Juvenile Bipolar Research Foundation

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Parent-reported Obsessive-Compulsive Behavior obtained via an Internet-based Data-Acquisition System

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Background

Obsessive-compulsive disorder (OCD) is a common anxiety disorder characterized by intrusive, repetitive thoughts and/or behaviors that cause significant distress. OCD symptoms frequently co-occur with bipolar disorder symptoms in juvenile-onset bipolar disorder patients. We have accumulated parent-provided data via an internet-based system ("http://www.jbrf.org/research"), by which parents volunteer to provide Yale-Brown Obsessive-Compulsive Scale (YBOCS; Goodman et al. 1989) data on their child. We now report on the first several months' experience with this system, summarizing data on YBOCS items endorsed via the internet-based system by the parents/guardians of 141 children.

Method

YBOCS data were obtained from 141 subjects whose parents/guardians elected to participate in the internet-based data acquisition system (the "internet" subgroup). For comparison purposes, we provide YBOCS data on 96 children in a private psychiatric practice who have been diagnosed with juvenile-onset bipolar disorder according to DSM-IV criteria. In this "comparison subgroup," parents provided responses that were reviewed in their presence, in contrast to the anonymous presentation of the internet subgroup. YBOCS item frequencies and YBOCS total scores were contrasted between these two subgroups.

Results

The study sample consisted of 160 males (73%) and 77 females. Mean age was 10.6 ± 3.8 years (median 10.0). Neither sex nor age distribution differed significantly between the two subgroups. Study sample characteristics are summarized in Table 1.

OCD symptoms were very common in both subgroups. Nearly all had at least one OCD symptom reported (234/237, 99%). The median number of OCD symptoms within the internet subgroup was 9.0 (range 0 - 58); in the comparison group, the median was 5.5 (range 0 - 29). YBOCS total score was substantially higher, on average, in the internet subgroup than in the comparison subgroup (20.0 ± 10.5 vs. 14.6 ± 9.0), and this difference was strongly statistically significant (t[df=235] = 3.81, p<0.001, quantile regression).

OCD symptoms that were identified most frequently in the internet subgroup, in order of frequency, were: difficulty throwing things away (52.5%), violent or horrific images (36.9%), fear harm will come to others (34.8%), fear of losing things (34.0%), fear harm will come to self (31.9%), symmetry rituals (31.9%). These YBOCS items were also endorsed quite frequently with the comparison subgroup. Three of the six highest-ranked items in the internet subgroup have a fear-of-aggression or fear-of-harm theme. All three of these items were also highly ranked within the comparison subgroup: violent/horrific images, rank 2/62; fear harm will come to others, rank 6/62; fear harm will come to self, rank 9/62. On the aggressive subscale of the
YBOCS, both subgroups recorded high scores: internet subgroup, 2.50 ± 2.5; comparison subgroup, 1.94 ± 2.5. This difference, about 29% at the mean, was statistically significant (t[df=235] = 2.39, p=0.018).

YBOCS-defined frequency counts for eight categories of obsessions and seven categories of obsessions are summarized in Table 2. These YBOCS obsessions categories include [1] contamination obsessions, [2] aggressive obsessions, [3] sexual obsessions, [4] hoarding/saving obsessions, [5] magical thoughts/superstitious obsessions, [6] somatic obsessions, [7] religious obsessions, and [8] miscellaneous obsessions. The YBOCS compulsions categories include [1] washing/cleaning obsessions, [2] checking compulsions, [3] repeating rituals, [4] counting compulsions, [5] ordering/arranging compulsions, [6] hoarding/saving compulsions, and [7] miscellaneous compulsions/superstitious behaviors/rituals involving other persons.

Summary counts of the internet and comparison subgroup frequencies in these 15 YBOCS categories, plus summary frequencies in the YBOCS-obsessions and YBOCS-compulsions subscales, are provided in Table 2.

