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Development and preliminary psychometric evaluation of a self-rated version of the Family Accommodation Scale for Obsessive-Compulsive Disorder[★]

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Abstract

Family accommodation (FA) in obsessive-compulsive disorder (OCD) refers to family members' or significant others' participation in or facilitation of patients' rituals and/or avoidance. With recent studies pointing to FA as a predictor of poorer treatment outcome, there is heightened interest in developing family-based interventions for OCD aimed at reducing FA. The interviewer-rated Family Accommodation Scale for OCD (FAS-IR) is the gold standard for assessing the types and severity of FA in OCD families. However, the cost of training interviewers and the time required for administration may limit its use in some settings. A valid self-rated version could be administered for research and clinical purposes with minimal burden and has the potential to be more widely used. The present study reports on the development and initial psychometric testing of the Family Accommodation Scale for OCD-Self Rated Version (FAS-SR). The FAS-SR was compared to the FAS-IR in a sample of 41 relatives of individuals with primary OCD, demonstrating excellent internal consistency, strong agreement with the FAS-IR, and expected convergence with criterion measures. Though further study using the self-rated version is needed, these findings suggest that the FAS-SR is a valid measure of FA and a time-saving, less costly alternative to the FAS-IR.

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Keywords

Family accommodation; Family Accommodation Scale; Obsessive compulsive disorder

1. Introduction

Family accommodation (FA) in obsessive-compulsive disorder (OCD) refers to family members' or significant others' participation in or facilitation of patients' rituals and/or avoidance. FA is associated with family burden, maintains and/or facilitates OCD symptoms, and reinforces fear and avoidance behaviors in patients with OCD (Steketee, Van Noppen, Lam, & Shapiro, 1998). Nearly 90% of persons with OCD live with family members who accommodate their symptoms in some significant way (Calvocoressi et al., 1995). Moreover, FA occurs even though over 80% of family members believe that the obsessions and compulsions are unreasonable and 66% do not believe that FA alleviates OCD symptoms (Calvocoressi et al., 1999).

FA is related to poorer patient and family functioning (Calvocoressi et al., 1999; Storch et al., 2007), greater OCD symptom severity (Calvocoressi et al., 1999; Ramos-Cerqueira, Torres, Torresan, Negreiros, & Vitorino, 2008; Stewart et al., 2008; Storch et al., 2007; Van Noppen & Steketee, 2009), and increased relative distress (Albert et al., 2010; Peris et al., 2008). In addition, FA was the family variable with the greatest contribution to the variance in OCD symptom severity in a path analytic model (Van Noppen & Steketee, 2009). Since FA has been identified as a predictor of poorer treatment outcome both in adults (e.g., Amir, Freshman, & Foa, 2000; Ferrao et al., 2006) and children/adolescents (e.g., Storch et al., 2008), there is growing interest by clinical researchers in developing family-based interventions for OCD aimed at reducing FA, emphasizing the need for its valid assessment.

Calvocoressi and colleagues made the first attempt to measure and quantify FA in 1995. These investigators piloted a 13-item interviewer-rated, semi-structured questionnaire for relatives that included nine items that examined the degree to which they engaged in accommodating behaviors, including participating in patient rituals and modifying personal or family routines. The questionnaire also included four exploratory items designed to assess relative's perceptions of the consequences of not accommodating the patient and potential distress associated with FA (Calvocoressi et al., 1995). Based on this preliminary work, Calvocoressi and colleagues (1999) developed the interviewer-rated Family Accommodation Scale for Obsessive-Compulsive Disorder (FAS-IR), an instrument that assesses 12 accommodating behaviors (nine from the original questionnaire plus three new behaviors). The FAS-IR demonstrated excellent inter-rater reliability, high internal consistency of scale items, and good convergent and discriminant validity (Calvocoressi et al., 1999).

Like the 1995 questionnaire, the FAS-IR consists of two sections. The first section requires the administration of an OCD symptom checklist adapted from the Yale-Brown Obsessive-Compulsive Scale (YBOCS; Goodman et al., 1989a, 1989b) to elicit current patient symptoms of which the relative is aware. This provides relatives with the context for the questions on accommodating behaviors that follow, and enables the interviewer to elicit

accommodating behaviors using probes tailored to the specific symptoms reported by the relative. The second section consists of 12 items that each assess a different type of accommodating behavior that the relative may have engaged in during the past week; e.g., providing reassurance regarding OCD symptoms, waiting for the patient to complete rituals, and modifying personal routines because of the patient's OCD symptoms. The interviewer asks the relative about each accommodating behavior and then may probe using examples, based on the patient symptoms the relative identified in the first section. The 12 items are rated on a 0–4 scale and summed to obtain a total FA score.

Though the FAS-IR has been used to assess the types and severity of FA in OCD families in the United States and internationally (e.g., Otero & Rivas, 2007; Gomes et al., 2010), it is limited by common disadvantages of interviewer-rated instruments. First, it is costly to use because interviewer training is required. Second, it takes a significant amount of time to administer (on average 30 to 45 min). Third, it may miss some accommodating behaviors as family members may be reluctant to admit to these behaviors in a face-to-face interview, especially when they see the OCD-related requests as unreasonable. A self (i.e., relative)-rated measure of FA that compares favorably with the clinician-rated instrument would address these disadvantages and, potentially, promote more widespread collection of FA data, furthering research on this important OCD construct.

