comparable levels across all FBDs and relatives, I found no differences in the degree of symptom accommodation across relatives of those with different FBDs. Although clinical observations suggest that the presentation of accommodation differs between parents and partners – a parent might accommodate based on the belief that “I must ensure that my child is always safe and happy,” while a partner might accommodate in order to demonstrate love and commitment for their loved one – my findings suggest no differences in the frequency with which these different types of relatives engaged in accommodation behavior.
The second hypothesis, that my group of theoretically driven constructs would jointly predict family accommodation, was partially supported. The overall model predicting symptom accommodation accounted for almost a quarter of the variability in accommodation frequency. Although not a trivial amount (i.e., a large effect size), the variance accounted for was not statistically significant. Further, no single construct emerged as a statistically significant unique predictor of accommodation; however, both empathy and expressed emotion showed trends toward significance and thus deserve further study. For example, it is possible that certain subcomponents of expressed emotion (i.e., over involvement) are more strongly related to accommodation than are other subcomponents (i.e., hostility). Symptom accommodation is typically viewed as an overt behavior, therefore a behavioral subcomponent of expressed emotion (i.e., over involvement) may better explain accommodation than an attitudinal subcomponent of expressed emotion (i.e., hostility). Given that it was not possible to separate the components of expressed emotion using the current measure, endorsement of hostility may have suppressed any potential effects of over involvement. With regards to empathy, and given that a portion of the sample endorsed having been educated about FBDs, relatives with higher levels of empathy may have a stronger or more sensitive emotional reaction to their loved one’s FBD symptoms that might contribute toward the urge to accommodate. Additionally, empathy levels may not have a direct effect on accommodation; rather, they may be mediated by a relative’s ability to consider future consequences of accommodation (Caporino et al., 2012).

On average, participants endorsed low levels of depressive symptoms, and there was little variability in depression severity. As such, it is not surprising that depression did not emerge as a significant predictor of accommodation in the current sample. My findings regarding depression did not replicate the findings of Amir, Freshman, and Foa (2000), which suggested that
depression among family members was related to feelings of rejection toward the relative, perceived consequences of not accommodating, and perceived distress of not accommodating. I did not measure feelings of rejection in the study; however, expressed emotion encompasses hostility towards the relative, which was not significantly related to self-reported scores of depression in the current sample. I also did not measure distress or perceived consequences that result from not accommodating, and are therefore unable to conclude whether depression is related to accommodation in dyads where the perceived consequences of accommodation (and potential accompanying distress) are greater.

In the current sample, and in line with previous research (e.g., Helbig-Lang, Rusch, & Lincoln, 2015), decreased emotion regulation was associated with relatives’ increased endorsement of psychopathology (i.e., anxiety) and psychological inflexibility. Yet, emotion regulation was not associated with symptom accommodation. However, lack of emotional clarity (“I have difficulty making sense out of my feelings”), a subcomponent of emotion regulation, was indeed associated with symptom accommodation. Overall, emotion regulation did not emerge as a unique predictor of symptom accommodation, but future research should examine the effect of various subcomponents of emotion regulation may play a role in symptom accommodation.

On average, relatives endorsed mild levels of anxiety sensitivity, and anxiety sensitivity did not uniquely predict symptom accommodation. This finding was neither in line with the study hypotheses, nor with previous research suggesting a familial pattern of anxiety sensitivity (e.g., East, Berman, & Stoppelbein, 2007). Interestingly, follow-up exploratory analyses with data from only the parents of FBD individuals revealed that anxiety sensitivity was significantly correlated with family accommodation (this association was not present among partners, and the
difference in average levels of anxiety sensitivity between parents and partners was not statistically significant. Although a post-hoc finding, this result suggests that anxiety sensitivity may play a unique role in parents’ accommodation.

**Limitations**

A number of limitations of the present study (beyond its cross-sectional design) deserve mention. First, I relied heavily upon self-report. Despite the use of standardized, structured questionnaires with strong psychometric properties, self-report precludes any opportunities for qualitative elaboration and experimenter interaction (i.e., asking questions for clarification). My findings rely upon the strength of the individual measures, and the measures are limited by the items they include. For example, the FAS did not include multiple items about over-involvement, thus it is unclear the extent to which the measurement of expressed emotion is comprehensive. Lack of method variance might also inflate associations among variables. Further, biases, such as social desirability or the Hawthorne effect may have influenced participants’ responding. In order to enhance method variance, future studies regarding relatives’ accommodation may opt to include behavioral measures, such as the Five Minute Speech Sample (Magana et al., 1986), which is used capture a relative’s expressed emotion as observed (via emotions, feelings, and attitudes) in a brief monologue.