The OCD symptom categories that differed most strongly in prevalence between the internet and comparison subgroups were hoarding/saving compulsions (c2[df=1] = 27.7, p<0.001), aggressive obsessions (c2[df=1] = 10.2, p=0.001), repeating rituals (c2[df=1] = 6.39, p=0.012), ordering/arranging compulsions (c2[df=1] = 5.97, p=0.015), and sexual obsessions (c2[df=1] = 5.73, p=0.017). In all five of these contrasts, the internet subgroup prevalence rate was higher than that of thee subgroup endorsed as having juvenile-onset bipolar disorder according to DSM-IV criteria.

Two aggressive obsessions assessed by YBOCS were especially strongly correlated with obsessive/compulsive morbidity. Within both the Internet and the Comparison subgroups, these obsessions ("Fear harm will come to self" and "Fear might harm self") were strongly predictive of both total count of YBOCS-defined obsessions (Spearman rs = 0.68, p<0.001) and total count of YBOCS-defined compulsions (Spearman rs = 0.41, p<0.001). Both of these associations were more robust in the Comparison subgroup than in the Internet subgroup.

A substantial co-occurrence of YBOCS-assessed obsessive and compulsive symptoms was observed; the Spearman rank-based correlation was Spearman rs = 0.64, p<0.001, assessed across all subjects. This correspondence is shown graphically in Figure 1, which is a scatterplot of count of YBOCS-assessed obsessive symptoms vs. YBOCS-assessed compulsive symptoms. This correspondence appears to be substantially stronger, especially among juveniles with relatively high counts of both obsessive and compulsive symptoms, in the Internet subgroup compared to the Practice subgroup. These associations are shown in Figure 2.

Discussion

The mean YBOCS total score and the number of YBOCS items endorsed by the parents/guardians using the Internet-based system were substantially larger, on average, than the YBOCS mean score and the number of endorsed YBOCS items in the Comparison subgroup of juveniles formally diagnosed (DSM-IV) with bipolar disorder. The YBOCS items most commonly endorsed by the Internet subgroup parents were in the category of aggressive obsessions a fear-of-harm to self or fear that harm will come to self In the Comparison group, these items, while endorsed at high rates, were endorsed significantly less frequently than in the Internet subgroup.

These differences in OCD symptom endorsement frequencies may be due to the different contexts in which the data were obtained. Data acquisition via the anonymous Internet method may allow parents to be more forthcoming. Alternatively, juveniles in the Internet subgroup may have more severe bipolar disorder symptoms or the Internet-based recruitment method may be selective for a subgroup of parents whose children have more prominent OCD symptoms.

These findings suggest that an internet-based system of data acquisition identifies a group of children with higher rates of and, therefore, possibly more severe comorbid OCD symptoms than in a comparison group of cases formally diagnosed with bipolar disorder. Additionally, a specific set of OCD symptoms (Hoarding/saving obsessions and compulsions and aggressive obsessions) may be associated with bipolar disorder in youth or be associated with a more complex syndrome, or a subtype, whose recognition in the clinical setting may improve the identification and differential diagnoses of bipolar disorder in youth. The predominance of aggressive obsessions in the cases suggests the possibility that poor control of aggressive impulses, a characteristic feature of juvenile-onset bipolar disorder, may result in secondary anxiety symptoms and maladaptive behaviors expressed in the form of aggressive obsessions.

Table 1.

Age/sex characteristics in 141 juveniles whose parents provided YBOCS information via an Internet-based data acquisition system (internet group) and 96 patients diagnosed according to DSM-IV criteria with juvenile-onset bipolar disorder (comparison)