To date, several investigators have endeavored to assess FA with an abbreviated, self-rated version of the preliminary, pilot-tested interviewer-rated FAS items developed by Calvocoressi et al. (1995). This self-rated measure consists of truncated versions of Calvocoressi and colleagues' 13 interviewer-rated items and is referred to in the literature by various names, including the: "Family Accommodation Scale (FAS)" (e.g., Geffken et al., 2006), "Family Accommodation Questionnaire (FAQ)" (e.g., Amir et al., 2000), and "Family Accommodation Scale-Parent Report (FAS-PR)" (e.g., Storch et al., 2007). The actual interviewer-rated pilot instrument included an OCD symptom checklist and more detailed wording of each item. In addition, the interviewer was instructed to formulate examples based on the symptoms endorsed on the checklist, to help family members identify each type of accommodating behavior. These features are missing from the self-rated version. This self-rated measure also lacks three additional accommodating behaviors included in the finalized version of the FAS-IR (Calvocoressi et al., 1999). Moreover, only nine of the items in this self-rated measure assess accommodating behaviors; the remaining four items explored potential motivations for accommodating the patient's OCD symptoms and potential distress associated with FA. These items were not intended to be included in the total FA score. Nonetheless, some investigators have included these exploratory items in the total FA score (e.g., Storch et al., 2007), while others have not (e.g., Peris et al., 2008), making it difficult to compare results across studies. Another problem with using the truncated 13 items as a self-rated measure of FA is that four of the nine accommodation items (and all four exploratory items) are scored on an interviewer-rated severity scale (mild, moderate, severe, extreme) that is operationally defined in the actual interviewer-rated instrument. Using such a severity scale in a self-rated measure and without these operational definitions is highly problematic as it leaves untrained lay people to make subjective ratings based on however they define these anchor points, so there is no consistency of ratings across respondents. We also note that reliability and validity data

reported by Calvocoressi et al. (1995, 1999) were based on their interviewer-rated instruments and therefore do not reflect the psychometric properties of the self-rated measure.

Recently, two groups independently examined the psychometric properties of the abbreviated 13-item measure. In Albert et al. (2010), the 13 items were clinician-administered to 141 relatives of 97 adult OCD patients. A factor analysis yielded three factors: modification of routines or activities, participation in rituals, and distress associated with accommodation/consequences of not accommodating (the latter factor comprised the four exploratory items that do not directly measure accommodating behaviors). A different factor structure was found by Flessner et al. (2009) who studied the parents of 96 youths with OCD (who self-rated the 13 items). Their two-factor structure included: avoidance of OCD triggers and involvement in compulsions. Three of the four exploratory items measuring consequences of not accommodating the patient loaded on the involvement in compulsions factor; the remaining exploratory item measuring relative distress associated with FA did not load on either of the retained factors. Flessner et al. (2009) also reported good to excellent internal consistency, adequate to good convergent validity, and adequate discriminant validity for the FAS-PR subscales and total scale. Notwithstanding these efforts to assess the psychometric properties of the abbreviated 13-item measure, neither study directly compared it with the gold standard FAS-IR. Moreover, based on our extensive experience interviewing relatives of OCD patients, we are concerned that this self-rated measure, administered in isolation, without a patient OCD symptom list, or examples of accommodating behaviors for the relatives to draw upon, and with most items rated on indicators of severity rather than a more objective measure (e.g., amount of time), is not likely to elicit FA with the sensitivity and specificity of the FAS-IR.

The aim of the present study is to develop and conduct preliminary psychometric testing of a high-quality self-rated version of the FAS-IR (called the FAS-Self-Rated Version (FAS-SR)) that maintains the structure of, and compares favorably with, the FAS-IR. The FAS-SR improves upon prior attempts at a self-rated FAS by including an OCD symptom list, an objectively defined response scale based on frequency of accommodating behaviors (number of days in the past week) for all items, and specific examples to describe the various types of FA. A reliable and valid FAS-SR will allow busy clinicians to efficiently assess FA when planning treatment as a means of identifying patients who would benefit from a family-based cognitive behavioral treatment (CBT) aimed at reducing FA and will enable researchers to measure FA with minimal subject burden. In this report, we examined the new FAS-SR in terms of internal consistency reliability, agreement with the FAS-IR, and convergent validity with criterion measures. We hypothesized that FAS-IR and FAS-SR total scores would be highly correlated. We also hypothesized that, consistent with convergent validity data on the FAS-IR reported in 1999, FAS-SR scores would be moderately correlated with patient OCD symptom severity, poorer patient global functioning, and poorer family global functioning. Additionally, we hypothesized that FAS-SR scores would correlate with distress in relatives.

2. Method

2.1. Instrument description and development

The Family Accommodation Scale for OCD – Self-Rated Version (FAS-SR) (see the Appendix) was created by the authors of this paper, two of whom (BVN, LC) are authors of the original FAS-IR. Though a self-report measure, the FAS-SR maintains a similar structure, response format, and content to the interviewer-rated version. As with the FAS-IR, the first section of the FAS-SR includes an OCD symptom checklist (Goodman et al., 1989a, 1989b); the relative is asked to identify the types of obsessions and compulsions experienced by the patient in the past week (of which the relative is aware). The second section of the FAS-SR asks the relative to draw upon the patient's OCD symptoms endorsed in Section 1 to identify accommodating behaviors in which s/he (the relative) has engaged in the preceding week.

The FAS-SR covers the same types of accommodating behaviors as the FAS-IR. However, in developing a self-rated instrument, we recognized that we would have to compensate for the absence of a trained interviewer who could probe for accommodating behaviors that a relative may not readily identify on his/her own, while excluding relatives' efforts to assist and support the patient that fall outside the scope of our operational definitions of FA. For example, the FAS-IR defined "reassurance" as a form of accommodation when it referred to the relative's responses to the patient's OCD-related concerns; more global reassurance, such as telling the patient that s/he would feel better soon, was not included. Precise assessment and carefully worded items would be needed in the self-rated version to ensure that we were tapping accommodating behaviors with the same sensitivity and specificity as the interviewer-rated measure.

