Chapter 9: Summary and Discussion

Outline

The present thesis had two main objectives. Chapters 2 to 4 are grouped in the first objective, the assessment of relations between obsessive-compulsive spectrum disorders (OCSDs) and cognitions. In chapter 2 and 3, the relations between obsessive-compulsive disorder (OCD), Tourette’s Syndrome (TS), and pathological gambling (PG) are investigated both in terms of OCD symptoms, and in levels of OCD dysfunctional cognitions. In chapter 4, relations between OCD, attention deficit/hyperactivity disorder (ADHD), and autism symptoms in OCD patients are researched.

Chapters 5-8 relate to the second objective, assessment and treatment issues in OCD. Chapter 5 concerns the investigation of the revised version of the Obsessive Beliefs-Questionnaire (OBQ-44), in order to test its sensitivity to change and to examine relations between OCD beliefs and symptoms before and after behavioral treatment. In chapter 6, the differences between two major OCD measures are assessed; the Padua Inventory-Revised (PI-R), and the Yale-Brown Obsessive Compulsive Scale (Y-BOCS), and hypotheses explaining the differences are evaluated. In chapter 7, the factor structure of the Y-BOCS, the golden standard for the measurement of OCD, is analyzed through the use of a large patient sample. Finally, chapter 8 concerns the investigation of treatment change of behavior vs. cognitive therapy for OCD.
Summary and discussion

Assessment of OCSD’s and cognitions

OCD and pathological gambling

The obsessive-compulsive spectrum disorders (OCSD) theory views pathological gambling (PG) as a part of OCSDs, positioned on the impulse end of the impulsivity-compulsivity continuum (Hollander and Wong, 1995a; Hollander and Wong, 1995b). To date, there has been only one study that investigated the occurrence of OCD symptoms within a group of pathological gamblers and it found increased OC scores on an OC symptom scale (Blaszczynski, 1999). However, no direct comparisons with OCD patients have been conducted for either the occurrence of OCD symptoms, or the presence of OCD dysfunctional cognitions. The current study sought to investigate relations between OCD and PG through the comparison of OCD with PG, with panic disorder patients and healthy subjects serving as control groups. We hypothesized that both PG and OCD patients would display both elevated OCD symptoms as well as OCD cognitions compared to panic patients and normal controls.

The results of the present study indicated no significant differences in OCD dysfunctional cognitions between OCD and PG patients (besides one subscale- the “overestimation of threat”, which was increased in the OCD patients), whereas patients with panic disorder and normal controls demonstrated lower levels of OCD cognitions. It has to be noted, that while lower than OCD patients, PG patients’ scores of “overestimation of threat” seemed elevated compared with normal controls. Further, panic patients exhibited decreased obsessive beliefs questionnaire (OBQ) scores, only on
two of the subscales “inflated responsibility” and “overestimation of threat”, so that their scores were higher in most subscales than those of the normal control group. The results of the comparison of OCD symptoms between the groups were very different. OCD patients presented with higher levels of OCD symptoms than all other groups, and panic disorder patients presented with higher levels of OCD symptoms than PG patients.

From the perspective of the OCD cognitions, the spectrum hypothesis is supported, but from the perspective of OCD symptoms, it is contradicted. It is our opinion that the symptoms are more essential in determining the relatedness of different disorders, whereas cognitions are hypothetical constructs believed to cause and maintain these symptoms.

The results cast doubts about the cognitive theory of OCD, that (mis)interpretation of intrusive thought is causal to OCD. If certain cognitions are specific to OCD patients, how can the fact that pathological gamblers have similar levels of these cognitions be explained? A complementary question is: if certain beliefs cause OCD symptoms, how can pathological gamblers exhibit high levels of these beliefs, yet low levels of OCD symptoms? The OBQ-87 did not present in this study satisfactory discriminant validity. This is in contrast with the Padua-R, which discriminated well between all research groups.

**OCD-tics, OCD+tics and Tourette’s Syndrome**

The OCSD theory views Tourette’s Syndrome (TS) as a part of obsessive-compulsive spectrum disorders (OCSD), belonging to the cluster of neurological disorders (Hollander and Wong, 1995a; Hollander and Wong, 1995b). In
this study we investigated whether the cognitive theory of OCD applies better for OCD-tic patients vs. OCD+tic patients, for whom symptoms may be more related to sensory phenomena and less cognitively mediated. Such results might explain the results of our previous research, and the failure of the OBQ-87 to distinguish between OCD and PG patients, since it included both OCD+tic and OCD-tic patients. Further, OCD cognitions in TS, OCD-tic and OCD+tic patients have never been researched before. We hypothesized that OCD-tic patients would exhibit more OCD dysfunctional cognitions that OCD+tic patients and panic controls.

