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The effect of treatment on quality of life and functioning in OCD

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Abstract

Background—Given that Obsessive Compulsive Disorder (OCD) is associated with impaired quality of life (QoL) and functioning, it is important to examine whether therapeutic recovery from OCD leads to improvements on these important secondary outcomes. Only a few studies have examined how measures of OCD symptom severity relate to QoL and functioning among patients receiving treatment for OCD.

Methods—OCD severity was measured with the Obsessive-Compulsive Inventory-Revised (OCI-R), a self-report scale of OCD, and the Yale-Brown Obsessive Compulsive Scale (Y-BOCS), an interview measure of OCD. Participants were 100 adults with a primary diagnosis of OCD on serotonin reuptake inhibitors (SRIs) enrolled in a randomized clinical trial comparing SRI augmentation with either exposure and response prevention (EX/RP) therapy, risperidone, or pill placebo. At baseline, mid-treatment, and post-treatment, patients completed assessments for OCD symptoms and QoL/functioning measures. Multilevel modeling was used to assess changes in QoL/functioning over the course of treatment and to compare such changes across treatment conditions.

Results—Improvements in QoL/functioning were significantly greater among those receiving EX/RP compared to those receiving risperidone. Compared to pill placebo, EX/RP performed better on measures of functioning but not QoL. Greater improvement in individual OCI-R scores was associated with greater improvements in QoL/functioning, regardless of condition. In addition, Y-BOCS scores appeared to moderate improvements in QoL over the course of all treatment conditions, such that those with higher Y-BOCS scores showed the greatest improvements in QoL over time.

Conclusions—Improvements in QoL/functioning were associated with reduction in OCD symptom severity. The implications on OCD treatment and clinical research are discussed.

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Keywords

OCD; quality of life; assessment; empirical supported treatments; pharmacotherapy

Obsessive Compulsive Disorder (OCD) is associated with significant disruptions in functioning across multiple settings (work, home, and social life), leading to significant impairment in these important areas of daily living.^[1] Recent examinations of the burden of OCD found an average of 46 days lost to work in the last year as a function of the disorder,^[1] significant expenditure on treatment for OCD and related symptoms,^[2] and high levels of life dissatisfaction reported by individuals with OCD.^[3] There is ample support for the efficacy of exposure and response prevention (EX/RP) and serotonin reuptake inhibitors (SRIs) both as single treatments, and as augmentation treatments for OCD symptoms.^[4, 5] However, given the observable and documented deleterious effects of OCD on functioning and quality of life, it is important to better understand how evidence-based treatments for OCD impact improvements in these areas, and relatedly, how changes in OCD severity are associated with such improvements.

Quality of life (QoL) is a construct that encompasses how satisfied or content one is with his/her current life, while functioning relates to how well an individual is performing in various areas of daily living compared to their maximum potential.^[6, 7] Both QoL and functioning can be affected by the breadth and depth of social networks, personal happiness, ability to work or keep social commitments, and interference with, and daily enjoyment of, basic life activities.^[8, 9] In terms of their relationship to OCD, studies typically show that QoL and functioning indices are negatively related to severity of OCD symptoms.^[10, 11] For instance, a multi-study analysis by Farris, McLean, Van Meter, Simpson, and Foa^[12] found that lower OCD symptom severity at post-treatment significantly predicted better quality of life and higher adaptive functioning. Others have found that greater obsessions and compulsions have contributed to poorer physical and mental health functioning.^[13, 14] For a review, see Subramaniam, Soh, Vaingankar, Picco, and Chong.^[15] Taken together, the handful of studies examining changes in QoL or functioning over the course of treatment have found that EX/RP in particular is associated with significant improvements in these secondary outcomes.^[16, 17]

The way OCD is measured is an important consideration in this discussion. For example, the Yale-Brown Obsessive Compulsive Scale (Y-BOCS) is one of the most widely-utilized clinician-administered measures of OCD and was used in the majority of the studies examining the impact of OCD severity on QoL. However, The Y-BOCS consists of two interrelated parts, the first of which is a checklist of obsessions and compulsions, followed by the severity scale of these symptoms over the prior week; both parts of the measure take clinicians typically 50–60 minutes to administer. Therefore, while the Y-BOCS has been well-validated and widely used as the gold standard of OCD symptom severity assessment, it requires administration by a trained clinician and is significantly lengthy to administer.