We took several steps in this regard. First, we retained the structure of the original instrument that includes an initial section with a checklist for relatives to identify the patient's OCD symptoms. In our interviewer-rated measures, we have found that asking the relative to list and then reflect on patient symptoms helps identify the ways in which s/he may have responded to or accommodated these symptoms. Second, we increased the clarity of the language for non-clinicians. Third, we reduced the complexity of the items by breaking out some of the behaviors measured by one item in the FAS-IR into several items in the new FAS-SR. For example, the one item in the FAS-IR that measures whether family members facilitated the patient's compulsive behaviors reads: "Were there times in this past week in which your actions made it possible for (name of patient) to complete his/her rituals (without you being directly involved in performing the rituals)? For example, a family member may provide a relative with OCD with things s/he needs to perform rituals or compulsions, such as buying excessive quantities of soap or cleaning products. Other examples include driving the car back home so the relative can check that doors are locked, or creating extra space in the house for the relative's saved items." In the FAS-SR, facilitating compulsions is broken out into two items: (1) "I did things that made it possible for my relative to complete compulsions. Examples: driving back home so my relative can check if the doors are locked; creating extra space in the house for my relative's saved items; and (2) I provided my relative with OCD with items s/he needs to perform rituals or

compulsions. Examples: shopping for excessive quantities of soap or cleaning products for my relative.”

The following FA behaviors are assessed by single items in the FAS-IR but are each assessed by two items in the FAS-SR: (1) providing reassurance regarding OCD symptoms, (2) refraining from saying/doing things because of the patient’s OCD, (3) facilitating compulsions, (4) facilitating avoidance, (5) tolerating odd behaviors/household disruption, and (6) modifying personal routines because of patient symptoms. One FAS-IR item (helping the patient with simple tasks and decisions because of OCD) is assessed by three items in the FAS-SR. The self-rated version that we tested included a total of 20 items, compared to 12 for the FAS-IR. All FAS-SR items are rated on an objectively defined response scale based on frequency of accommodating behaviors (number of days they occurred in the past week): coded as 0=none/never happened, 1=1 day, 2=2–3 day, 3=4–6 day, 4=every day. These anchor points are consistent with those used in the frequency-based items of the FAS-IR.

Five OCD experts provided structured quantitative and qualitative feedback on the FAS-SR items. They completed an expert rating questionnaire in which they were asked to assess: (1) the relevance of each item to the construct of FA on a 5-point scale (1=not at all relevant, 2=slightly relevant, 3=relevant, 4=very relevant, 5=extremely relevant); (2) the representativeness of the pool of items overall to FA on a 6-point scale ranging from strongly disagree to strongly agree; and (3) the clarity of the wording, instructions, and response format on 6-point scales ranging from strongly disagree to strongly agree. A priori, the investigators planned to drop any item from inclusion that received a mean relevance rating of less than 3. Mean relevance ratings for the 20 items ranged from 3.0 to 5.0, demonstrating strong agreement among the experts regarding the relevance of the items. In response to a global item about how representative the 20 items are of FA, the experts all agreed or strongly agreed. The consensus of the experts was that the item wording, instructions, and response format were sufficiently clear for non-clinicians. Based on the findings of this expert review, we retained all 20 FAS-SR items for the data collection phase.

2.2. Participants and procedures

Forty-one adult (age 18 and older) patient/relative pairs participated in this study. Each pair consisted of a patient with a primary diagnosis of DSM-IV OCD and his/her closest family member or significant other (i.e., an individual with whom the patient lives or has substantial contact, at least one hour daily); hereafter referred to as the relative. The patients were recruited from an NIMH-funded naturalistic longitudinal study of OCD described fully elsewhere (Pinto, Mancebo, Eisen, Pagano, & Rasmussen, 2006). Consecutive patients were invited to participate in the current study at their one-year follow-up interview. Interested participants were told that the aim of the study was to investigate family factors in OCD. Patients provided permission and contact information for their closest relative. Both patients and relatives provided informed consent prior to assessment.

Only patients whose primary diagnosis was OCD at the one-year follow-up were included in the study. Patients were evaluated at intake with the Structured Clinical Interview for DSM-

IV Axis I Disorders—Patient version (SCID-I/P) (First, Spitzer, Gibbon, & Williams, 1996) and reassessed at follow-up with the Longitudinal Interval Follow-up Evaluation (LIFE), a semi-structured interview of diagnosis and severity designed for longitudinal studies of psychiatric disorders (Keller et al., 1987). We retained patients who were in partial remission for OCD to provide greater variability in FA and to allow us to examine FA along a continuum of OCD severity. Patients and relatives, assessed separately, completed batteries of clinician-administered and self-rated measures of psychopathology and of individual and family functioning, detailed below. Raters received extensive training on administration of the interviewer-rated instruments. To account for potential systematic bias in the sequence of administration of the FAS-IR and FAS-SR, relatives were randomly assigned to be interviewed with the FAS-IR either two weeks before or two weeks after completion of the FAS-SR (and other self-report measures). We decided on a two-week gap between administrations, as in a study by Federici et al. (2010) that compared self-report and clinician-administered versions of the YBOCS, in order to minimize the degree to which responses to items on one version of the FAS are influenced by responses to items on the other version. Since our major aim was to assess agreement between the FAS-SR and FAS-IR, we were concerned that having relatives complete both measures on the same day or a similar short interval would inflate agreement between the FAS versions and blur the independence of the measures. The FAS-IR interviewer was blind to relatives' responses on the FAS-SR.