Our results indicated that OCD-tic subjects did not exhibit higher scores of dysfunctional OC beliefs than OCD+tic subjects. TS patients exhibited increased OCD belief and symptom scores on some of the subscales, though lower overall levels than OCD subjects. Interestingly, on the Padua-r the only difference between OCD+tics and OCD-tics was the washing subscale.

The findings of the present study indicate problems with the low discriminant validity of the OBQ-87, which remains a problem for the cognitive theory of OCD. We suggest that dysfunctional cognitions may be less specific to OCD, and constitute risk factors for psychopathology in general, or that dysfunctional cognitions are by-products, rather than causal for the initiation and maintenance of OCD.

OCD, ADHD, and Autism

Hollander and colleagues (Hollander & Wong, 1995a; Hollander et al, 1996) have suggested that autism is part of the OCSDs, belonging to the neurological cluster. Further, Palumbo, Maughan & Kurlan (1997) have suggested that attention deficit/ hyperactivity
disorder (ADHD), OCD and autism (with other disorders such as Tourette’s syndrome) share etiological overlap, constituting a group of developmental basal ganglia disorders. Despite significant increases of these symptoms in OCD patients, only few investigations of the relations between these symptoms have been conducted. We expected to find (1) elevated rates of autism and ADHD symptoms in OCD patients, (2) autism and ADHD symptoms predicting increased OC symptom severity. With respect to autism symptom characteristics, we expected (3) to replicate previous findings by our group of lack of social skills in the OCD group (Cath et al., 2008).

Results indicated that OCD patients presented with higher scores on ADHD as well as autism symptoms than normal controls. Additionally, OCD+ADHD patients showed higher autism scores on most autism subscales than OCD-ADHD patients. The Autism-Spectrum Quotient (AQ) attention switching subscale was highly correlated with the inattention subdomain of ADHD, and it was (and to a lesser degree the social skills subscale), the strongest predictor of OCD symptoms and severity. The attention to detail subscale exhibited low correlations with OCD, and did not turn out to be a significant predictor of OCD symptoms or severity, and, contrary to our expectations, autism symptoms did not predict hoarding symptoms. We suggest that difficulties in the management of attention may serve as a common factor between OCD, ADHD and autism symptoms in OCD, and maintain the pathological doubt/ uncertainty that characterizes these disorders. In respect to hoarding, our results suggest that hoarding constitutes a frontally-mediated phenotype that is in several aspects discrete from the other dimensions of OCD. Additionally, we suggest that lack of social skills in some
patients with OCD might reflect subtle impairments in theory of mind related functioning, as seems to be a core issue in autism patients.

Assessment and treatment issues in OCD

The psychometric properties of the revised OBQ (OBQ-44)

Recently, factor-analytic procedures have been used to construct a revised version of the obsessive-compulsive questionnaire-87 (OBQ-87): the OBQ-44 (OCCWG, 2005). The OBQ-44 consists of three subscales, originating from the OBQ-87 subscales: (1) Responsibility/ Threat estimation, (2) Perfectionism/ Certainty, and (3) Importance/ Control of thoughts. An important aspect of both versions of the OBQ that has not yet been assessed is its sensitivity to treatment change. The aim of the present study is twofold: (1) to assess the sensitivity to change of both OBQ versions in relation to other OCD measures, and (2) to assess whether pretreatment symptom levels are related to specific OCD beliefs, and whether posttreatment reduction in OCD beliefs is related to specific symptoms.

Results indicated that the effect size d exhibited by both OBQ versions is medium, and is much lower than the large effect size exhibited by the Yale-Brown Obsessive Compulsive scale (Y-BOCS). One symptom type (obsessions+checking compulsions) was associated with levels of beliefs. However, symptom type was not related to change in beliefs after treatment.

