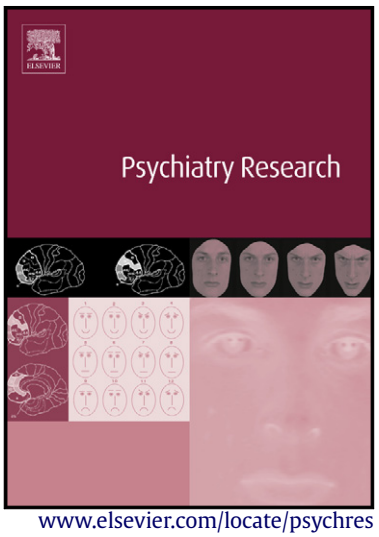

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A study of poor insight in social anxiety disorder

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Running head: Poor insight in SAD

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Abstract

We investigated levels of insight among patients with social anxiety disorder (SAD) as compared to patients with obsessive-compulsive disorder (OCD) and evaluated whether levels of insight in SAD were related to specific sociodemographic and/or clinical features. Thirty-seven SAD patients and 51 OCD patients attending a tertiary obsessive-compulsive and anxiety disorder clinic were assessed with a sociodemographic and clinical questionnaire, a structured diagnostic interview, the Brown Assessment of Beliefs Scale (BABS), the Social Phobia Inventory (SPIN), the Beck Depression Inventory, the Sheehan Disability Scale (SDS), and the Treatment Adherence Survey-patient version. According to the BABS, SAD patients exhibited insight levels that were as low as those exhibited by OCD patients, with up to 29.7% of them being described as "poor insight" SAD. Although poor insight SAD patients were more frequently married, less depressed and displayed a statistical trend towards greater rates of early drop-out from cognitive-behavioral therapy, their insight levels were not associated with other variables of interest, including sex, age, employment, age at onset, duration of illness, associated psychiatric disorders, SPIN and SDS scores. Patients with poor insight SAD might perceive their symptoms as being less distressful and thus report fewer depressive symptoms and high rates of treatment non-adherence.

Key words: Social Phobia; Obsessive-Compulsive Disorder; Delusion; Psychosis; Psychopathology

1. Introduction

Insight is the human ability to critically appraise one's own mind state "from inside" (Oyebode, 2008). Poor levels of insight have been well documented in psychotic disorders (e.g. schizophrenia) and severe mood disorders (e.g. bipolar disorder), but have also been identified in patients with obsessive-compulsive disorder (OCD) (Fontenelle et al., 2010), body dysmorphic disorder (BDD) (Phillips et al., 2012), hoarding disorder (HD) (Dimauro et al., 2013), as well as other neuropsychiatric conditions (Konstantakopoulos et al., 2012; Hartmann et al., 2013)). Regardless of the primary syndrome, poor insight is generally associated with a more severe clinical presentation. In OCD, for instance, poor insight has been associated with an earlier age of onset (Ravi Kishore et al., 2004; Catapano et al., 2010), higher rates of comorbid mood (Turksoy et al., 2002; Ravi Kishore et al., 2004; Alonso et al., 2008, Catapano et al., 2010), anxiety (Turksoy et al., 2002), and personality disorders (Turksoy et al., 2002; Alonso et al., 2008; Catapano et al., 2010); family history of psychosis (Catapano et al., 2010), poorer quality if life (Eisen et al., 2006) and functioning (Storch et al., 2008), and worse treatment response (Hantouche et al., 2000; Catapano et al., 2001; Erzegovesi et al., 2001; Ravi Kishore et al., 2004; Himle et al., 2006).

As patients with OCD and other "OC-related disorders" such as BDD and HD differ in their awareness of symptoms, developers of the DSM-5 added specifiers regarding levels of insight for each disorder (APA, 2013). These specifiers are

intended to alert clinicians that patients with OC-related disorders should not be classified and treated as patients with other psychotic disorders generally managed with an antipsychotic monotherapy. Although there is evidence that antipsychotic augmentation therapy is beneficial in SRI-resistant OCD cases (Bloch et al., 2006), this strategy has been linked with potentially severe side effects (Meyer, 2007) and may not be effective when employed as a monotherapy in OCD-related disorders (Keuneman et al., 2005). Probably, a similar strategy can be employed to prevent antipsychotic treatments being administered to poor insight patients with other disorders that are frequently comorbid with OCD, such as anxiety disorders.

Social anxiety disorder (SAD) indeed has substantial overlap with several conditions that may present with poor insight, including OC-related disorders and eating disorders. Each of these conditions have an early age of onset, are highly comorbid with each other, and tend to respond to similar pharmacological treatments (e.g. serotonin reuptake inhibitors) (Schneier et al., 2002). In fact, when SAD is comorbid with other disorders, it tends to emerge first (McEvoy et al., 2011). The characteristic feature of SAD (i.e., fear of being negatively evaluated by others) is also evident in the clinical picture of these comorbid disorders – for example, in relation to sexual-religious obsessions in OCD (Assuncao et al., 2012), dysmorphic concerns in BDD (Fang and Hofmann, 2010), bizarre possessions in HD (Frost et al., 2011), and weight and shape in ED (Hinrichsen et al., 2003).

Until DSM-IV-TR, only those patients who displayed insight into their social anxiety symptoms were qualified for a diagnosis of SAD (APA, 2000). However, a relevant change that has taken place with the DSM5 conceptualization of SAD is that patients no longer need to recognize their symptoms as irrational (Bogels et al., 2010). Although in one study it was reported that less than 1% of patients with SAD failed to recognize that their fears as excessive or unreasonable (Zimmerman et al., 2010), we are not aware of any previous attempts to investigate levels of insight in SAD patients using standardized instruments to measure insight as a dimensional construct. Therefore, if some patients with poor insight SAD do exist, it is not clear whether they demonstrate specific sociodemographic or clinical features. Based on the findings described in other disorders, we hypothesized that poor insight SAD would likely be associated with an earlier age of onset, more severe SAD and depressive symptoms, greater rates of comorbid major depression, and a poorer adherence to treatment.

In this study, we investigated the levels of insight among patients with SAD compared OCD patients, and evaluated whether poorer insight was related to distinct sociodemographic features, comorbidity patterns, or clinical characteristics, including treatment adherence with particular focus on pharmacotherapy and cognitive-behavioral therapy.

2. Methods

Thirty-seven SAD patients and 51 OCD patients attending a University (tertiary) anxiety and obsessive-compulsive disorders clinic were recruited for this study.

To be included, patients had to (i) have a diagnosis of SAD or OCD according to DSM-IV-TR criteria – if other psychiatric disorders were present, they had to be less severe (according to the interviewing psychiatrist's clinical judgment) and associated with a later age of onset than SAD and OCD – (ii) be aged between 18 and 65 years, and (iii) have the ability to read, comprehend and complete written forms. Patients with a comorbid diagnosis of both OCD and SAD, schizophrenia, acute mania or delusional depression were excluded from our sample. All recruited patients signed an informed consent that agreed with the objectives and procedures of this study, which was approved by the local Institutional Review Board and in accordance with the Declaration of Helsinki.