2.3. Measures administered only to patients

The *Global Assessment of Functioning (GAF) Scale* (American Psychiatric Association, 2000), is a single interviewer-rated item, from 1 to 100, of overall severity of psychopathology and functional impairment in the worst week of the past month, with higher scores indicating better overall adjustment and higher levels of functioning.

2.4. Measures administered only to relatives

2.4.1. Family Accommodation Scale for OCD – Self-Rated (FAS-SR)—FAS-SR is the new self-rated measure of FA (see description above and the Appendix).

2.4.2. Family Accommodation Scale for OCD – Interviewer-Rated (FAS-IR)—FAS-IR (Calvocoressi et al., 1999) is a clinician-administered interview for relatives of OCD patients and is considered the gold standard measure of FA. The FAS-IR has demonstrated excellent inter-rater and internal consistency reliability, as well as convergent and discriminant validity (Calvocoressi et al., 1999). As described earlier, relatives are asked in the first part of the interview to identify the patient's current OCD symptoms (of which they are aware) from a comprehensive list. In the second section, relatives are asked about their involvement in 12 accommodating behaviors that are rated on a 0–4 scale. Items 1–7 and 9 assess the frequency of particular accommodating behaviors (e.g., providing reassurance) based on the number of days they occurred in the past week: coded as 0=none, 1=1 day, 2=2–3 day, 3=4–6 day, 4=every day. Items 8 and 10–12 assess the degree of other accommodating behaviors (e.g., tolerating odd behaviors/household disruption due to OCD, taking on the patient's responsibilities because of OCD) in the past week: coded as 0=not at

all, 1=mild, 2=moderate, 3=severe, 4=extreme. The 12 items are summed for a total FA score that ranges from 0 to 48, with higher scores indicating greater FA.

2.4.3. Symptom Checklist-90-R (SCL-90-R)—SCL-90-R (Derogatis, 1993) is a self-report inventory designed to screen for a broad range of psychological problems and symptoms of psychopathology. For this study, only the Global Severity Index was used as an index of distress in relatives, with higher scores indicating greater distress.

2.5. Measures administered to both patients and relatives

2.5.1. Yale-Brown Obsessive Compulsive Scale (YBOCS)—YBOCS (Goodman et al., 1989a, 1989b) is an interviewer-administered scale with specific probes and anchors used to quantify the severity of the patient's OCD symptoms in the past week based on time, distress, interference, resistance, and control (five items on obsessions, five items on compulsions; total score range 0–40 with higher scores representing greater severity). Since obsessions are by definition unobservable, relatives were only asked to rate the severity of the patient's compulsions (to the best of their knowledge) using the YBOCS compulsions subscale (five items).

2.5.2. Family Assessment Device (FAD)—FAD (Epstein, Baldwin, & Bishop, 1983) is a self-report scale used to assess healthy and unhealthy family functioning based on the McMaster Model. For this study, we only used the global functioning subscale (12-items), which measures the overall health/pathology of the family. Scores range from 1 to 4; higher scores correspond to poorer functioning.

2.6. Data analysis

The FAS-IR was completed on 37 of the 41 relatives (4 missing). Kappa coefficients were used to rate the level of agreement between relatives' endorsement of patient OCD symptom categories on the FAS-IR and the FAS-SR. Corrected item-total correlations were used to test the association of individual FAS-SR items with the sum of the other items from the scale; items with negative or near zero correlations are considered problematic as they may not be measuring the same construct as the other variables (DeVellis, 2012; Morey, 2003). Item-level frequencies of the FAS-SR were also examined. Cronbach's alpha was used to assess internal consistency among the FAS-SR items. Intraclass correlation coefficient (ICC) was used to measure agreement between the FAS-SR and FAS-IR total scores. Pearson correlation coefficients were used to evaluate convergent validity with criterion measures previously reported for the FAS-IR (YBOCS, GAF, FAD), as well as with an additional measure of distress in relatives (SCL-90-R). Steiger's Z test was used to compare the magnitude of correlations between the self-report and interview versions of the FAS on each of the criterion measures. All tests were two-tailed. To diminish the possibility of type I error, we used a partial alpha correction of $p < .01$ to determine statistical significance. A full Bonferroni correction was not applied given that this approach tends to be overly conservative (Rosner, 1995). We considered p values from $p = .01$ to $.05$ to constitute a trend.

3. Results

3.1. Patient and relative characteristics

The patients (mean age=41.8 years (SD=15.3); 57% female; 56% employed) reported mild-moderate OCD symptom severity on the YBOCS ($M=16.7$; SD 8.9), with 11 patients in partial remission. The mean YBOCS total score for patients with fullcriteria OCD was 21.2 (SD=6.3), indicating moderate severity. Ninety-three percent of the patients were taking medications for OCD, and 32% were receiving individual CBT.

The participating relatives were related to patients as follows: spouse/partner (54%), parent (37%), adult child (5%), sibling (2%), other (2%). The relatives (mean age=51.2 years (SD=13.4); 61% female) reported knowing the OCD-affected individual for an average of 27.6 years (SD=13.4). Seventy-six percent of the relatives were living with the patient. Relatives reported spending an average of 5.9 h per day (SD=4.2) with the patient during the week and 9.5 h per day (SD=5.8) on the weekend.

3.2. Administration of the FAS-SR

The relatives reported completing the FAS-SR in less than 20 min. A subset of relatives was asked about the experience of completing the new measure. The consensus was that the instructions were easy to understand and the wording of items was sufficiently clear.