We conclude that the OBQ-44 does not qualify to serve as a primary measure for treatment change. Further, our results cast doubts on the clinical utility of the cognitive theory as measured by the OBQ.
The Padua-R vs. the Y-BOCS

The Yale-Brown Obsessive Compulsive scale (Y-BOCS) and the Padua-R (PI-R) are amongst the most widely used OCD measures. However, various researchers have found a remarkably low correlation between the Y-BOCS and the Pudua-R (PI-R; Van Oppen et al., 1995; Denys et al., 2004) This is a striking finding considering the moderate to high correlations between Y-BOCS and measures and anxiety and depression measures, and the high correlations between the PI and PI-R and other OCD measures. To date, very little research has been carried out into investigating the low correlations between these measures and whether they truly represent unrelated features of OCD severity. The aim of the present study was to investigate possible explanations for the low correlation between the Y-BOCS and the PI-R: (1) the hypothesis that differences between self- and clinician-administered measures account for the low correlation between the PI-R and the Y-BOCS Severity scale; and (2) the specificity hypothesis, that patients with severe but specific symptoms will score high on the Y-BOCS Severity scale yet low on the PI-R, thus reducing the correlation. Further, the influence of comorbid conditions was assessed, since Hasler (2005) has demonstrated different symptom dimensions are related to specific comorbid conditions.

Neither of the two hypotheses put forward to explain the low correlation between the Y-BOCS Severity scale and the PI-R were confirmed. The Y-BOCS Checklist exhibited a higher correlation with the PI-R than with the Y-BOCS Severity scale, and the specificity hypothesis was also not supported. Using the highest PI-R subscale scores did not raise the correlation between the Y-BOCS Severity scale and the PI-R, whereas this
newly created measure was highly correlated with the total PI-R scores. In addition, comorbidity does not seem to account for the low correlation between the measures, since the correlation between the Y-BOCS and PI-R remained low even when only scores of patients without comorbid disorders were analyzed separately. An interesting finding was that in the PI-R, one-third of the OCD patients were below the cut-off recovery scores, in contrast to the Y-BOCS, in which almost all patients scored above the cut-off score.

We conclude that the PI-R and Y-BOCS Severity scale seem to measure relatively unrelated features of OCD. Our research further implies that the PI-R is not suitable as an aid to determine the presence of an OCD diagnosis.

The factorial structure of the Y-BOCS

The Yale-Brown Obsessive Compulsive Scale (Y-BOCS) is regarded as the “golden standard” in the measurement of obsessive-compulsive disorder (OCD) symptom severity and treatment response. However, multiple attempts to assess its’ factorial structure have yielded contradictory results. In the present study we consider various methodological shortcomings of earlier research, and use a larger OCD patient sample than used in earlier studies, to determine which factor structure might be preferred. Exploratory factor analyses a three-factor solution, with obsessions, compulsions, and resistance factors. Confirmatory factor analyses run on the same sample produce identical findings. The three-factor solution entails the best fit to the data, though it does not fully fulfill the optimal requirement for fit indices used. Exploratory factor analyses conducted on different sample subgroups have all produced similar findings. The three-factor structure with obsessions, compulsions, and resistance factors repeatedly emerged as the
best structure. A major problem with this structure remains double loadings, particularly of the resistance and control items.

The two-factor obsessions-compulsions factor, however, was found to possess almost identical goodness of fit to the data, yet presents some clear advantages in being the original theory-derived structure and being more widely used. We therefore recommend subsequent use of the Y-BOCS in its current two-factor form.

*The process of change in behavior and cognitive therapies of OCD*

The limitations of behavior therapy, the presence of cognitive biases and errors, and the search for an alternative, less anxiety-provoking treatment have prompted some researchers to advocate a shift to a cognitive approach in the treatment of OCD. Several studies have directly compared cognitive therapy (CT) with behavior therapy in the form of exposure and response prevention (ERP) and found no differences in efficacy (Emmelkamp, Visser, & Hoekstra, 1988; Emmelkamp & Beens, 1991; van Oppen et al., 1995b; Cottraux et al., 2001; Whittal, Thordarson, & McLean, 2005). This raises the question whether the process of change in these treatments might be different. To date, no studies have attempted to measure change through weekly measurement rather than at specific points of treatment and follow-up. This study was set up to establish whether CT and ERP follow different paths of change. Our hypotheses that ERP would primarily affect behavior and therefore reduce compulsions first and that CT would primarily affect thought and therefore reduce obsessions first were not confirmed.

No differences were found between CT and ERP with regard to the process of change in obsessions and compulsions. Our findings suggest that behavioral procedures are
the critical component in both behavior and cognitive therapies for OCD. We further suggest that CT might work by increasing the motivation to engage in spontaneous exposure, in contrast with ERP, which uses exposure in a more structured way.