The Obsessive-Compulsive Inventory, revised version (OCI-R)^[18] is an 18-item self-report measure of OCD symptom severity, which has also been well-validated across different samples, and shows high convergence with the Y-BOCS.^[19, 20] It has the advantage over the

Y-BOCS of being more easily administered (since it is a self-report), and taking only 5–10 minutes for patients to complete. The OCI-R assesses the presence and severity of six OCD symptom domains (e.g., washing, checking), and therefore provides specific information about the severity of specific obsessions and compulsions whereas the Y-BOCS provides general information about the severity of OCD.

Several studies have examined the relationship between the Y-BOCS as the measure of OCD severity and measures of QoL and functioning, yielding mixed results.^[21–25] Fewer studies have examined the relationship between OCI-R and QoL or functioning, but these generally have found negative associations between OCI-R total severity and QoL and functioning.^[13, 19] Notably, no studies have examined the longitudinal prediction of QoL and functioning over time, or how changes in OCD symptoms are related to concurrent improvements in QoL at multiple points throughout treatment with either of these OCD measures. This information is critical to understanding how reductions in OCD symptoms are associated with improvement in patients' overall QoL and ability to function in their daily lives, and whether specific treatment strategies facilitate such changes better than others.

The present study addresses these research gaps by examining the relationship between the Y-BOCS and the OCI-R to QoL/functioning among patients on SRIs enrolled in an 8-week randomized controlled trial where they received either EX/RP, risperidone, or pill placebo treatment for OCD. We hypothesized that: (1) improvements in QoL/functioning would be related to reductions in OCD symptom severity, across treatment conditions; (2) there would be similar relationships between improvements in QoL/functioning and reductions in Y-BOCS and OCI-R, with severity of OCD on both measures moderating these outcomes across treatment conditions; and (3) given previous data showing significant improvements in QoL/functioning specifically in those receiving EX/RP,^[16, 17] improvements in QoL/functioning would be greater over the course of EX/RP in comparison to the other treatments. We also examined whether there was a lagged effect of OCD severity on subsequent QoL/functioning; we predicted that that OCD severity would influence later improvements in QoL/functioning.

Material and Methods

2.1 Participants

Participants were 100 adults with a primary DSM-IV diagnosis of OCD recruited at outpatient academic research centers in Pennsylvania (50%) and New York (50%). Fifty-two were female (52%) and 48 were male (48%). They had a mean age of 33.90 years ($SD = 11.30$). Ninety-one participants were white (91%), five were Asian/Pacific Islander (5%), three were Black (3%), and one reported his race as Other (1%). All participants were on a SRI at a stable dose but still had clinically significant OCD symptoms (Y-BOCS ≥ 16). Exclusion criteria included bipolar or psychotic disorder diagnosis, substance abuse or dependence in past 3 months, or prominent suicidal ideation. For detailed description of the study and inclusion/exclusion criteria, see Simpson, Foa et al.^[26] Patients' baseline scores on measures of interest can be found in Table 1.

2.2 Procedure

After being evaluated by a trained clinician using the Structured Clinical Interview for DSM-IV Axis I Disorders–Patient Edition,^[27] eligible participants provided informed consent and enrolled in the study. While staying at the same dose of their SRI, participants were randomized to risperidone, EX/RP, or pill placebo (allocated 2:2:1). Those receiving risperidone or pill placebo received identical capsules at 0.25 mg/d for 3 days, 0.5 mg/d for 4 days, and then increases of 0.5 mg per week to a maximum of 4.0 mg/d if clinically indicated. EX/RP was provided in 17 twice-weekly, 90-minute sessions with a study therapist over 8 weeks. These sessions included two introductory sessions and 15 exposure sessions involving patients' facing their obsessional fears for a prolonged period without ritualizing, daily self-directed exposure assigned as homework, and telephone check-ins between sessions. All participants met regularly with the study psychiatrist for medication management; those receiving risperidone or pill placebo saw the psychiatrist every 1–2 weeks and those receiving EX/RP saw the psychiatrist every 4 weeks during treatment.