3.3. Item analysis

Table 1 compares relatives' endorsement of patient OCD symptom categories in the first sections of the FAS-IR and the FAS-SR. There was significant agreement on relatives' endorsement of categories of obsessions across the two FAS versions, including a trend for somatic obsessions, with the exception of harming, sexual, and religious obsessions. Agreement on the sexual obsessions category could not be assessed as no relatives endorsed these symptoms on the FAS-IR (versus two who endorsed it on the FAS-SR). For compulsions, there was significant agreement on all categories, including a trend for ordering/arranging, except counting.

The second section of the FAS-SR includes items that assess the frequency of types of FA. An examination of corrected item-total correlations revealed a low value ($-.01$) for one item ("watched patient do rituals"). Since this item does not appear to be related to the underlying FA construct, it was removed from the scale. Table 2 presents the corrected item-total correlations and item-level frequencies for the 19 retained FAS-SR items. Frequencies are reported as the number of days per week that relatives engaged in each accommodating behavior. Eighty-eight percent of the sample reported engaging in at least one accommodating behavior, and all but two of the FAS-SR items (providing items needed to do compulsions, helping patient with personal (self-care) tasks) were endorsed by at least 10% of relatives. The most commonly endorsed types of FA (occurring at least one day in the week being rated) were: providing reassurance that there were no grounds for the patient's OCD-related worries (63.4%), avoiding talking about OCD triggers (56.1%), and waiting for the patient to complete compulsions (48.8%).

The FAS-SR total score (based on the 19 retained items) ranged from 0 to 68 (with maximum possible score being 80) ($M=14.1$, $SD=14.7$). The FAS-IR total score ranged from 0 to 33 (with maximum possible score being 48) ($M=10.4$, $SD=7.6$). A paired samples t -test showed no difference between the mean of FAS-SR items (.71, $SD=.73$) and the mean of FAS-IR items (.86, $SD=.63$) for the 37 relatives who completed both versions ($t(36)=1.94$, $p=.06$).

3.4. Reliability and validity

The FAS-SR demonstrated excellent internal consistency reliability (Cronbach's $\alpha=.90$), higher than the internal consistency for the FAS-IR (.76) in this sample. In addition, the FAS-SR total score showed strong agreement with the FAS-IR total score ($ICC=.78$, $p<.01$).

With respect to convergent validity (see Table 3), greater FA, as measured by higher FAS-SR total score, was correlated with more severe patient OCD as measured by the YBOCS (from both patient [trend] and relative perspectives). In addition, higher FAS-SR total score was associated with worse patient functioning on the GAF (trend) and with worse family functioning (FAD), as rated by both patients and relatives. Moreover, relatives who had higher FAS-SR total scores reported greater distress on the SCL-90-R (trend). Overall, correlations between the FAS-SR total score and each of these criterion measures were in the moderate range and did not differ in magnitude with correlations between these measures and the FAS-IR total score.

4. Discussion

Prior studies have shown that FA of OCD symptoms is related to greater OCD morbidity and family dysfunction (e.g., Calvocoressi et al., 1999) as well as poorer CBT response (Amir et al., 2000). Therefore, identifying OCD patients whose families exhibit high FA may lead to improved outcomes if these patients are directed towards family-based CBT aimed at reducing FA (Merlo, Lehmkuhl, Geffken, & Storch, 2009). Preliminary studies indicate that family-based interventions lead to more durable symptom improvement than individual CBT (Van Noppen & Steketee, 2003). However, systematic assessment of FA pre- and post-treatment and further study of the impact of FA on patients and family members hinges on the availability of a valid and reliable measure that can easily be administered in clinical and research settings. By eliminating the cost of training interviewers and reducing the time required to measure FA, the FAS-SR is a practical alternative to the gold standard FAS-IR that has the potential to be widely used. Expert reviewers of the new instrument, as well as relatives in our sample, found the instrument to be clear and easy to follow. Our initial testing of the FAS-SR indicates strong agreement with the FAS-IR and expected convergence with criterion measures, suggesting that this self-rated version may accurately, as well as efficiently, measure FA. The FAS-SR also improves upon prior attempts at a self-rated FAS by including an OCD symptom list, an objectively defined response scale (number of days in the past week) for all items that is appropriate for a self-rated measure, and specific examples to describe the various types of FA.

A major challenge in developing this self-report was trying to achieve the same sensitivity and specificity in the assessment of FA as one can obtain with interviewer probing. As noted, we maintained the structure of the original instrument, used multiple examples of FA to assist the relative in identifying the behaviors under consideration, simplified wording, and reduced the complexity of some items by using two (or more) items to measure the same type of accommodating behavior. The internal consistency of the FAS-SR that includes these additional items was excellent, which supports the view of our expert panel that rated the additional FAS-SR items as relevant to FA and representative of the construct. The additional items more specifically define broad categories of FA, providing clinicians with more detailed information on the types of accommodating behaviors present in the home environment that may be targeted in a family-based treatment. Even with the additional items, response rates for most FAS-SR items were well distributed, with all but two items being endorsed by at least 10% of relatives. The two items with the lowest rates of endorsement came from FAS-IR items that were divided into separate FAS-SR items to reduce complexity for non-clinicians. We expected that these items would not be highly endorsed as they cover more narrow types of FA, namely providing items (e.g., soap) that the patient needs to do compulsions and helping the patient with self-care tasks.