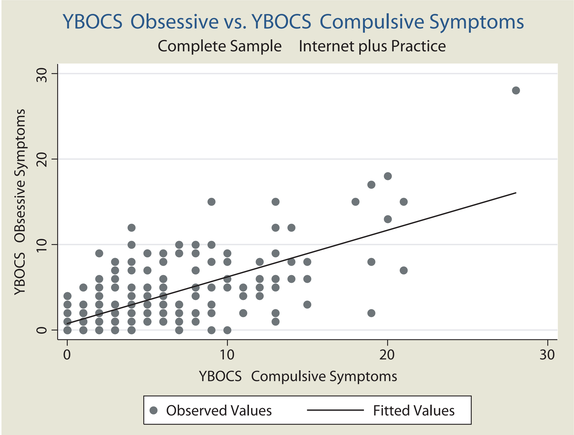
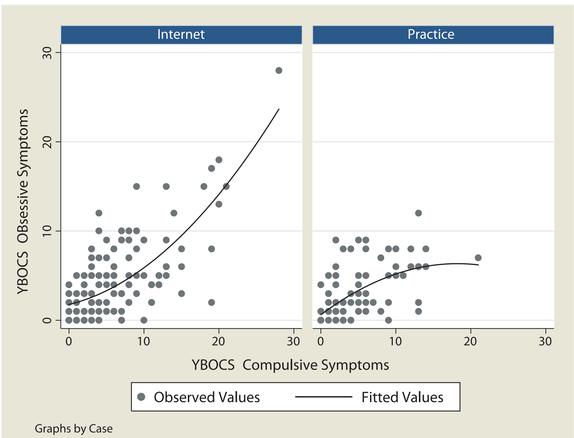
	Internet	Comparison
Number (%)	141	96
Sex: Girls (N, %)	51 (36%)	26 (27%)
Boys	90 (64%)	70 (73%)
Age (years)[a]	10.4 ± 3.7 (3–19)	10.8 ± 4.0 (2.5–23)

a. Age in years is reported as mean ± SD (range).

Table 2.

Obsessive-compulsive symptoms in 141 juveniles whose parents provided YBOCS information via an internet-based data acquisition system (internet group) and 96 patients diagnosed according to DSM-IV criteria with juvenile-onset bipolar disorder (comparison)

Measure[a]	Internet	Comparison	x^2 or t[b]	p
Number (%)	141 (59.5)	96 (75.0)	–––	–––
OCD symptoms >1 (N, %)	134 (95.0)	76 (79.2)	14.2	<0.001
OCD symptoms (count)	10.3 ± 9.2 (0,56)	6.9 ± 6.8 (0,28)	3.19 [b]	0.001
YBOCS-defined-obsessions:				
Any YBOCS-obsession	115 (81.6)	66 (68.8)	5.19	0.023
Contamination obsessions	78 (55.3)	44 (45.8)	2.06	0.15
Aggressive obsessions	102 (72.3)	50 (52.1)	10.2	0.001
Sexual obsessions	41 (29.1)	15 (15.6)	5.73	0.017
Hoarding/saving obsessions	48 (34.0)	14 (14.6)	11.2	0.001
Superstitious obsessions	18 (12.8)	12 (12.5)	0.01	0.95
Somatic obsessions	42 (29.8)	18 (18.7)	3.68	0.055
Religious obsessions	19 (13.5)	8 (83)	1.50	0.22
Miscellaneous obsessions	56 (39.7)	30 (31.2)	1.77	0.18
YBOCS-defined-compulsions:				
Any YBOCS-compulsion	128 (90.8)	72 (75.0)	10.8	0.001
Washing/cleaning compulsions	26 (18.4)	16 (16.7)	0.12	0.73
Checking compulsions	35 (24.8)	12 (12.5)	5.46	0.020
Repeating rituals	44 (31.2)	16 (16.7)	6.39	0.012
Counting compulsions	19 (13.5)	9 (9.4)	0.93	0.34
Ordering/arranging compulsions	45 (31.9)	17 (17.7)	5.97	0.015
Hoarding/saving compulsions	81 (57.5)	22 (22.9)	27.7	<0.001
Miscellaneous compulsions	65 (46.1)	43 (44.8)	0.04	0.84

a. Reported are number and percentage (%) of subjects with specified obsession/compulsion, except for OCD symptoms (count), for which mean ± SD (range) are reported.

b. Degrees-of-freedom (df): df=1 for c2, df=126 for t (OCD symptoms count).