At baseline (week 0), mid-treatment (week 4), and post-treatment (week 8), as well as every four weeks during six months of follow-up (weeks 12, 16, 20, 24, 28, and 32), patients met with independent evaluators (i.e., blind to treatment) and filled out self-report questionnaires. The independent evaluators were trained clinicians (Master's level or above) who were clinically experienced with OCD but otherwise had no contact with study patients. The evaluators administered the Y-BOCS^[28, 29] to assess for OCD symptoms. The self-report questionnaires included the OCI-R;^[18] the Quality of Life Enjoyment and Satisfaction Questionnaire–Short Form (QLESQ-SF);^[6] the Social Adjustment Scale–Self-report (SAS-SR);^[30] and the Sheehan Disability Scale (SDS).^[31] Due to insufficient data in the follow-up phase for planned analyses, only data from the acute treatment phase was analyzed in the present study. Additional details about the procedure, selection of study participants, and training procedures for therapists and evaluators can be found in the main text and supplementary materials of the primary outcome paper for the study.^[26]

2.3 Measures

2.3.1 Obsessive-Compulsive Inventory–Revised (OCI-R)—The OCI-R^[18] is an 18-item self-report measure assessing the presence and severity of OCD symptoms, each rated from 0 (*not at all*) to 4 (*extremely*). The measure yields a total score of 0–72 and is divided into six subscales containing 3 items each. The OCI-R demonstrates good test-retest reliability and convergent and discriminant validity.^[18] In the present sample, Cronbach's $\alpha = .72$ –.89 across the three assessment points.

2.3.2 Yale-Brown Obsessive Compulsive Scale (Y-BOCS)—The Y-BOCS^[28, 29] is a semi-structured clinical interview comprised of a symptom checklist measuring the presence of various obsessions and compulsions, as well as a 10-item scale assessing the severity of obsessions and compulsions. The severity scale rates each item on a scale from 0 (*no symptoms*) to 4 (*extreme*) to provide a total score from 0–40, as well as two subscales. The Y-BOCS has shown excellent inter-rater reliability and good convergent validity.^[32] In the present sample, Cronbach's $\alpha = .73$ –.96.

2.3.3 Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form

(QLESQ-SF)—The QLESQ-SF^[6] is a self-report measure of life satisfaction, with 16 items rated from 1 (*very poor*) to 5 (*very good*) to produce a score from 0–80. The measure is reliable and valid.^[6] In the present sample, Cronbach's $\alpha = .85-.90$.

2.3.4 Social Adjustment Scale-Self-Report (SAS-SR)—The SAS-SR^[30] is a 54-item self-report measure of functioning in various domains such as family, social, work, and academic life. Participants only completed sections that applied to them. Items are rated on a 5-point Likert scale, with higher scores indicating greater impairment, to yield a mean score of all items completed from 1.0–5.0. The scale has been found to have adequate reliability.^[33]

2.3.4 Sheehan Disability Scale (SDS)—The SDS^[31] is a three-item self-report measure of functional impairment, with questions assessing work, social life/leisure activities, and family life/home responsibilities. Questions are rated on a scale from 0 (*not at all impaired*) to 10 (*very severely impaired*), with total scores ranging from 0–30. The scale has been found to have high internal consistency and construct validity.^[34] In the present sample, Cronbach's $\alpha = .67-.89$.

2.4 Data Analysis

Multilevel modeling was used to assess changes in QoL and functioning measures over the course of treatment. Unconditional growth curve models were fit separately for each variable of interest, which allows us to determine the best fitting shape of the growth trajectory (linear, quadratic, hyperbolic, or log-linear transformations) of each variable over time. Akaike's Information Criterion (AIC) and Schwarz's Bayesian Criterion (BIC) were then examined to compare models and determine best model fit, with smaller values indicating a better model fit.^[35] Results from these preliminary analyses showed that change over time in QLESQ-SF and SAS-SR were best modeled with a log transformation of time while SDS was best modeled using linear time. In terms of error-covariance structures, preliminary analyses also revealed that QLESQ-SF and SDS were best modeled using an autoregressive error-covariance structure while SAS-SR was best modeled using the Toeplitz-homogeneous error-covariance structure. Next, the inclusion of random effects for the intercept and time was tested. For the final models, QLESQ-SF and SDS included a random effect for the intercept only and SAS-SR did not include any random effects.