One of the FAS-SR test items ("watched patient do rituals"), derived from the FAS-IR, did not correlate with the rest of the items and was removed from the scale. Interestingly, among FAS-IR items in our sample, the item performs better (corrected item-total correlation=.26), indicating that it is informative to FA when assessed by a trained interviewer but not when interpreted by a lay person completing a self-report questionnaire. In this case, the modality of assessment (self-rated versus interviewer-rated) may be impacting the performance of the item, underscoring the importance of testing items when changing their originally intended assessment format.

Our hypothesis that the FAS-SR would moderately correlate with several measures of patient and family functioning was supported. Furthermore, the correlations between the FAS-SR and each of these measures did not differ from correlations between the FAS-IR and the same measures, and these correlations were consistent with those between the FAS-IR and criterion measures reported previously by Calvocoressi et al. (1999). Specifically, our findings are in agreement with earlier work that found higher FA associated with poorer patient and family functioning (Calvocoressi et al., 1999; Storch et al., 2007), greater OCD symptom severity (Calvocoressi et al., 1999; Ramos-Cerqueira et al., 2008; Stewart et al., 2008; Storch et al., 2007; Van Noppen & Steketee, 2009), and increased relative distress (Albert et al., 2010; Peris et al., 2008). These results suggest that a home environment characterized by FA of OCD symptoms will tend to have more dysfunctional family interactions with accompanying family conflict and stress. Consistent with our finding of an association between FAS-SR and elevated relative distress, prior studies have shown an association between FA and increased emotional burden (Ramos-Cerqueira et al., 2008) and poorer quality of life (Albert et al., 2010) in relatives.

A limitation of the current study is the relatively small sample which prohibited further psychometric analyses, in particular a factor analysis that identifies the factors underlying self-rated FA and allows comparison to factor structures derived in previous studies of FA

(Albert et al., 2010; Flessner et al., 2009). Future studies with larger samples of relatives of OCD patients can also examine interactions between FA and type of relative (e.g., spouse, parent). Although we demonstrated strong agreement between the FAS-SR and FAS-IR total scores, the inclusion of substantially more items in the self-rated version, as well as the use of a frequency rating scale on the FAS-SR versus a mix of frequency and severity rating scales on the FAS-IR, complicates the ability to directly compare the instruments item-by-item. A further limitation is that the current study was not designed to assess the FAS-SR for test-retest reliability and sensitivity to change with treatment. These additional psychometrics could provide further support for the use of the FAS-SR as a valid outcome measure in OCD treatment trials. Besides further psychometric evaluation of the FAS-SR, future research is needed to modify this new measure for parents/family members of children with OCD where attention to family factors is fundamental.

In summary, the FAS-SR provides a cost-effective and time-efficient means of assessing the involvement of significant relatives in a patient's OCD symptoms, which may be critical in treatment planning. Though further study is needed, our findings suggest that the FAS-SR is a viable alternative to the FAS-IR and may prove to be a useful tool in both clinical and research settings.

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Appendix: Family Accommodation Scale for Obsessive-Compulsive Disorder - Self-Rated Version (FAS-SR)

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The Family Accommodation Scale for Obsessive Compulsive Disorder - Self-Rated Version (FAS-SR), copyright© 2012 by Anthony Pinto, Ph.D., Barbara Van Noppen, Ph.D., & Lisa Calvocoressi, Ph.D.

The Family Accommodation Scale for Obsessive Compulsive Disorder - Self-Rated Version (FAS-SR) includes a modified version of the Yale Brown Obsessive Compulsive Scale (YBOCS) Checklist, copyright© 1986, 1989, with permission.

Today's Date: ____/____/____

Your Gender: (*circle one*)

1=female 2=male

I am the patient's _____. [**What is your relation to the patient?**] (*circle one*)

1=parent 2=spouse 3=partner 4=adult child 5=sibling 6=other

Introduction for the family member

You have been asked to complete this questionnaire because you have a relative or significant other who has been diagnosed with obsessive-compulsive disorder (OCD) and who has identified you as the family member who is most involved with him/her and the OCD. Throughout this questionnaire, your relative/significant other with OCD is referred to as “your relative” and you are referred to as the “family member.”

Part I of this questionnaire describes obsessions and compulsions and asks you to identify your relative’s current OCD symptoms to the best of your knowledge. Part II of this questionnaire asks you to identify possible ways in which you may be modifying your behavior or routines in response to your relative’s OCD.

PART I: Report of relative’s OCD symptoms

OBSSESSIONS—Obsessions are distressing ideas, thoughts, images or impulses that repeatedly enter a person’s mind and may seem to occur against his or her will. The thoughts may be repugnant or frightening, or may seem senseless to the person who is experiencing them.

Below is a list of different types of obsessions common in OCD. Please place a check mark by each type of obsession that your relative experienced (to the best of your knowledge) **during the past week.**

☐ HARMING OBSSESSIONS

Examples: fears of harming oneself or others, stealing things, blurting out obscenities or insults, acting on unwanted or embarrassing impulses; being responsible for something terrible happening (e.g., a fire or burglary); experiencing violent or horrific images.

☐ CONTAMINATION OBSSESSIONS

Examples: excessive concerns about or disgust with bodily waste, secretions, blood, germs; excessive concerns about being contaminated by environmental toxins (e.g., asbestos, radiation, or toxic waste), household cleansers/solvents, or animals (e.g., insects); discomfort with sticky substances or residues; fears of contaminating others.

☐ SEXUAL OBSSESSIONS

Examples: unwanted, repeated thoughts with forbidden or perverse sexual themes (e.g., sexual involvement with children).

☐ HOARDING/SAVING OBSSESSIONS

Examples: worries about throwing out seemingly unimportant things, resulting in accumulation of possessions that fill up or clutter active living areas or the workplace.