Discussion

*OCSD theory implications*

Our main conclusion about the obsessive-compulsive spectrum (OCSD) theory concerns its basic flaws. It is so inclusive, bringing together such a variety of different disorders that it is difficult to ascertain specific predictions thus making it almost impossible to falsify. Anxiety and mood disorders are common comorbid conditions to OCD in greater numbers than OCSDs. The case for some OCSDs is better than for others. In the present study, it is clear that the case of tic disorders and Tourtte’s Syndrome as candidates for an OCSD’s, is much better than the case of pathological gambling (PG), or autism. Attention deficit/hyperactivity disorder (ADHD) and OCD seem to share an underlying attentional difficulty- in attention switching, and the comorbidity in our sample was impressive, therefore suggesting that it is also a highly related condition. Particularly in the case of pathological gambling, in which patients exhibited absolutely no increase in OCD symptoms, it seems that the case of its’ being a part of the OCSDs is very weak. This is in line with the findings of Mataix-Coles, Pettusa, & Leckman (2007), that for some OCSDs there is much higher agreement between health care professionals specializing in OCD as to their relation to OCD than for other OCSDs. In their study they found that tic disorders share a higher consensus than other disorders, as belonging to the OCSDs.
Another major problem with the OCSD theory is its utility. This theory was used to try to implement the same treatment (i.e. SSRIs) along a great variety of different disorders. Therefore, much of the research of this theory was directed towards this end. However, considering OCD in itself is a heterogeneous condition, a much more useful approach, might be towards understanding how to differentially adjust optimal treatment for different patients. Our understanding of OCD and related conditions might be better improved if we use a dimensional approach was used in which it was tried to understand the relations between partially overlapping symptoms, comorbidity patterns, psychological factors, etc. The results of this research cast doubt whether obsessional beliefs improve our insight into the understanding and improved treatment of OCD symptoms. Obsessional beliefs In the clinical implications sections, for example, I suggest how the occurrence of ADHD and autism symptoms in OCD, might influence pharmacological and psychological interventions. As Lecrubier (2008) has recently suggested, such an approach has the advantage of taking into account also subclinical conditions, and not only comorbidities.

Implications for the OBQ and cognitive theory

The obsessive-beliefs questionnaire (OBQ) presented with disappointing properties in this study. First of all, its’ failure to distinguish between OCD and pathological gambling (PG) patients, indicates a problem with its’ discriminant validity. The effect size the OBQ demonstrated was smaller than the PI-R and the Y-BOCS, a finding that indicates that it is not suitable as a primary measure for treatment change, and it is definitely not helpful as a measure for the diagnosis of OCD. Furthermore, the
finding that post treatment OBQ score changes were not related to the symptom change in
treatment cast doubt at the utility of the OBQ. An alternative explanation might be that
the OBQ measures basic schemas that do not necessarily change at the same rates as
OCD symptoms decline. However, even such an explanation is problematic in explaining
the low discriminant validity of OCD patients with PG patients. In addition, the OBQ
seems sensitive to cultural influences, and our scores were different from scores obtained
in other countries. Possibly, cultural influences make it even more difficult to generalize
results across different cultures.

A question which remains unanswered is to what extent do our results reflect
deficiencies in the OBQ, and to what extent, the results reflect problems with the
cognitive theory of OCD. After behavior therapy in the form of exposure and response
prevention (ERP) has established itself as the golden standard in the treatment of OCD, a
shift occurred in research and clinical practice, towards cognitive therapy. It was believed,
that the addition of cognitive components might increase treatment effectiveness, make it
easier to tolerate, thus decrease drop out rates, and provide a viable option for patients
non responsive to ERP. This promise is yet unfulfilled. Up to date, there is no evidence
that the addition of cognitive therapy adds anything to the effectiveness of therapy,
reduces drop out, or that non responsive patients to ERP can benefit from it. Some, like
Deacon & Abramowitz (2004), claim that behavior therapy is the active ingredient in the
treatment of OCD. Our results suggest the same: that even in the case of cognitive
therapy, changes in behavior are the more important than changes in thought. Fisher &
wells (2005) have discovered that when criteria of recovery are applied, the most
effective treatment to OCD is ERP. Future research might indicate the extent to which current results can be attributed to problems in the cognitive theory of OCD, i.e. that thoughts might be byproducts of OCD and not a cause for it, or whether the OBQ is simply a limited measure, despite the impressive group of researchers that have developed it (OCCWG, 1997).