Linear mixed models were used to assess for change over time in each variable. Following this, treatment condition was added as a predictor to investigate whether change over time in each variable (Y-BOCS, OCI-R, QLESQ-SF, SAS-SR, SDS) differed due to treatment condition. Additionally, we introduced OCD symptom severity as measured by the Y-BOCS or OCI-R as potential moderators of the change in QoL/functioning over time (e.g., as assessed by a significant time by OCD severity interaction). Based on prior research showing that relationships with time-varying predictors may be due to either between- or within-person differences,^[36] we disaggregated the between- and within-subject effects of the Y-BOCS and OCI-R prior to adding these variables to the models.

Lastly, in order to test the lagged effects of OCD symptom severity on subsequent improvements in QoL and functioning, all QoL and functioning measures were lagged by one time point to test whether OCD severity at time t accounted for change in these outcomes at time $t + 1$ using linear mixed models. All analyses were conducted with the intent-to-treat sample. Because multilevel modeling is robust to missing data due to dropout and does not exclude such data, we did not require replacement or imputation of missing values. For additional details regarding dropouts, see the main outcome paper.^[26] Data analyses utilized the IBM SPSS Statistics program (version 22) with the linear mixed model procedures outlined in Heck, Thomas, and Tabata^[35] and Shek and Ma.^[37]

Results

3.1 Changes in QoL/functioning and OCD over time

Over the course of treatment, there was a significant increase in QLESQ-SF scores ($B = 16.04$, $t(104.41) = 5.02$, $p < .001$), and decrease in SAS-SR scores ($B = -0.43$, $t(92.99) = -5.07$, $p < .001$) and SDS scores ($B = -2.66$, $t(97.22) = -7.87$, $p < .001$) across treatments. In addition, OCD symptom severity decreased significantly over time (Y-BOCS: $B = -3.95$, $t(90.89) = -8.54$, $p < .001$; OCI-R: $B = -4.65$, $t(227.29) = -7.62$, $p < .001$). Further, changes in Y-BOCS and OCI-R scores from pre-mid, mid-post, and pre-post treatment time-points were highly correlated (all p -values $< .001$).

3.2 Relationship between OCD symptoms and QoL/functioning

The linear mixed model analysis revealed main effects for between- and within-person differences in both the Y-BOCS and OCI-R scores on all QoL and functioning measures. Specifically, individuals with higher than average Y-BOCS or OCI-R scores at post-treatment tended to endorse poorer QoL and functioning (all p -values $> .018$).

Furthermore, when examining whether the levels of the Y-BOCS moderated improvements in QoL/functioning measures, analyses revealed a significant between-subject Y-BOCS by time interaction for QLESQ-SF ($B = 1.60$, $t(133.43) = 2.40$, $p = .018$). Thus, improvements in QoL depended in part on whether an individual had a higher or lower than the average Y-BOCS score across the sample, with those with consistently higher than average Y-BOCS scores over the course of treatment showing the greatest improvement in QoL. Neither between or within-subject differences in Y-BOCS scores moderated the scores on the SAS-SR or SDS (p -values $> .125$).

In terms of the OCI-R as a potential moderator, within-subject changes in OCI-R scores moderated both QLESQ-SF ($B = -1.11$, $t(130.24) = -2.15$, $p = .033$) and SDS ($B = .12$, $t(127.85) = 2.37$, $p = .019$) but not SAS-SR. In other words, greater reductions in OCI-R scores were associated with greater improvements in QoL and functioning.

The significant time by OCD symptom interactions were further tested for differences by treatment group; the result of the three way interactions (time by Y-BOCS by treatment group or time by OCI-R by treatment group) were not significant ($p > .286$). Therefore, the observed moderating effects of Y-BOCS and OCI-R on QoL were the same regardless of treatment condition.

3.3 Changes in QoL/functioning by condition

Improvements in QLESQ-SF, SAS-SR, and SDS were greater among patients receiving EX/RP as compared to risperidone (all p -values $\leq .011$), and greater in those receiving EX/RP compared to pill placebo across both functioning measures (SAS-SR and SDS) (p -values $\leq .005$) but not QLESQ-SF ($p = .073$; see Figures 1–3). QoL and functioning improvement were not significantly different over the course of treatment in risperidone versus pill placebo (p -values $\geq .428$). Specifically, QLESQ-SF increased significantly over time in the EX/RP group ($B = 25.70$, $t(93.88) = 5.40$, $p < .001$) but the change in slope over time was not significant in the risperidone or pill placebo groups (p -values $\geq .117$). Likewise, SAS-SR decreased over time only in the EX/RP group ($B = -.75$, $t(88.42) = -6.25$, $p < .001$) and not in the risperidone ($p = .052$) or pill placebo groups ($p = .662$). In contrast, SDS decreased significantly over time in all three groups (p -values $\leq .021$), but showed a greater decrease over time during EX/RP than the other groups (see Figure 3).