Part of the OCD sample included here was described in a previous paper (Santana et al., 2013). Subjects were assessed with a sociodemographic and clinical questionnaire, scales to measure the severity of SAD or OCD symptoms [Social Phobia Inventory (SPIN) (Vilete et al., 2004), and the Dimensional Yale-Brown Obsessive-Compulsive Scale (DY-BOCS) (Rosario-Campos et al., 2006)], an instrument to evaluate associated depression [Beck Depression Inventory (BDI) (Cunha, 2001)], and a scale focusing on disability levels [Sheehan Disability Scale (SDS)] (Sheehan et al., 1996).

Insight was evaluated using the Brown Assessment of Beliefs Scale (BABS), a seven-item semi-structured clinician-administered scale with specific probes and anchors designed to assess insight into a dominant belief that has preoccupied the patient during the past week (Eisen et al., 1998). The dimensions covered by the scale include conviction; perception of others' view of

beliefs; explanation of differing views; fixity of ideas; attempt to disprove beliefs; and insight and ideas of reference. For each item, there are specific probes with five anchors ranging from 0 (nondelusional/least pathologic) to 4 (delusional/most pathologic). The seventh item is not included in the total score. Ratings represent an average score for the past week.

The BABS was employed to rate insight into (i) core SAD beliefs, which are generally described as the fear of being criticized or negatively evaluated by others, but expressed in more specific forms and assessed in greater detail in each patient (e.g. fear of looking "silly", "like an idiot", "not intelligent", "crazy", ""unprepared", or "disturbing", among others) and (ii) core OCD beliefs in different OCD dimensions, identified as relevant by means of a score ≥ 3 on the Dimensional Yale-Brown Obsessive-Compulsive Scale – Short Version. Given the multisymptomatic nature of OCD, two methods of using BABS in OCD samples were employed, as described previously (Santana et al., 2013): (i) a dimension-specific strategy, which assess insight into all clinically significant OCD symptoms separately, thus allowing the identification of the beliefs associated with lower insight levels and (ii) a traditional approach, recommended by developers of the scale, which rates insight into OCD symptoms as a composite of the general average insight level.

Adherence to CBT and pharmacotherapy was assessed with the Treatment adherence survey – patient version (TAS-P), a rater-administered questionnaire originally developed by Mancebo and coworkers (Mancebo et al., 2008). We felt the TAS-P would be the most appropriate instrument to assess treatment

adherence across SAD and OCD samples due to its simplicity and ease of administration although, to date, its use has been restricted to OCD patients. For instance, the TAS-P assesses if CBT and/or pharmacotherapy were previously recommended, started, interrupted or declined; the approximate number of CBT sessions attended and/or of weeks of medication use; and the reasons, if any, for non-adherence to these forms of treatment. In our study, we investigated lifetime treatment adherence, including adherence to treatment recommendations made while in our clinic.

2.1 Statistical analyses

Categorical variables were summarized in terms of frequencies and percentages and continuous variables were summarized in terms of means (± standard deviations). Two types of comparisons were made: i) SAD patients vs. patients OCD patients and ii) poor insight SAD patients (BABS ≥ 13) vs. good insight SAD patients (BABS <13). The cut-off score for BABS was empirically defined through the observation of a zone of rarity in the histogram depicting the distribution of conventional BABS scores over the entire studied sample (data not shown). Chi-square or Fisher's exact test categorical variables and Student's t test or Mann-Whitney test for continuous variables were used.

3. Results

SAD patients were compared to OCD patients in terms of sociodemographic and clinical features (see table 1). SAD patients were predominantly female,

belonged to a higher socioeconomic strata, displayed increased rates of alcohol dependence, had more unproductive days at school or work, and reported an earlier onset of symptoms. In contrast, OCD patients displayed higher rates of unemployment, greater religiosity, and a trend towards more frequent prescription of drug treatments.

INSERT TABLE 1

As emphasized in table 1 and described above, insight levels assessed using the BABS were analyzed according to two approaches. When compared to insight levels in OCD patients rated against their primary symptom domain, SAD patients demonstrated equivalent (low) insight levels. However, when compared to insight levels in OCD patients rated across all symptom domains, SAD patients demonstrated significantly lower insight levels. A comparison between SAD and OCD in terms of treatment adherence is depicted in table 2.

INSERT TABLE 2

In relation to SAD, up to 29.7% of the sample (11 patients) exhibited poor insight, defined as a score of 13 or more on the BABS. Poor insight SAD patients were more frequently married and had lower BDI scores than good insight SAD patients (table 3). There were no other distinct differences between the groups, although poor insight SAD patients displayed a statistical trend towards higher rates of CBT non-adherence (table 4).

INSERT TABLE 3 & 4

4. Discussion

In this study, patients with SAD were characterized by levels of insight that were as low as those exhibited by OCD patients – a classical non-psychotic condition that has been more consistently linked with reduced insight (Fontenelle et al., 2010). In fact, the prevalence of poor insight was considerably high in our sample, occurring in approximately 30% of cases. This finding is in sharp contrast to the 1% estimate provided in a previous study that assessed patients' insight into their primary fears as an "all or nothing" phenomenon (Zimmerman et al., 2010). That is, our results suggest that an inability to appraise critically one's own beliefs is in fact a common feature among SAD patients. This observation is therefore consistent with the DSM5 conceptualization of SAD, which no longer requires patients to recognize their symptoms as irrational.

Our study represents the first attempt to dimensionally assess insight levels in SAD, although some authors have already suggested that patients with primary SAD might occasionally report "psychotic-like" experiences (Armando et al., 2013; Veras et al., 2011). It is surprising that only a few such cases have been described so far. As previously theorized, it must be a very short step, one might suppose, from appraising self-referential thoughts critically to believing "delusionally" that one has been observed (Lewis, 1936). In relation to this, it would be interesting to investigate if insight levels in SAD patients fluctuate over

time as has been demonstrated in OCD. Long-term follow-up studies of insight levels in SAD patients will be important in clarifying this relevant clinical issue.

We also investigated whether poor-insight SAD was associated with differential features as reported in many OC-related disorders. However, while in OCD, BDD, and eating disorders poor insight has been associated with greater severity of symptoms (including depression), we found the opposite phenomenon in poor-insight SAD patients, who displayed less severe depression, thus suggesting that different mechanisms may mediate the relationship between insight and depression in SAD. It could be argued, for instance, that patients with poor insight SAD apparently suffer from a purer, but not necessarily milder, form of SAD, as they were less depressed than good insight SAD patients.

One possibility is that by not questioning their SAD beliefs, poor insight SAD patients might adjust to their symptoms and perceive them as less distressful, thus experiencing less depression. Alternatively, depression may be an understandable outcome of greater awareness into illness and/or lead to an increase in self-criticism, thus resulting in greater insight into SAD beliefs and symptoms. In support of the latter interpretation, some have argued that poor insight symptoms (e.g. persecutory delusions) may be a defense against negative affective processes (Bentall et al., 2001). Finally, being in a stable relationship might also provide a “safer” environment for patients with poor-insight SAD, a situation in which they feel protected and less likely to expose themselves to external evaluators.