Second, self-report measures were administered online, outside of a controlled laboratory environment. Although, the battery of questionnaires included attention checks (i.e., “Please select frequently true for this question”) that all participants passed, it is possible that external distractions were present throughout survey completion.

Third, although participants reported on their relative’s symptoms, the study lacked relatives’ report of their own FBD symptoms. As such, there was no opportunity to corroborate
diagnoses, and there was no gauge of symptom severity and functional impairment (which has been shown to vary systematically with levels of accommodation; Storch et al., 2010). Although I ascertained information about the diagnosis (i.e., date of diagnosis, doctor making the diagnosis), I cannot be certain that the diagnosis was made or reported accurately. Future studies may consider the explicit confirmation of diagnostic status using structured clinical interviews; however, this method generalizes to cases in which a relative is uncooperative or refuses treatment all together in which case patient report would be absent.

Fourth, accommodation is a difficult construct to measure in isolation. Although I was explicitly interested in a sample that was living together in order to better understand ingrained accommodation patterns, family members who have been living together for many years may no longer recognize their behaviors as explicit accommodation. Rather, such behaviors (i.e., avoiding parks where dogs may be present) may be recognized as habit and not as a modification to the family routine.

Fifth, this study focused on participants’ psychological factors (i.e., traits) that may predict accommodation behaviors. Yet, it is likely that various logistical factors also play a role. For families in which both adults work long hours (regardless of combined household income), accommodation may be a more convenient, timely solution rather than allowing a child to complete extensive rituals and or engaging in an argument over the senselessness of one’s rituals with a partner. A lack of knowledge about FBDs and their treatment may also lead family members may also accommodate. Family members may believe that they are helping their relative by relieving short-term distress, yet they are unaware that their actions are functionally identical to rituals. Future studies should account for these variables (i.e., hours worked per
week, number of children in the household). Such data may be obtained via self-report or interview (i.e., Zarit Burden Interview; Zarit, Reever, & Beck-Peterson, 1980).

Lastly, characteristics of the sample may limit the generalizability of the study. For example, the fact that my sample was generally well-educated might have affected the results, as individuals may have had more resources to consult professionals within the University setting or gather empirical information about anxiety disorders. Additionally, the sample may have been subject to a self-selection bias. Specifically, individuals who were most distressed by or involved with their loved one’s FBD may have been more inclined to respond to advertisements about the study and dedicate time for participation than individuals who are not bothered by or involved in their loved one’s FBD. This self-selection bias may result in a sample that reported higher distress levels than the general population of individuals living with a relative with a FBD. Additionally, given that the researchers did not provide financial remuneration, certain prospective participants may have declined to participate if they could not afford to take the time to complete the study (resulting in a sample that had a higher overall SES level or more leisure time).

Although I recruited an adequate sample size according to a-priori power analyses, there is a chance that my null findings were due to low power; perhaps differences in accommodation do exist between FBD diagnoses. Although both parents and partners accommodate to varying degrees, they may do so for varying reasons. For example, parents may feel that it is their obligation to keep their child safe from harm, whereas partners may feel as though they must love their spouse unconditionally.
Future Directions

Although all self-report measures were well-established instruments that exhibited adequate psychometric properties, the nuanced measurement of symptom accommodation may be enhanced by the development of an in-vivo assessment tool. Akin to the FMSS to measure expressed emotion during conversation (described above), observational behavioral coding systems used to assess relationship functioning (e.g., Fischer, Baucom, Kirby, & Bulik, 2015) or emotional over-involvement (e.g., Fredman, Chambless, & Steketee, 2004), and behavioral approach tasks (BATs) used to assess avoidance in relation to contamination concerns (e.g., Goetz, Lee, & Cougle, 2013), a hybrid laboratory paradigm to examine accommodation may enhance understanding of this construct by providing an actual sample of the behavior. Such methods also allow for the direct observation of the construct in question, as well as the simultaneous measure of relevant physical correlates (i.e., heart rate, acoustic properties) during an act of accommodation and related constructs (i.e., distress, burden) pre- and post-accommodation. For example, an in-vivo measure might prompt a parent or partner to describe a recent instance of accommodation while coding the content of their description, the tone of their speech, their heart rate, and their self-reported levels of expressed emotion toward their relative. Alternatively, an in-vivo measure might entail presenting an anxious individual with a novel idiographic or standardized stimulus and observing how the parent or partner behaviorally responds to the situation.