3.4 Lagged effects of OCD severity on QoL and functioning

The time-lagged analyses revealed that between-subject differences in Y-BOCS severity at time t predicted QoL and functioning at time $t + 1$ (p -values $\leq .019$). Specifically, within-person changes in Y-BOCS severity predicted subsequent changes in QLESQ-SF ($B = .46$, $t(102.75) = 2.22$, $p = .029$) but not in the SAS-SR or SDS (p -values $\geq .413$). Within-subject changes in OCI-R did not predict subsequent changes in any of the QoL/functioning measures (p -values $\geq .366$).

Discussion

This study examined how OCD symptom improvement as measured by the Y-BOCS and the OCI-R impacted QoL and functioning in patients undergoing one of three treatments for OCD. As hypothesized, improvements in OCD symptom severity, regardless of the treatment received, was related to reduction in QoL and functioning. Specifically, patients with higher than average OCD symptoms tended to endorse poorer QoL and functioning. These findings are consistent with previous studies showing significant negative associations of OCD severity to QoL and functioning,^[10, 11] and align with the idea that OCD is a burdensome disorder that impacts how meaningful or enjoyable a person with OCD finds his or her life.^[1, 3]

We further hypothesized that the Y-BOCS and OCI-R would show similar relationships to QoL/functioning, and to this end, some differences in the information captured between the measures were observed. In particular, within-subject decrease in OCD symptoms as measured by the OCI-R was associated with increases in QoL and functioning, suggesting that as patients' OCD symptoms improved (as measured by the OCI-R), their QoL and functioning also improved. These relationships were not evident when OCD severity was measured with the Y-BOCS. However, when OCD symptom severity was measured by the Y-BOCS, OCD symptom severity moderated the improvement in QoL over time, with results showing that those with higher Y-BOCS scores showed the greatest improvements in QoL over time. This was found possibly because these more impaired participants had greater room for improvement in QoL, given the significant association between higher

severity of OCD and poorer QoL overall. The OCI-R did not reveal such a moderating effect. The inconsistent findings between the OCI-R and Y-BOCS may be due to two differences in the measures. First, the OCI-R measures severity of six main OCD obsessive or compulsive symptom clusters whereas the Y-BOCS does not measure individual OCD symptom severity but rather, the degree to which the OCD symptoms cause interference and distress. Second, the Y-BOCS severity reflects the perception of the clinician conducting the interview with the patient, whereas the OCI-R is a self-report measure (similar to the measures of QoL and functioning completed by patients), which may further account for the observed differences between the two measures.

Our hypothesis that improvements in QoL and functioning would be significantly greater among those receiving EX/RP compared to those receiving risperidone or pill placebo was largely supported. Specifically, EX/RP performed better on all three measures as compared to risperidone, and on both measures of functioning (but not QoL) compared to pill placebo. In addition, there was a significant relationship between OCD symptom severity and QoL/functioning, with higher OCD symptoms being associated with poorer QoL and functioning across all three treatments. These findings are consistent with both the main outcome findings for this study^[26] and other findings showing such improved secondary outcomes as a result of empirically supported treatments for OCD and anxiety disorders in general.^[16, 17, 19, 23]

To better examine potential effects of changes in OCD symptoms on QoL and functioning, a lagged time model was used to test whether OCD symptoms at one time point predicted subsequent QoL/functioning at the next time point. The results revealed that those with higher OCD severity showed poorer QoL and functioning at the subsequent assessment; this is consistent with the view that greater OCD symptom severity would be associated with greater subsequent impairment. Interestingly, within-person changes in Y-BOCS severity were associated with subsequent changes in QoL, with decreases in Y-BOCS scores predicting better QoL at the next assessment. These results suggest that reduction in OCD symptoms during treatment lead to subsequent improvements in QoL. The results of this study are consistent with previous research showing significant cross-sectional associations between symptom severity as measured by the Y-BOCS and QoL/functioning.^[14, 21, 23] Importantly, the present study builds upon prior work by examining how changes in Y-BOCS and a wider array of QoL/functioning measures relate to each other at multiple points throughout treatment for OCD. Our results suggest that QoL and functioning are influenced by improvements in OCD symptom severity, particularly as measured by the Y-BOCS. These time-lagged effects were not observed when using the OCI-R as the measure of OCD symptom severity.