No other clinical or demographic feature, including sex, age, employment, age at onset, duration of illness, associated psychiatric disorders, SPIN, and SDS scores, were related to insight levels in SAD. Thus, it appears that poor insight SAD and good-insight SAD might in fact represent the same condition, with poor-insight being an occasional phenomenon reported in SAD, although this possibility can only be considered speculative at this point. Cautionary notes aside, we found that assessing insight in SAD patients might have some important clinical implications, as poor-insight patients might discontinue CBT treatment early. This finding suggests that care should be exercised in applying CBT as a first-line treatment in poor insight SAD cases or conversely that serotonin reuptake inhibitors may be first considered.

It is difficult to compare our findings to those of other studies, as none have employed a methodology similar to ours. For instance, Armando et al et al found that SAD patients with psychotic-like experience (PLE) showed higher level of anxiety, depression, and intolerance of uncertainty compared with the SAD without these features (Armando et al., 2013). However, it is not clear how this group compares to poor insight patients in our study. In fact, the instrument employed in their study [Community Assessment of Psychic Experiences (CAPE)] includes symptoms that are qualitatively different from the ones reported in by our patients (e.g. first-rank symptoms).

Our findings have some implications for the differential diagnoses of SAD. For instance, if SAD can be associated with poor insight, then how it could be differentiated from conditions characterized by self-referential delusions or

delusion-like ideas? Although this might pose a diagnostic challenge in cases lacking, for instance, gross first-rank symptoms, there are some potential clues that can be relied upon. While high levels of shame and behavioral inhibition are key features of poor insight SAD patients, who also display a more submissive attitude toward their interlocutors (a construct closer to the so-called "poor me" delusions (Trower and Chadwick, 1995)), indignation and disinhibition characterize most paranoid conditions, which also feature a more distrustful and sometimes hostile attitude toward other people ("bad me" delusions (Trower and Chadwick, 1995)).

Our study has some limitations. Firstly, since there were significant differences between SAD and OCD in sociodemographic and clinical terms, it could be argued that the groups could not be compared reliably. However, the extent to which the reported differences between the groups had the potential to affect "delusionality" is debatable. For instance, the SAD group displayed similar or lower insight than the OCD group despite having lower rates of comorbid depression (which is known to decrease insight in most conditions). Secondly, our SAD and OCD samples were relatively small, thus resulting in a reduced proportion of patients with SAD with poor-insight. Conceivably, the latter group might be considered insufficient large to detect to additional differences in relation to good insight SAD. Finally, future studies should incorporate a greater number of variables, including more clinician-rated scales, as poor insight can theoretically interfere with the ability to report other non-SAD symptoms reliably.

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Table 1: Comparison of sociodemographic and clinical features presented by patients with social anxiety disorder and patients with obsessive-compulsive disorder.

	Patients with SAD	Patients with OCD	Statistics
Socio-demographic features			
Age (in yrs)	43.7 (13.5)	40.7 (13.7)	t=1.02; df=86; p=0.31
Sex			χ2=3.65; df=1; p=0.05
Female	12 (32.4%)	27 (52.9%)	
Male	25 (67.6%)	24 (47.1%)	
Marital status			χ2=3.99; df=1; p=0.53
Never Married	23 (62.2%)	35 (68.6%)	
Ever Married	14 (37.8%)	16 (31.4%)	
Religiosity			χ2=9.35; df=1; p=0.002
Yes	16 (48.5%)	41 (80.4%)	
No	17 (51.5%)	10 (19.6%)	
Occupation			LR=3.65; df=2; p=0.04
Unemployed or on medical leave	4 (11.1%)	14 (27.5%)	
Employed, retired or student	32 (88.9%)	35 (68.6%)	
Homemaker	0 (0.0%)	2 (3.9%)	
Social Class			LR=5.33; df=2; p=0.03
Upper class	20 (54.1%)	18 (35.3%)	
Middle class	16 (43.2%)	26 (51.0%)	

Lower class	1 (2.7%)	7 (13.7%)	
Education			LR=1.31; df=2; p=0.52
Basic	4(10.8%)	7(13.7%)	
Intermediary	16(43.2%)	16(31.4%)	
High	17(45.9%)	28(54.9%)	
Course characteristics			
Age at onset	11.6 (5.1)	15.5 (7.0)	t=-2.80; df=80; p=0.006
Duration of illness	32.1 (14.7)	25.6 (15.1)	t=1.94; df=80; p=0.05
Insight features			
BABS I	9.1 (4.7)	2.7 (2.3)	t=7.51; df=85; p<0.001
BABS II	9.1 (4.7)	9.5 (5.9)	t=-2.80; df=86; p=0.78
Poor insight based on BABS I	10 (27.0%)	0 (0.0%)	Fisher's test p<0.001
Poor insight based on BABS II	11 (29.7%)	18 (35.3%)	$\chi 2$=0.30; df=1; p=0.58
Severity of Symptoms			
BDI	13.1 (9.8)	15.4 (11.1)	t=-1.00; df=86; p=0.31
SDS	11.4 (8.9)	9.9 (7.8)	t=0.70; df=59; p=0.49
Work/School Work	4.4 (3.3)	2.8 (3.2)	t=1.85; df=60; p=0.07
Social Life/Leisure Activities	4.5 (3.7)	4.4 (3.7)	t=1.11; df=86; p=0.91
Family Life/Home Responsibilities	2.9 (3.0)	4.7 (3.7)	t=-2.44; df=83.3; p=0.02
Days Lost	1.0 (2.1)	1.0 (2.4)	Z=-1.12; p=0.26
Days Unproductive	1.6 (2.3)	0.8 (2.0)	Z=-2.0; p=0.05

Psychiatric Comorbidity			
Major Depressive Episode (lifetime)	18 (50%)	20 (39.2%)	$\chi 2=1.00$; df=1; p=0.31
Dysthymia (current)	8 (22.2%)	6 (11.8%)	$\chi 2=1.70$; df=1; p=0.19
Bipolar Disorder (lifetime)	0 (0.0%)	1 (2.0%)	Fisher's test p=1.00
Bipolar II Disorder (lifetime)	0 (0.0%)	5 (9.8%)	Fisher's test p=0.07
Alcohol Dependence (last year)	6 (16.7%)	0 (0.0%)	Fisher's test p=0.004
Non-alcohol substance dependence (last year)	3 (8.3%)	0 (0.0%)	Fisher's test p=0.06
Panic Disorder (lifetime)	2 (5.6%)	10 (19.6%)	Fisher's test p=0.11
Generalized Anxiety Disorder (current)	7 (19.4%)	14 (27.5%)	$\chi 2=0.73$; df=1; p=0.39

Footnote: SAD: Social Anxiety Disorder; OCD: Obsessive-Compulsive Disorder; BABS: Brown Assessment of Beliefs Scale; BDI: Beck Depression Inventory; SDS: Sheehan Disability Scale;

Table 2: Comparison of some treatment adherence features between patients with social anxiety disorder and patients with obsessive-compulsive disorder