To the extent that the current study findings have implications for clinical practice, the results can be used to develop tailored family interventions for relatives living with a loved one with a FBD. Given that symptom accommodation is associated with FBD symptom severity (Storch et al., 2009) and serves to maintain the FBD, it is important to address accommodation to
adjust or eliminate the behavior in order to reduce distress among individuals with FBDs. Additionally, removing accommodation from a parent or partner’s repertoire may help relatives to enhance their self efficacy (i.e., “I can do this on my own”), regain responsibility with daily chores/commitments, and recognize that feared consequences likely don’t materialize. Furthermore, high levels of expressed emotion among relatives can extend or exacerbate the course of psychiatric illness (e.g., depression and schizophrenia; Butzlaff & Hooley, 1998; Hooley & Teasdale, 1989), and higher levels of empathy could contribute to maladaptive, albeit well-intentioned, behaviors. Accordingly, relatives’ concerns should also be addressed in the context of FBDs. Interventions for accommodation should incorporate treatment modules to specifically address empathy and expressed emotion; additionally, an eventual goal may be to identify which relatives can benefit from an intervention. For example, treatment could include psychoeducation about the role of expressed emotion in their relative’s FBD symptomatology, communication skills training to replace hostile comments with kinder phrases, and practice providing adequate positive reinforcement (rather than criticism) to a relative’s exposure behaviors. Preliminary studies suggest that trainings designed to decrease levels of expressed emotion in parents (e.g., Garcia-Lopez et al., 2014) and caregivers (e.g., Kuipers et al., 2006) can improve outcomes for the family member with a psychiatric diagnosis.

Conclusions

Symptom accommodation is an omnipresent construct that is affected by and affects aspects of individual and interpersonal functioning across all FBDs, regardless of diagnosis or relationship to one’s relative. Researchers should further investigate – via multi-method assessment – the ways in which relative- (i.e., empathy) and patient-level variables (i.e., symptoms) play a role in its development and maintenance. Moreover, these findings should be
used to inform empirically based interventions in order to prevent or extinguish accommodation by all relatives in the context of FBDs across all ages.
### Table 1

*Means and standard deviations on study measures*

<table>
<thead>
<tr>
<th>Measure</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
<th>Skew</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAS</td>
<td>17.43</td>
<td>8.31</td>
<td>4 – 36</td>
<td>.23</td>
<td>-.79</td>
</tr>
<tr>
<td>FAS-Modification</td>
<td>10.71</td>
<td>4.61</td>
<td>2 – 20</td>
<td>.10</td>
<td>-.53</td>
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<tr>
<td>FAS-Participation</td>
<td>6.60</td>
<td>4.26</td>
<td>1 – 16</td>
<td>.41</td>
<td>-.79</td>
</tr>
<tr>
<td>STAI-Trait (Average)</td>
<td>1.74</td>
<td>.52</td>
<td>.85 – 3</td>
<td>.52</td>
<td>-.32</td>
</tr>
<tr>
<td>DASS-21 – Depression</td>
<td>5.40</td>
<td>6.75</td>
<td>0 – 34</td>
<td>2.39</td>
<td>7.29</td>
</tr>
<tr>
<td>ASI-3</td>
<td>11.61</td>
<td>8.17</td>
<td>0 – 44</td>
<td>-.80</td>
<td>.29</td>
</tr>
<tr>
<td>FAS</td>
<td>39.55</td>
<td>19.82</td>
<td>1 – 94</td>
<td>.64</td>
<td>.34</td>
</tr>
<tr>
<td>AAQ-II</td>
<td>16.44</td>
<td>6.50</td>
<td>7 – 32</td>
<td>.64</td>
<td>-.31</td>
</tr>
<tr>
<td>DERS</td>
<td>70.78</td>
<td>20.11</td>
<td>41 – 121</td>
<td>.94</td>
<td>.12</td>
</tr>
<tr>
<td>IRI</td>
<td>64.79</td>
<td>11.44</td>
<td>28 – 87</td>
<td>-.35</td>
<td>1.04</td>
</tr>
<tr>
<td>IRI-PT</td>
<td>19.69</td>
<td>3.88</td>
<td>11 – 28</td>
<td>.04</td>
<td>-.42</td>
</tr>
<tr>
<td>IRI-EC</td>
<td>22.33</td>
<td>4.19</td>
<td>11 – 28</td>
<td>-.92</td>
<td>.59</td>
</tr>
</tbody>
</table>