Suggestions for clinical practice

First, the comparison between the Padua Inventory-Revised (PI-R), obsessive beliefs questionnaire (OBQ), and the Yale-Brown Obsessive Compulsive Scale (Y-BOCS) indicates that (1) multiple measures should be used in the assessment of OCD, since different measures assess various aspects of the disorders, and (2) The Y-BOCS is the most sensitive measure for assessment of treatment change, and as an aid in the determination of OCD diagnosis. Patients with Y-BOCS scores of 16 or higher are very likely to fulfill DSM-IV criteria for OCD. The PI-R is more suited for the assessment of symptom severity and change over time, while the OBQ can be used in the assessment of OCD dysfunctional cognitions, before treatment starts. This might help in planning of cognitive therapy.

Second, our investigation of the relations between OCD, ADHD, and autism, suggests various clinical implications. The most important implication is that attentional problems, particularly in attention switching might impede CBT treatment for many OCD patients. Two strategies might be used to improve attention- psychological behavioral interventions (O'Connell et al., 2008; O'Connell, Bellgrove, Dockree & Robertson, 2006; White & Shah, 2006), and the addition of Methylphenidate, particularly in timing for
exposure assignments. Further, the lack of social skills as reported by the OCD patients implies that adding a social skills improvement module to standard cognitive behavior therapy for OCD might increase overall treatment efficacy in OCD, as was recently suggested by Cath and colleagues (Cath et al., 2008).

Third, the comparison between the process of treatment change between behavior and cognitive therapies, suggests that behavioral change is the critical ingredient for treatment change. This implies, that even in the application of cognitive therapy, attention should be placed on the systematic behavioral implementation of cognitive changes, in order to enhance treatment effectiveness. This is in line with recommendations recently made by Waller (2009) who described reasons for therapist drift in cognitive-behavior therapy (CBT), and stresses the importance of focusing on behavioral change in CBT.

Our study of the factor structure of the Y-BOCS indicates that the use of the obsessions and compulsions factors rather than an overall severity, might aid the assessment of treatment progress. This division also fits best the conceptualization of OCD in the DSM-IV as well as in current CBT models of OCD. The use of subscales might be particularly important in case of patients with preliminary obsessions or compulsions, like the ‘pure obsessions’.

Suggestions for future research

To further increase the understanding of the relations between OCD and other disorders, it seems important to continue research into various disorders, some belonging to the OCSD, but also anxiety disorders, mood disorders and personality disorders, their relation to OCD symptoms, age of onset and illness severity. However, this research
should not be isolated from investigation into the effects of different profiles on the
course of illness and the response to both psychological and pharmacological treatments.

It is surprising how little information we have into predictors of treatment outcome in the
sense of the interaction between type of treatment and symptom and personality profiles.
As consequence, we have little empirical evidence on how to adjust treatment to optimize
efficacy in individuals with various comorbidities, despite the fact that a large proportion
of patients with OCD have comorbid conditions. Therefore, the great variability in
treatment response is not explained and advances in the treatment of OCD are not evident
despite immense research efforts. So, we know patients respond differently to our
treatments, but have little ability in predicting or assigning them to an optimal
personalized treatment. Research of treatment outcome should be conducted with various
OCD measures (such as the Y-BOCS and PI-R), since various measures differ in the way
they assess OCD. Possibly the interaction between various measures (e.g. having a low
PI-R score and high Y-BOCS score) might enable us to better predict which patients
might benefit from which treatment.

Several lines of research may be used to determine the importance of cognitive
theory to OCD, it is important to examine multiple cognitive OCD measures, in order to
make more substantiate conclusions about the role of cognitions in OCD. A promising
example is the use Solem et al. (2009) made of the metacognitions questionnaire
(MCQ-30). When the overlap between predictors of treatment outcome was controlled
for, only changes in metacognitions were significant predictors, and explained 22% of the
variance in symptoms at post-treatment when controlling for pre-treatment symptoms and changes in mood.

**Conclusion**

This research has demonstrated that pathological gambling (PG) should not be included in the obsessive-compulsive spectrum disorders (OCSD), that Tourette’s Syndrome (TS) is highly related to OCD, and that attention deficit\hyperactivity (ADHD) is also related to OCD, apparently, through problems in the switching of attention. Further, it has shed light into the deficiencies of the obsessive-beliefs questionnaire (OBQ) in the sense of low discriminant validity, and inability to predict treatment response, and highlighted the importance of keeping focus on behavioral change in the treatment of OCD. Finally, current findings suggest that multiple measures should be used in the assessment of OCD, and that information they provide might reflect real differences in the concepts measured.