	Patients with SAD	Patients with OCD	Statistics
Has a doctor or other professional ever recommended that you receive CBT for SAD/OCD?	30(81.1%)	40(78.4%)	Fisher's test p=0.79
Have you ever received CBT for SAD/OCD?	17(45.9%)	25(49%)	Fisher's test p=0.83
Did you stop attending CBT before completing therapy?	10(47.6%)	15(62.5%)	Fisher's test p=0.37
Have you ever decided not to participate in CBT despite its being recommended to you by your doctor or another professional?	13(39.4%)	17(47.2%)	Fisher's test p=0.62
Has a doctor or other professional recommended that you take medication for SAD/OCD?	32(86.5%)	50(98%)	Fisher's test p=0.07
Have you ever taken any medication for SAD/OCD?	33(8.3%)	49(96.1%)	Fisher's test p=0.64

Did you ever take the medication less frequently or at a smaller dose than was prescribed, or stopped the medication on your own?	23(43.2%)	31(63.3%)	Fisher's test p=1.00
Have you ever not taken medication for SAD/OCD, even though it was recommended to you?	16(43.2%)	26(52%)	Fisher's test p=0.51

Footnote: This table describes most, but not all items listed on treatment adherence survey-patient version. To avoid multiple comparisons, we have excluded, a priori, comparisons of (i) the number of cognitive behavioral therapy that sessions received, (ii) the total length of time medications were taken, (iii) the reasons why patients did not participate in or stopped attending cognitive-behavioral therapy and (iv) reasons why patients did not receive medication or have taken them less frequently or at a lesser dose than prescribed.

Table 3: Comparison of sociodemographic and clinical features presented by patients with poor- vs. good-insight social anxiety disorder.

	Patients with Poor insight SAD	Patients With Good insight SAD	Statistics
Socio-demographic features			
Age (in yrs)	49.4(12.1)	41.7(13.6)	Z=-1.64; p=0.10
Sex			Fisher's test p=0.44
Male	8(80.0%)	17(63.0%)	
Female	2(20.0%)	10(37.0%)	
Marital status			Fisher's test p=0.02
Married	7(70.0%)	7(25.9%)	
Never Married	3(30.0%)	20(74.1%)	
Religiosity			Fisher's test p=0.08
Yes	1(14.3%)	15(57.7%)	
No	6(85.7%)	11(42.3%)	
Occupation			Fisher's test p=1.00
Unemployed	1(10.0%)	3(11.5%)	
Employed	9(90.0%)	23(88.5%)	
Social Class			LR=0.81;df=2;p=0.66

Upper class	5(50.0%)	15(55.6%)	
Middle class	5(50.0%)	11(40.7%)	
Lower class	0(0.0%)	1(3.7%)	
Education			LR=1.59;df=2;p=0.45
Basic	2(20.0%)	2(7.4%)	
Intermediary	3(30.0%)	13(48.1%)	
High	5(50.0%)	12(44.4%)	
Course characteristics			
Age at onset	13.7(6.8)	10.8(4.3)	Z=-0.94; p=0,34
Duration of illness	35.7(12.9)	30.8(15.3)	Z=-1.07; p=0.28
Severity of Symptoms			
SPIN	27.5(16.7)	43.2(46.2)	Z=-1.22; p=0.22
Fear	9.1(5.4)	12.2(6.9)	Z=- 1.34; p=0.18
Avoidance	12.7(7.6)	15.8(8.2)	Z=-1.22; p=0.22
Physiological disconfort	5.6(4.9)	8.4(6.5)	Z=-1.14; p=0.25
BDI	8.3(8.3)	14.9(9.8)	Z=- 1.92; p=0.05
SDS	10.2(8.8)	11.8(9.1)	Z=- 0.08; p=0.94
Work/School Work	3.7(3.1)	4.6(3.4)	Z=-0.61; p=0.54
Social Life/Leisure Activities	4.6(3.8)	4.5(3.7)	Z=-0.16; p=0.87
Family Life/Home Responsibilities	2.6(3.9)	2.9(2.7)	Z=- 0.84; p=0.39

Days Lost	0.3(1.0)	1.3(2.4)	Z=-1.25; p=0.21
Days Unproductive	1.7(2.4)	1.6(2.3)	Z=-0.08; p=0.93
Psychiatric Comorbidity			
Major Depressive Episode (lifetime)	4(40.0%)	14(53.8%)	Fisher's test p=0.71
Dysthymia (current)	2(20.0%)	6(23.1%)	Fisher's test p=1.00
Bipolar Disorder (lifetime)	0(0.0%)	0(0.0%)	
Bipolar II Disorder (lifetime)	0(0.0%)	0(0.0%)	
Alcohol Dependence (last year)	3(30.0%)	3(11.5%)	Fisher's test p=0.31
Non-alcohol substance dependence (last year)	1(10.0%)	2(7.7%)	Fisher's test p=1.00
Panic Disorder (lifetime)	2(20%)	0(0.0%)	Fisher's test p=0.07
Generalized Anxiety Disorder (current)	0(0.0%)	7(26.9%)	Fisher's test p=0.15

Footnote: SAD: Social Anxiety Disorder; OCD: Obsessive-Compulsive Disorder; BABS: Brown Assessment of Beliefs Scale; BDI: Beck Depression Inventory; SDS: Sheehan Disability Scale;

Table 4: Comparison of some treatment adherence features between patients with poor- and good-insight social anxiety disorder

	Patients with Poor insight SAD	Patients with Good Insight SAD	Statistics
Has a doctor or other professional ever recommended that you receive CBT for SAD/OCD?			Fisher's test p=1.00
No	2(18.2%)	5(19.2%)	
Yes	9 (81.8%)	21 (80.8%)	
Have you ever received CBT for SAD/OCD?			Fisher's test p=1.00
No	6(54.5%)	14(53.8%)	
Yes	5(45.5%)	12(46.2%)	
Did you stop attending CBT before completing therapy?			Fisher's test p=0.06
No	1(16.7%)	10(66.7%)	
Yes	5(83.3%)	5(33.3%)	
Have you ever decided not to participate in CBT despite its being recommended to you by your doctor or another professional?			Fisher's test p=1.00

No	5(55.6%)	15(62.5%)	
Yes	4(44.4%)	9(37.5)%	
Has a doctor or other professional recommended that you take medication for SAD/OCD?			Fisher's test p=1.00
No	1(9.1%)	4 (15.4%)	
Yes	10 (90.9%)	23(84.6%)	
Have you ever taken any medication for SAD/OCD?			Fisher's test p=1.00
No	1(10.0%)	2(7.7%)	
Yes	9(90.0%)	24(92.3%)	
Did you ever take the medication less frequently or at a smaller dose than was prescribed, or stopped the medication on your own?			Fisher's test p=1.00
No	4(36.4%)	10(38.5%)	
Yes	7(63.6%)	16(61.5%)	
Have you ever not taken medication for SAD/OCD, even though it was recommended to you?			Fisher's test p=1.00
No	6(54.5%)	15(57.7%)	
Yes	5(45.5%)	11(42.3%)	

Footnote: This table describes most, but not all items listed on treatment adherence survey-patient version. To avoid multiple comparisons, we have

excluded, a priori, comparisons of (i) the number of cognitive behavioral therapy that sessions received, (ii) the total length of time medications were taken, (iii) the reasons why patients did not participate in or stopped attending cognitive-behavioral therapy and (iv) reasons why patients did not receive medication or have taken them less frequently or at a lesser dose than prescribed.