This study has several notable strengths, including the use of a longitudinal design to examine changes in OCD severity and QoL/functioning rather than a cross-sectional design utilized in previous research. Relatedly, the use of multilevel modeling techniques to examine the changes between these constructs over time, and using an analytic method that accommodates missing data, is an important contribution of this study. The study utilized a fairly large treatment sample, compared several different OCD treatments, and examined

multiple measures of QoL and functioning and OCD symptom severity that were administered at multiple time-points throughout the study.

This study also has several limitations and highlights areas in need of future examination. First, it would have been valuable to examine how changes in OCD and QoL/functioning were related not only in the acute treatment phase (as examined here), but in follow-up phases of the study as well. While the study included a follow-up phase, analyses could not be conducted because of low power due to significantly greater missing data in the follow-up assessments. In addition, more frequent measurement points during the acute treatment phase would have allowed for a more fine-tuned analysis of the relationship between OCD severity and QoL/functioning; such a design in future studies would be more feasible with the OCI-R given its brevity and high degree of convergence with the Y-BOCS. It should also be noted that all study participants received an active treatment (i.e., an SRI) and therefore there was no “true” placebo group (such as waitlist control) to which to compare the treatment groups. Despite this, we found significant group differences with EX/RP performing better on measures of functioning but not QoL. It is possible that QoL improved across all groups equally due to the common use of SRIs across all conditions.

Conclusions

Taken together, it appears that both OCD and QoL/functioning improve over the course of treatment and that reductions in OCD symptom severity predict improvements in QoL and functioning. Some differences emerged between the Y-BOCS and OCI-R, with each measure being more or less sensitive to between- and within-person changes in QoL and functioning. Relative to the clinician-administered Y-BOCS, the brevity and ease of administration of the self-report OCI-R measure renders this instrument a good candidate for widespread use, given the present results showing its association with important secondary outcomes such as QoL and functioning.

Future examinations should consider inclusion of broader assessments of functioning and QoL (including collateral report, if possible), as this might help parse out how different treatment approaches impact these important secondary outcomes in OCD. Further, it would be important to explore additional factors that may independently and separately account for the concurrent improvements in OCD and QoL/functioning as either observed in cross-sectional studies (e.g. depression,^[25]) or hypothesized to be related to these secondary outcomes (e.g. motivation to change, or emotion regulation capabilities). Indeed, more detailed information about how efficacious treatments for OCD (such as EX/RP) influence satisfaction and functioning in daily life could provide further support for their use and promote greater delivery to, and acceptability of, such treatments for people with OCD.

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Figure 1. Change in quality of life as measured by the Quality of Life Enjoyment and Satisfaction Questionnaire–Short Form; EX/RP = exposure and response prevention therapy.

Figure 2.
Change in functioning/disability as measured by the Social Adjustment Scale–Self-report;
EX/RP = exposure and response prevention therapy.

Figure 3.
Change functioning/disability as measured by the Sheehan Disability Scale; EX/RP = exposure and response prevention therapy.

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Table 1

Participants' scores by time point on variables of interest.

Measure	Baseline		Mid-Tx		Post-Tx	
	M	SD	M	SD	M	SD
Y-BOCS Total	26.50	4.22	21.59	6.09	18.56	8.76
OCL-R Total	27.36	11.91	21.88	10.55	18.08	11.60
QLESQ-SF	55.26	15.46	61.54	14.86	63.06	15.94
SAS-SR	2.25	0.50	2.11	0.47	2.05	0.44
SDS	16.67	6.16	14.03	7.07	11.19	7.17

Note. M = mean; SD = standard deviation; Tx = treatment; Y-BOCS = Yale-Brown Obsessive Compulsive Scale; OCL-R = Obsessive-Compulsive Inventory-Revised; QLESQ-SF = Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form; SAS-SR = Social Adjustment Scale-Self-Report; SDS = Sheehan Disability Scale.