☐ RELIGIOUS OBSSESSIONS

Examples: intrusive blasphemous thoughts; excessive concerns about right and wrong/morality.

☐ OBSESSION WITH NEED FOR SYMMETRY OR EXACTNESS

Examples: worries about whether items have been moved; worries that possessions are not properly aligned; worries about calculations or handwriting being perfect.

☐ SOMATIC OBSESSIONS

Examples: excessive concerns about having an illness like AIDS or cancer, despite reassurance to the contrary; excessive concerns about a part of the body or aspect of appearance.

☐ MISCELLANEOUS OBSESSIONS

Examples: an excessive need to know or remember unimportant details; a fear of losing things; a fear of saying certain words; a fear of not saying just the right thing; a discomfort with certain sounds or noises; or repeated thoughts of lucky or unlucky numbers.

COMPULSIONS—Compulsions (also called rituals) are defined as behaviors or mental acts that a person feels driven to perform, although s/he may recognize them as senseless or excessive. It may be difficult or anxiety provoking for a person to resist performing these behaviors.

Below is a list of different types of compulsions common in OCD. Please place a check mark by each type of compulsion that your relative experienced (to the best of your knowledge) **during the past week**.

☐ CLEANING/WASHING COMPULSIONS

Examples: excessive or ritualized handwashing, showering, bathing, toothbrushing, grooming, or toilet routine; excessive cleaning of household items; efforts to prevent contact with contaminants.

☐ CHECKING COMPULSIONS

Examples: excessively checking locks, stove, appliances; checking to ensure that nothing terrible did or will happen, or that s/he did not make a mistake; checking tied to fears of illness.

☐ REPEATING RITUALS

Examples: rereading and/or rewriting things; repeating routine activities (e.g., going in/out of door, getting up/down from chair).

☐ COUNTING COMPULSIONS

Examples: counting floor tiles, books on a shelf, or words in a sentence.

☐ ORDERING/ARRANGING COMPULSIONS

Examples: excessive straightening of papers on a desk, adjusting furniture or picture frames.

☐ HOARDING/SAVING/COLLECTING COMPULSIONS

Examples: saving old newspapers, junk mail, wrappers, broken tools since they may be needed one day; picking up useless objects from the street or garbage cans.

____ MISCELLANEOUS COMPULSIONS

Examples: seeking reassurance (e.g., by repeatedly asking the same question); excessive listmaking; taking measures to prevent harm to self or others, or to prevent terrible consequences; mental rituals other than checking or counting (e.g., reviewing, ritualized praying); need to touch or tap things; ritualized eating behaviors.

PART II: Report of family member's responses to OCD

INSTRUCTIONS: Keeping in mind your relative's OCD symptoms that you identified in Part I, the next set of items describe possible ways that you may have responded to those symptoms during the past week. For each item, please indicate the number of days during the past week that you responded to your relative in the way specified. For each item, fill in a circle in the NUMBER OF DAYS column. If an item refers to something you did not do at all in the last week, fill in the circle for "none/never happened."

	Number of days this past week				
	None/ Never	1 day	2-3 days	4-6 days	Every day
1. I reassured my relative that there were no grounds for his/her OCD-related worries. <i>Examples: reassuring my relative that s/he is not contaminated or that s/he is not terminally ill.</i>	①	①	②	③	④
2. I reassured my relative that the rituals he/she already performed took care of the OCD-related concern. <i>Examples: reassuring my relative that s/he did enough ritualized cleaning or checking.</i>	①	①	②	③	④
3. I waited for my relative while s/he completed compulsive behaviors.	①	①	②	③	④
4. I directly participated in my relative's compulsions. <i>Examples: doing repeated washing or checking at my relative's request.</i>	①	①	②	③	④
5. I did things that made it possible for my relative to complete compulsions. <i>Examples: driving back home so my relative can check if the doors are locked; creating extra space in the house for my relative's saved items.</i>	①	①	②	③	④
6. I provided my relative with OCD with items s/he needs to perform rituals or compulsions. <i>Examples: shopping for excessive quantities of soap or cleaning products for my relative.</i>	①	①	②	③	④
7. I did things that allowed my relative to avoid situations that might trigger obsessions or compulsions. <i>Examples: touching public door knobs for my relative so s/he wouldn't have to.</i>	①	①	②	③	④
8. I helped my relative make simple decisions when s/he couldn't do so because of OCD. <i>Examples: deciding which clothes my relative should put on in the morning or what brand of cereal s/he should buy.</i>	①	①	②	③	④
9. I helped my relative with personal tasks, such as washing, grooming, toileting or dressing, when his/her ability to function was impaired by OCD.	①	①	②	③	④
10. I helped my relative prepare food when s/he couldn't do so because of OCD.	①	①	②	③	④
11. I took on family or household responsibilities that my relative couldn't adequately perform due to OCD. <i>Examples: doing bills, shopping, and/or taking care of children for my relative (when, except for OCD, I wouldn't have done so).</i>	①	①	②	③	④