Abstract

We investigated levels of insight among patients with social anxiety disorder (SAD) as compared to patients with obsessive-compulsive disorder (OCD) and evaluated whether levels of insight in SAD were related to specific sociodemographic and/or clinical features. Thirty-seven SAD patients and 51 OCD patients attending a tertiary obsessive-compulsive and anxiety disorder clinic were assessed with a sociodemographic and clinical questionnaire, a structured diagnostic interview, the Brown Assessment of Beliefs Scale (BABS), the Social Phobia Inventory (SPIN), the Beck Depression Inventory, the Sheehan Disability Scale (SDS), and the Treatment Adherence Survey-patient version. According to the BABS, SAD patients exhibited insight levels that were as low as those exhibited by OCD patients, with up to 29.7% of them being described as "poor insight" SAD. Although poor insight SAD patients were more frequently married, less depressed and displayed a statistical trend towards greater rates of early drop-out from cognitive-behavioral therapy, their insight levels were not

associated with other variables of interest, including sex, age, employment, age at onset, duration of illness, associated psychiatric disorders, SPIN and SDS scores. Patients with poor insight SAD might perceive their symptoms as being less distressful and thus report fewer depressive symptoms and high rates of treatment non-adherence.

Key words: Social Phobia; Obsessive-Compulsive Disorder; Delusion; Psychosis; Psychopathology

1. Introduction

Insight is the human ability to critically appraise one's own mind state "from inside" (Oyebode, 2008). Poor levels of insight have been well documented in psychotic disorders (e.g. schizophrenia) and severe mood disorders (e.g. bipolar disorder), but have also been identified in patients with obsessive-compulsive disorder (OCD) (Fontenelle et al., 2010), body dysmorphic disorder (BDD) (Phillips et al., 2012), hoarding disorder (HD) (Dimauro et al., 2013), as well as other neuropsychiatric conditions (Konstantakopoulos et al., 2012; Hartmann et al., 2013)). Regardless of the primary syndrome, poor insight is generally associated with a more severe clinical presentation. In OCD, for instance, poor insight has been associated with an earlier age of onset (Ravi Kishore et al., 2004; Catapano et al., 2010), higher rates of comorbid mood (Turksoy et al., 2002; Ravi Kishore et al., 2004; Alonso et al., 2008, Catapano et al., 2010), anxiety (Turksoy

et al., 2002), and personality disorders (Turksoy et al., 2002; Alonso et al., 2008; Catapano et al., 2010); family history of psychosis (Catapano et al., 2010), poorer quality if life (Eisen et al., 2006) and functioning (Storch et al., 2008), and worse treatment response (Hantouche et al., 2000; Catapano et al., 2001; Erzegovesi et al., 2001; Ravi Kishore et al., 2004; Himle et al., 2006).

As patients with OCD and other "OC-related disorders" such as BDD and HD differ in their awareness of symptoms, developers of the DSM-5 added specifiers regarding levels of insight for each disorder (APA, 2013). These specifiers are intended to alert clinicians that patients with OC-related disorders should not be classified and treated as patients with other psychotic disorders generally managed with an antipsychotic monotherapy. Although there is evidence that antipsychotic augmentation therapy is beneficial in SRI-resistant OCD cases (Bloch et al., 2006), this strategy has been linked with potentially severe side effects (Meyer, 2007) and may not be effective when employed as a monotherapy in OCD-related disorders (Keuneman et al., 2005). Probably, a similar strategy can be employed to prevent antipsychotic treatments being administered to poor insight patients with other disorders that are frequently comorbid with OCD, such as anxiety disorders.

Social anxiety disorder (SAD) indeed has substantial overlap with several conditions that may present with poor insight, including OC-related disorders and eating disorders. Each of these conditions have an early age of onset, are highly comorbid with each other, and tend to respond to similar pharmacological treatments (e.g. serotonin reuptake inhibitors) (Schneier et al., 2002). In fact,

when SAD is comorbid with other disorders, it tends to emerge first (McEvoy et al., 2011). The characteristic feature of SAD (i.e., fear of being negatively evaluated by others) is also evident in the clinical picture of these comorbid disorders – for example, in relation to sexual-religious obsessions in OCD (Assuncao et al., 2012), dysmorphic concerns in BDD (Fang and Hofmann, 2010), bizarre possessions in HD (Frost et al., 2011), and weight and shape in ED (Hinrichsen et al., 2003).

Until DSM-IV-TR, only those patients who displayed insight into their social anxiety symptoms were qualified for a diagnosis of SAD (APA, 2000). However, a relevant change that has taken place with the DSM5 conceptualization of SAD is that patients no longer need to recognize their symptoms as irrational (Bogels et al., 2010). Although in one study it was reported that less than 1% of patients with SAD failed to recognize that their fears as excessive or unreasonable (Zimmerman et al., 2010), we are not aware of any previous attempts to investigate levels of insight in SAD patients using standardized instruments to measure insight as a dimensional construct. Therefore, if some patients with poor insight SAD do exist, it is not clear whether they demonstrate specific sociodemographic or clinical features. Based on the findings described in other disorders, we hypothesized that poor insight SAD would likely be associated with an earlier age of onset, more severe SAD and depressive symptoms, greater rates of comorbid major depression, and a poorer adherence to treatment.

In this study, we investigated the levels of insight among patients with SAD compared OCD patients, and evaluated whether poorer insight was related to

distinct sociodemographic features, comorbidity patterns, or clinical characteristics, including treatment adherence with particular focus on pharmacotherapy and cognitive-behavioral therapy.

2. Methods

Thirty-seven SAD patients and 51 OCD patients attending a University (tertiary) anxiety and obsessive-compulsive disorders clinic were recruited for this study. To be included, patients had to (i) have a diagnosis of SAD or OCD according to DSM-IV-TR criteria – if other psychiatric disorders were present, they had to be less severe (according to the interviewing psychiatrist's clinical judgment) and associated with a later age of onset than SAD and OCD – (ii) be aged between 18 and 65 years, and (iii) have the ability to read, comprehend and complete written forms. Patients with a comorbid diagnosis of both OCD and SAD, schizophrenia, acute mania or delusional depression were excluded from our sample. All recruited patients signed an informed consent that agreed with the objectives and procedures of this study, which was approved by the local Institutional Review Board and in accordance with the Declaration of Helsinki.

Part of the OCD sample included here was described in a previous paper (Santana et al., 2013). Subjects were assessed with a sociodemographic and clinical questionnaire, scales to measure the severity of SAD or OCD symptoms [Social Phobia Inventory (SPIN) (Vilete et al., 2004), and the Dimensional Yale-Brown Obsessive-Compulsive Scale (DY-BOCS) (Rosario-Campos et al., 2006)], an instrument to evaluate associated depression [Beck Depression Inventory (BDI)

(Cunha, 2001)], and a scale focusing on disability levels [Sheehan Disability Scale (SDS)] (Sheehan et al., 1996).