*Note.* FAS-A = Family Accommodation Scale – Anxiety; STAI = State Trait Anxiety Inventory; DASS-21 = Depression Anxiety Stress Scales-21; ASI-3 = Anxiety Sensitivity Index – 3; FAS = Family Attitude Scale; AAQ-II = Acceptance and Action Questionnaire-II; DERS = Difficulties with Emotion Regulation Scale; IRI = Interpersonal Reactivity Index (PT = Perspective Taking; EC = Empathic Concern).
Table 2
Zero-order correlations among study measures

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<tbody>
<tr>
<td>1. FAS-A</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. STAI – Trait</td>
<td>.24</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. DASS – Depression</td>
<td>.24</td>
<td>.72*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. ASI-3</td>
<td>.09</td>
<td>.32</td>
<td>.28</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. FAS</td>
<td>.36</td>
<td>.39</td>
<td>.38</td>
<td>.11</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. AAQ-II</td>
<td>.22</td>
<td>.79*</td>
<td>.55</td>
<td>.47*</td>
<td>.37</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. DERS</td>
<td>.25</td>
<td>.76*</td>
<td>.52</td>
<td>.29</td>
<td>.42</td>
<td>.83*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>8. IRI</td>
<td>.21</td>
<td>.32</td>
<td>.18</td>
<td>-.06</td>
<td>.11</td>
<td>.29</td>
<td>.27</td>
<td>-</td>
</tr>
<tr>
<td>9. IRI-EC</td>
<td>.37</td>
<td>.25</td>
<td>.26</td>
<td>-.20</td>
<td>.23</td>
<td>.18</td>
<td>.18</td>
<td>.75</td>
</tr>
</tbody>
</table>

Note. FAS-A = Family Accommodation Scale – Anxiety; STAI = State Trait Anxiety Inventory; DASS-21 = Depression Anxiety Stress Scales-21; ASI-3 = Anxiety Sensitivity Index-3; FAS = Family Attitude Scale; AAQ-II = Acceptance and Action Questionnaire-II; DERS = Difficulties with Emotion Regulation Scale; IRI = Interpersonal Reactivity Index (EC = Empathic Concern).

*p ≤ .007 (Bonferroni corrected)
Table 3
Simultaneous Linear Regression Predicting Accommodation (FAS-A)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE_B</th>
<th>β</th>
<th>t</th>
<th>p</th>
<th>spr^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAS</td>
<td>.10</td>
<td>.06</td>
<td>.25</td>
<td>1.60</td>
<td>.12</td>
<td>.05</td>
</tr>
<tr>
<td>IRI-EC</td>
<td>.55</td>
<td>.29</td>
<td>.29</td>
<td>1.96</td>
<td>.06</td>
<td>.07</td>
</tr>
<tr>
<td>DASS-21 - Depression</td>
<td>-.05</td>
<td>1.35</td>
<td>-.01</td>
<td>-.04</td>
<td>.97</td>
<td>&lt; .01</td>
</tr>
<tr>
<td>DERS</td>
<td>.02</td>
<td>.07</td>
<td>.05</td>
<td>.28</td>
<td>.78</td>
<td>&lt; .01</td>
</tr>
<tr>
<td>ASI-3</td>
<td>.13</td>
<td>.16</td>
<td>.13</td>
<td>.83</td>
<td>.41</td>
<td>.01</td>
</tr>
</tbody>
</table>

*Note. FAS = Family Attitude Scale; IRI-EC = Interpersonal Reactivity Index – Empathic Concern Subscale; DASS-21 = Depression Anxiety Stress Scales-21; DERS = Difficulties in Emotion Regulation Scale; ASI-3 = Anxiety Sensitivity Index-3; spr^2 = squared semipartial correlation.*
REFERENCES