	Number of days this past week				
	None/ Never	1 day	2–3 days	4–6 days	Every day
12. I avoided talking about things that might trigger my relative's obsessions or compulsions.	①	①	②	③	④
13. I stopped myself from doing things that could have led my relative to have obsessions or compulsions. <i>Examples: not moving items that my relative has carefully lined up.</i>	①	①	②	③	④
14. I made excuses or lied for my relative when s/he missed work or a social activity because of his/her OCD.	①	①	②	③	④
15. I didn't do anything to stop unusual OCD-related behaviors by my relative. <i>Examples: tolerating my relative's repetitive actions such as going in and out of a doorway or touching/tapping objects a certain number of times.</i>	①	①	②	③	④
16. I put up with unusual conditions in my home because of my relative's OCD. <i>Examples: leaving the home cluttered with papers that my relative won't throw away.</i>	①	①	②	③	④
17. I cut back on leisure activities because of my relative's OCD. <i>Examples: spending less time socializing, doing hobbies, exercising.</i>	①	①	②	③	④
18. I changed my work or school schedule because of my relative's OCD.	①	①	②	③	④
19. I put off some of my family responsibilities because of my relative's OCD. <i>Examples: I spent less time than I would have liked with other relatives; I neglected my household chores.</i>	①	①	②	③	④
TOTAL SCORE (sum of responses to items 1–19)					

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Table 1

Agreement (kappa) in relatives' endorsement of patient OCD symptom categories on FAS-IR versus FAS-SR ($n=37$).

OCD symptom category	FAS-IR (%)	FAS-SR (%)	kappa	<i>p</i>
<i>Obsessions</i>				
Harming	27.0	13.5	.27	.07
Contamination	54.1	43.2	.57	<.01
Sexual	0	5.4	– ^a	–
Hoarding	35.1	32.4	.70	<.01
Religious	13.5	5.4	–.08	.57
Symmetry/exactness	45.9	32.4	.72	<.01
Somatic	8.3	22.2	.28	.05
Miscellaneous	27.0	45.9	.38	.01
<i>Compulsions</i>				
Cleaning/washing	54.1	54.1	.78	<.01
Checking	62.2	43.2	.63	<.01
Repeating	24.3	27.0	.65	<.01
Counting	10.8	8.1	.21	.19
Ordering/arranging	40.5	24.3	.40	.01
Hoarding	40.5	24.3	.64	<.01
Miscellaneous	62.2	45.9	.47	<.01

^a Agreement not calculated because endorsement on one measure was a constant.

Table 2

Frequency of types of family accommodation on FAS-SR ($n=41$).

FAS-SR item	Corrected item-total correlation	Never		1 day		2-3 day		4-6 day		Every day	
		n	%	n	%	n	%	n	%	n	%
1. Reassured patient that there were no grounds for OCD concern	.23	15	36.6	10	24.4	12	29.3	1	2.4	3	7.3
2. Reassured patient that compulsions took care of OCD concern	.51	28	68.3	5	12.2	3	7.3	1	2.4	4	9.8
3. Waited for patient	.61	21	51.2	9	22.0	6	14.6	1	2.4	4	9.8
4. Directly participated in compulsions	.58	37	90.2	1	2.4	2	4.9	0	0	1	2.4
5. Made it possible for patient to do compulsions	.65	33	80.5	2	4.9	2	4.9	1	2.4	3	7.3
6. Provided items needed to do compulsions	.59	38	92.7	1	2.4	0	0	0	0	2	4.9
7. Made it possible for patient to avoid OCD triggers	.58	29	70.7	5	12.2	3	7.3	1	2.4	3	7.3
8. Helped patient make simple decisions	.52	28	68.3	5	12.2	4	9.8	1	2.4	3	7.3
9. Helped patient with personal tasks (self-care)	.73	38	92.7	0	0	0	0	0	0	3	7.3
10. Helped patient prepare food	.65	33	80.5	2	4.9	3	7.3	1	2.4	2	4.9
11. Took on patient's family or household responsibilities	.72	26	63.4	4	9.8	6	14.6	0	0	5	12.2
12. Avoided talking about OCD triggers	.44	18	43.9	6	14.6	12	29.3	0	0	5	12.2
13. Stopped self from doing things that could trigger OCD	.53	22	53.7	6	14.6	4	9.8	2	4.9	7	17.1
14. Made excuses or lied for patient to cover up OCD	.73	37	90.2	3	7.3	0	0	0	0	1	2.4
15. Didn't stop unusual OCD-related behaviors	.30	24	58.5	4	9.8	5	12.2	1	2.4	7	17.1
16. Put up with unusual conditions in home due to OCD	.46	23	56.1	0	0	4	9.8	0	0	14	34.1
17. Cut back on leisure time	.74	27	65.9	4	9.8	3	7.3	1	2.4	6	14.6
18. Changed my work/school schedule	.50	35	85.4	1	2.4	0	0	0	0	5	12.2
19. Put off my own family responsibilities	.78	30	73.2	2	4.9	4	9.8	1	2.4	4	9.8

Table 3

Convergent validity of FAS-SR with criterion measures as compared to FAS-IR ($n=37$).

	FAS-SR total^a	<i>p</i>	FAS-IR total	<i>p</i>	Steiger's <i>Z</i>^b
FAS-IR total	.76	<.01	–	–	–
Patient OCD severity [YBOCS] (patient interview)	.42	.01	.55	<.01	–1.28
Patient compulsion severity [YBOCS] (relative interview)	.57	<.01	.67	<.01	–1.12
Patient global functioning [GAF] (clinician-rated)	–.39	.02	–.48	<.01	.76
Family global functioning [FAD] (patient-rated)	.53	<.01	.44	.01	.88
Family global functioning [FAD] (relative-rated)	.43	<.01	.30	.07	1.19
Relative distress [SCL-90-R] (relative-rated)	.40	.02	.31	.06	.82

YBOCS=Yale-Brown Obsessive Compulsive Scale; GAF=Global Assessment of Functioning; FAD=Family Assessment Device; SCL-90-R=Symptom Checklist-90-R.

^aFAS-SR total was calculated based on 19 retained items.

^bTwo-tailed *Z*-critical is 2.58 for $p<.01$ and 1.96 for $p<.05$.