Insight was evaluated using the Brown Assessment of Beliefs Scale (BABS), a seven-item semi-structured clinician-administered scale with specific probes and anchors designed to assess insight into a dominant belief that has preoccupied the patient during the past week (Eisen et al., 1998). The dimensions covered by the scale include conviction; perception of others' view of beliefs; explanation of differing views; fixity of ideas; attempt to disprove beliefs; and insight and ideas of reference. For each item, there are specific probes with five anchors ranging from 0 (nondelusional/least pathologic) to 4 (delusional/most pathologic). The seventh item is not included in the total score. Ratings represent an average score for the past week.

The BABS was employed to rate insight into (i) core SAD beliefs, which are generally described as the fear of being criticized or negatively evaluated by others, but expressed in more specific forms and assessed in greater detail in each patient (e.g. fear of looking "silly", "like an idiot", "not intelligent", "crazy", ""unprepared", or "disturbing", among others) and (ii) core OCD beliefs in different OCD dimensions, identified as relevant by means of a score ≥ 3 on the Dimensional Yale-Brown Obsessive-Compulsive Scale – Short Version. Given the multisymptomatic nature of OCD, two methods of using BABS in OCD samples were employed, as described previously (Santana et al., 2013): (i) a dimension-specific strategy, which assess insight into all clinically significant OCD symptoms separately, thus allowing the identification of the beliefs associated

with lower insight levels and (ii) a traditional approach, recommended by developers of the scale, which rates insight into OCD symptoms as a composite of the general average insight level.

Adherence to CBT and pharmacotherapy was assessed with the Treatment adherence survey – patient version (TAS-P), a rater-administered questionnaire originally developed by Mancebo and coworkers (Mancebo et al., 2008). We felt the TAS-P would be the most appropriate instrument to assess treatment adherence across SAD and OCD samples due to its simplicity and ease of administration although, to date, its use has been restricted to OCD patients. For instance, the TAS-P assesses if CBT and/or pharmacotherapy were previously recommended, started, interrupted or declined; the approximate number of CBT sessions attended and/or of weeks of medication use; and the reasons, if any, for non-adherence to these forms of treatment. In our study, we investigated lifetime treatment adherence, including adherence to treatment recommendations made while in our clinic.

2.1 Statistical analyses

Categorical variables were summarized in terms of frequencies and percentages and continuous variables were summarized in terms of means (± standard deviations). Two types of comparisons were made: i) SAD patients vs. patients OCD patients and ii) poor insight SAD patients (BABS ≥ 13) vs. good insight SAD patients (BABS <13). The cut-off score for BABS was empirically defined through the observation of a zone of rarity in the histogram depicting the distribution of

conventional BABS scores over the entire studied sample (data not shown). Chi-square or Fisher's exact test categorical variables and Student's t test or Mann-Whitney test for continuous variables were used.

3. Results

SAD patients were compared to OCD patients in terms of sociodemographic and clinical features (see table 1). SAD patients were predominantly female, belonged to a higher socioeconomic strata, displayed increased rates of alcohol dependence, had more unproductive days at school or work, and reported an earlier onset of symptoms. In contrast, OCD patients displayed higher rates of unemployment, greater religiosity, and a trend towards more frequent prescription of drug treatments.

INSERT TABLE 1

As emphasized in table 1 and described above, insight levels assessed using the BABS were analyzed according to two approaches. When compared to insight levels in OCD patients rated against their primary symptom domain, SAD patients demonstrated equivalent (low) insight levels. However, when compared to insight levels in OCD patients rated across all symptom domains, SAD patients demonstrated significantly lower insight levels. A comparison between SAD and OCD in terms of treatment adherence is depicted in table 2.

INSERT TABLE 2

In relation to SAD, up to 29.7% of the sample (11 patients) exhibited poor insight, defined as a score of 13 or more on the BABS. Poor insight SAD patients were more frequently married and had lower BDI scores than good insight SAD patients (table 3). There were no other distinct differences between the groups, although poor insight SAD patients displayed a statistical trend towards higher rates of CBT non-adherence (table 4).

INSERT TABLE 3 & 4

4. Discussion

In this study, patients with SAD were characterized by levels of insight that were as low as those exhibited by OCD patients – a classical non-psychotic condition that has been more consistently linked with reduced insight (Fontenelle et al., 2010). In fact, the prevalence of poor insight was considerably high in our sample, occurring in approximately 30% of cases. This finding is in sharp contrast to the 1% estimate provided in a previous study that assessed patients' insight into their primary fears as an "all or nothing" phenomenon (Zimmerman et al., 2010). That is, our results suggest that an inability to appraise critically one's own beliefs is in fact a common feature among SAD patients. This observation is therefore consistent with the DSM5 conceptualization of SAD, which no longer requires patients to recognize their symptoms as irrational.

Our study represents the first attempt to dimensionally assess insight levels in SAD, although some authors have already suggested that patients with primary SAD might occasionally report "psychotic-like" experiences (Armando et al., 2013; Veras et al., 2011). It is surprising that only a few such cases have been described so far. As previously theorized, it must be a very short step, one might suppose, from appraising self-referential thoughts critically to believing "delusionally" that one has been observed (Lewis, 1936). In relation to this, it would be interesting to investigate if insight levels in SAD patients fluctuate over time as has been demonstrated in OCD. Long-term follow-up studies of insight levels in SAD patients will be important in clarifying this relevant clinical issue.

We also investigated whether poor-insight SAD was associated with differential features as reported in many OC-related disorders. However, while in OCD, BDD, and eating disorders poor insight has been associated with greater severity of symptoms (including depression), we found the opposite phenomenon in poor-insight SAD patients, who displayed less severe depression, thus suggesting that different mechanisms may mediate the relationship between insight and depression in SAD. It could be argued, for instance, that patients with poor insight SAD apparently suffer from a purer, but not necessarily milder, form of SAD, as they were less depressed than good insight SAD patients.

One possibility is that by not questioning their SAD beliefs, poor insight SAD patients might adjust to their symptoms and perceive them as less distressful, thus experiencing less depression. Alternatively, depression may be an understandable outcome of greater awareness into illness and/or lead to an

increase in self-criticism, thus resulting in greater insight into SAD beliefs and symptoms. In support of the latter interpretation, some have argued that poor insight symptoms (e.g. persecutory delusions) may be a defense against negative affective processes (Bentall et al., 2001). Finally, being in a stable relationship might also provide a "safer" environment for patients with poor-insight SAD, a situation in which they feel protected and less likely to expose themselves to external evaluators.

No other clinical or demographic feature, including sex, age, employment, age at onset, duration of illness, associated psychiatric disorders, SPIN, and SDS scores, were related to insight levels in SAD. Thus, it appears that poor insight SAD and good-insight SAD might in fact represent the same condition, with poor-insight being an occasional phenomenon reported in SAD, although this possibility can only be considered speculative at this point. Cautionary notes aside, we found that assessing insight in SAD patients might have some important clinical implications, as poor-insight patients might discontinue CBT treatment early. This finding suggests that care should be exercised in applying CBT as a first-line treatment in poor insight SAD cases or conversely that serotonin reuptake inhibitors may be first considered.

It is difficult to compare our findings to those of other studies, as none have employed a methodology similar to ours. For instance, Armando et al et al found that SAD patients with psychotic-like experience (PLE) showed higher level of anxiety, depression, and intolerance of uncertainty compared with the SAD without these features (Armando et al., 2013). However, it is not clear how this

group compares to poor insight patients in our study. In fact, the instrument employed in their study [Community Assessment of Psychic Experiences (CAPE)] includes symptoms that are qualitatively different from the ones reported in by our patients (e.g. first-rank symptoms).

Our findings have some implications for the differential diagnoses of SAD. For instance, if SAD can be associated with poor insight, then how it could be differentiated from conditions characterized by self-referential delusions or delusion-like ideas? Although this might pose a diagnostic challenge in cases lacking, for instance, gross first-rank symptoms, there are some potential clues that can be relied upon. While high levels of shame and behavioral inhibition are key features of poor insight SAD patients, who also display a more submissive attitude toward their interlocutors (a construct closer to the so-called "poor me" delusions (Trower and Chadwick, 1995)), indignation and disinhibition characterize most paranoid conditions, which also feature a more distrustful and sometimes hostile attitude toward other people ("bad me" delusions (Trower and Chadwick, 1995)).

Our study has some limitations. Firstly, since there were significant differences between SAD and OCD in sociodemographic and clinical terms, it could be argued that the groups could not be compared reliably. However, the extent to which the reported differences between the groups had the potential to affect "delusionality" is debatable. For instance, the SAD group displayed similar or lower insight than the OCD group despite having lower rates of comorbid depression (which is known to decrease insight in most conditions). Secondly,

our SAD and OCD samples were relatively small, thus resulting in a reduced proportion of patients with SAD with poor-insight. Conceivably, the latter group might be considered insufficient large to detect to additional differences in relation to good insight SAD. Finally, future studies should incorporate a greater number of variables, including more clinician-rated scales, as poor insight can theoretically interfere with the ability to report other non-SAD symptoms reliably.

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Table 1: Comparison of sociodemographic and clinical features presented by patients with social anxiety disorder and patients with obsessive-compulsive disorder.

	Patients with SAD	Patients with OCD	Statistics
Socio-demographic features			
Age (in yrs)	43.7 (13.5)	40.7 (13.7)	t=1.02; df=86; p=0.31
Sex			$\chi 2$=3.65; df=1; p=0.05
Female	12 (32.4%)	27 (52.9%)	
Male	25 (67.6%)	24 (47.1%)	
Marital status			$\chi 2$=3.99; df=1; p=0.53
Never Married	23 (62.2%)	35 (68.6%)	
Ever Married	14 (37.8%)	16 (31.4%)	
Religiosity			$\chi 2$=9.35; df=1; p=0.002
Yes	16 (48.5%)	41 (80.4%)	
No	17 (51.5%)	10 (19.6%)	
Occupation			LR=3.65; df=2; p=0.04
Unemployed or on medical leave	4 (11.1%)	14 (27.5%)	
Employed, retired or student	32 (88.9%)	35 (68.6%)	
Homemaker	0 (0.0%)	2 (3.9%)	
Social Class			LR=5.33; df=2; p=0.03
Upper class	20 (54.1%)	18 (35.3%)	
Middle class	16 (43.2%)	26 (51.0%)	
Lower class	1 (2.7%)	7 (13.7%)	

Education			LR=1.31; df=2; p=0.52
Basic	4(10.8%)	7(13.7%)	
Intermediary	16(43.2%)	16(31.4%)	
High	17(45.9%)	28(54.9%)	
Course characteristics			
Age at onset	11.6 (5.1)	15.5 (7.0)	t=-2.80; df=80; p=0.006
Duration of illness	32.1 (14.7)	25.6 (15.1)	t=1.94; df=80; p=0.05
Insight features			
BABS I	9.1 (4.7)	2.7 (2.3)	t=7.51; df=85; p<0.001
BABS II	9.1 (4.7)	9.5 (5.9)	t=-2.80; df=86; p=0.78
Poor insight based on BABS I	10 (27.0%)	0 (0.0%)	Fisher's test p<0.001
Poor insight based on BABS II	11 (29.7%)	18 (35.3%)	$\chi 2$=0.30; df=1; p=0.58
Severity of Symptoms			
BDI	13.1 (9.8)	15.4 (11.1)	t=-1.00; df=86; p=0.31
SDS	11.4 (8.9)	9.9 (7.8)	t=0.70; df=59; p=0.49
Work/School Work	4.4 (3.3)	2.8 (3.2)	t=1.85; df=60; p=0.07
Social Life/Leisure Activities	4.5 (3.7)	4.4 (3.7)	t=1.11; df=86; p=0.91
Family Life/Home Responsibilities	2.9 (3.0)	4.7 (3.7)	t=-2.44; df=83.3; p=0.02
Days Lost	1.0 (2.1)	1.0 (2.4)	Z=-1.12; p=0.26
Days Unproductive	1.6 (2.3)	0.8 (2.0)	Z=-2.0; p=0.05

Psychiatric Comorbidity			
Major Depressive Episode (lifetime)	18 (50%)	20 (39.2%)	$\chi 2=1.00$; df=1; p=0.31
Dysthymia (current)	8 (22.2%)	6 (11.8%)	$\chi 2=1.70$; df=1; p=0.19
Bipolar Disorder (lifetime)	0 (0.0%)	1 (2.0%)	Fisher's test p=1.00
Bipolar II Disorder (lifetime)	0 (0.0%)	5 (9.8%)	Fisher's test p=0.07
Alcohol Dependence (last year)	6 (16.7%)	0 (0.0%)	Fisher's test p=0.004
Non-alcohol substance dependence (last year)	3 (8.3%)	0 (0.0%)	Fisher's test p=0.06
Panic Disorder (lifetime)	2 (5.6%)	10 (19.6%)	Fisher's test p=0.11
Generalized Anxiety Disorder (current)	7 (19.4%)	14 (27.5%)	$\chi 2=0.73$; df=1; p=0.39

Footnote: SAD: Social Anxiety Disorder; OCD: Obsessive-Compulsive Disorder; BABS: Brown Assessment of Beliefs Scale; BDI: Beck Depression Inventory; SDS: Sheehan Disability Scale;

Table 2: Comparison of some treatment adherence features between patients with social anxiety disorder and patients with obsessive-compulsive disorder

	Patients with SAD	Patients with OCD	Statistics
Has a doctor or other professional ever recommended that you receive CBT for SAD/OCD?	30(81.1%)	40(78.4%)	Fisher's test p=0.79
Have you ever received CBT for SAD/OCD?	17(45.9%)	25(49%)	Fisher's test p=0.83
Did you stop attending CBT before completing therapy?	10(47.6%)	15(62.5%)	Fisher's test p=0.37
Have you ever decided not to participate in CBT despite its being recommended to you by your doctor or another professional?	13(39.4%)	17(47.2%)	Fisher's test p=0.62
Has a doctor or other professional recommended that you take medication for SAD/OCD?	32(86.5%)	50(98%)	Fisher's test p=0.07
Have you ever taken any medication for SAD/OCD?	33(8.3%)	49(96.1%)	Fisher's test p=0.64

Did you ever take the medication less frequently or at a smaller dose than was prescribed, or stopped the medication on your own?	23(43.2%)	31(63.3%)	Fisher's test p=1.00
Have you ever not taken medication for SAD/OCD, even though it was recommended to you?	16(43.2%)	26(52%)	Fisher's test p=0.51

Footnote: This table describes most, but not all items listed on treatment adherence survey-patient version. To avoid multiple comparisons, we have excluded, a priori, comparisons of (i) the number of cognitive behavioral therapy that sessions received, (ii) the total length of time medications were taken, (iii) the reasons why patients did not participate in or stopped attending cognitive-behavioral therapy and (iv) reasons why patients did not receive medication or have taken them less frequently or at a lesser dose than prescribed.

Table 3: Comparison of sociodemographic and clinical features presented by patients with poor- vs. good-insight social anxiety disorder.

	Patients with Poor insight SAD	Patients With Good insight SAD	Statistics
Socio-demographic features			
Age (in yrs)	49.4(12.1)	41.7(13.6)	Z=-1.64; p=0.10
Sex			Fisher's test p=0.44
Male	8(80.0%)	17(63.0%)	
Female	2(20.0%)	10(37.0%)	
Marital status			Fisher's test p=0.02
Married	7(70.0%)	7(25.9%)	
Never Married	3(30.0%)	20(74.1%)	
Religiosity			Fisher's test p=0.08
Yes	1(14.3%)	15(57.7%)	
No	6(85.7%)	11(42.3%)	
Occupation			Fisher's test p=1.00
Unemployed	1(10.0%)	3(11.5%)	
Employed	9(90.0%)	23(88.5%)	
Social Class			LR=0.81;df=2;p=0.66

Upper class	5(50.0%)	15(55.6%)	
Middle class	5(50.0%)	11(40.7%)	
Lower class	0(0.0%)	1(3.7%)	
Education			LR=1.59;df=2;p=0.45
Basic	2(20.0%)	2(7.4%)	
Intermediary	3(30.0%)	13(48.1%)	
High	5(50.0%)	12(44.4%)	
Course characteristics			
Age at onset	13.7(6.8)	10.8(4.3)	Z=-0.94; p=0,34
Duration of illness	35.7(12.9)	30.8(15.3)	Z=-1.07; p=0.28
Severity of Symptoms			
SPIN	27.5(16.7)	43.2(46.2)	Z=-1.22; p=0.22
Fear	9.1(5.4)	12.2(6.9)	Z=- 1.34; p=0.18
Avoidance	12.7(7.6)	15.8(8.2)	Z=-1.22; p=0.22
Physiological disconfort	5.6(4.9)	8.4(6.5)	Z=-1.14; p=0.25
BDI	8.3(8.3)	14.9(9.8)	Z=- 1.92; p=0.05
SDS	10.2(8.8)	11.8(9.1)	Z=- 0.08; p=0.94
Work/School Work	3.7(3.1)	4.6(3.4)	Z=-0.61; p=0.54
Social Life/Leisure Activities	4.6(3.8)	4.5(3.7)	Z=-0.16; p=0.87
Family Life/Home Responsibilities	2.6(3.9)	2.9(2.7)	Z=- 0.84; p=0.39

Days Lost	0.3(1.0)	1.3(2.4)	Z=-1.25; p=0.21
Days Unproductive	1.7(2.4)	1.6(2.3)	Z=-0.08; p=0.93
Psychiatric Comorbidity			
Major Depressive Episode (lifetime)	4(40.0%)	14(53.8%)	Fisher's test p=0.71
Dysthymia (current)	2(20.0%)	6(23.1%)	Fisher's test p=1.00
Bipolar Disorder (lifetime)	0(0.0%)	0(0.0%)	
Bipolar II Disorder (lifetime)	0(0.0%)	0(0.0%)	
Alcohol Dependence (last year)	3(30.0%)	3(11.5%)	Fisher's test p=0.31
Non-alcohol substance dependence (last year)	1(10.0%)	2(7.7%)	Fisher's test p=1.00
Panic Disorder (lifetime)	2(20%)	0(0.0%)	Fisher's test p=0.07
Generalized Anxiety Disorder (current)	0(0.0%)	7(26.9%)	Fisher's test p=0.15

Footnote: SAD: Social Anxiety Disorder; OCD: Obsessive-Compulsive Disorder; BABS: Brown Assessment of Beliefs Scale; BDI: Beck Depression Inventory; SDS: Sheehan Disability Scale;

Table 4: Comparison of some treatment adherence features between patients with poor- and good-insight social anxiety disorder

	Patients with Poor insight SAD	Patients with Good Insight SAD	Statistics
Has a doctor or other professional ever recommended that you receive CBT for SAD/OCD?			Fisher's test p=1.00
No	2(18.2%)	5(19.2%)	
Yes	9 (81.8%)	21 (80.8%)	
Have you ever received CBT for SAD/OCD?			Fisher's test p=1.00
No	6(54.5%)	14(53.8%)	
Yes	5(45.5%)	12(46.2%)	
Did you stop attending CBT before completing therapy?			Fisher's test p=0.06
No	1(16.7%)	10(66.7%)	
Yes	5(83.3%)	5(33.3%)	
Have you ever decided not to participate in CBT despite its being recommended to you by your doctor or another professional?			Fisher's test p=1.00

No	5(55.6%)	15(62.5%)	
Yes	4(44.4%)	9(37.5)%	
Has a doctor or other professional recommended that you take medication for SAD/OCD?			Fisher's test p=1.00
No	1(9.1%)	4 (15.4%)	
Yes	10 (90.9%)	23(84.6%)	
Have you ever taken any medication for SAD/OCD?			Fisher's test p=1.00
No	1(10.0%)	2(7.7%)	
Yes	9(90.0%)	24(92.3%)	
Did you ever take the medication less frequently or at a smaller dose than was prescribed, or stopped the medication on your own?			Fisher's test p=1.00
No	4(36.4%)	10(38.5%)	
Yes	7(63.6%)	16(61.5%)	
Have you ever not taken medication for SAD/OCD, even though it was recommended to you?			Fisher's test p=1.00
No	6(54.5%)	15(57.7%)	
Yes	5(45.5%)	11(42.3%)	

Footnote: This table describes most, but not all items listed on treatment adherence survey-patient version. To avoid multiple comparisons, we have

excluded, a priori, comparisons of (i) the number of cognitive behavioral therapy that sessions received, (ii) the total length of time medications were taken, (iii) the reasons why patients did not participate in or stopped attending cognitive-behavioral therapy and (iv) reasons why patients did not receive medication or have taken them less frequently or at a lesser dose than prescribed.