

Obsessive–compulsive personality disorder: A review of current empirical findings

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ABSTRACT

The aim of this article is to review the literature on aetiology, epidemiology and course, assessment and treatment of the obsessive–compulsive personality disorder (OCPD). OCPD is a rather prevalent personality disorder, being one of the most prevalent personality disorders in the general population. OCPD is associated with moderate Axis I and Axis II co-occurrence and functional impairment is stable over time but generally mild. There is some evidence that the economic burden of OCPD may be considerable. Psychological treatment studies on patients with OCPD are rare, consisting of a few case studies and two open studies. Only one randomized controlled study on pharmacotherapy and no controlled study on psychological treatment directly focusing on OCPD as primary complaint have been reported. Finally, future areas of research are discussed. Copyright © 2010 John Wiley & Sons, Ltd.

Introduction

Since the publication of the Diagnostic Statistical Manual DSM-III in 1980, personality disorders (PDs) are situated on a distinct Axis (II) to ensure that ‘consideration is given to the possible presence of disorders that are frequently overlooked when attention is directed to the more florid Axis I disorders’ (American Psychiatric Association, 1980, p. 23). Although it was expected that acknowledging the importance of diagnosing the PDs would lead to a growth of studies into the assessment and classification boundaries, aetiological processes and treatment of PDs, for a long time that expectation has not been lived up to with

respect to the anxious-inhibited PDs (Cluster C; Blashfield & Intoccia, 2000; Emmelkamp & Kamphuis, 2007; Gude & Vaglum, 2001). This is even more surprising given recent findings that the anxious-inhibited PDs are the most prevalent in the general population (Tyrer, 2005). Even less studies have focused specifically on the obsessive–compulsive personality disorder (OCPD; Grilo, 2004a; Villemarette-Pittman, Stanford, Greve, Houston, & Mathias, 2004).

The personality and personality disorders work group of DSM-V has proposed a reformulation of the assessment and diagnosis of personality psychopathology. The work group recommends a major reconceptualization of personality

psychopathology with core impairments in personality functioning, pathological personality traits and a limited number of prominent pathological personality types. The workgroup recommends only five personality disorder types, including the obsessive–compulsive type, so a review of research into OCPD is timely.

The aim of this article is to review studies concerning prevalence, aetiology, co-morbidity, associated functional impairment, economic burden and treatment of OCPD and to discuss research challenges. The emphasis will be on studies in which a (semi) structured, standardized interview was used to assess the presence of PDs. However, we include a few studies which were interesting enough to be included in this review that did not use a formal structured interview to assess PDs.

Obsessive–compulsive personality disorder

The Diagnostic and Statistical Manual of Mental Health Disorders, 4th edition, text revision, (DSM-IV-TR) defines a PD as an enduring pattern of inner experience and behaviour that deviates markedly from the expectations of the individual's culture. This pattern is manifested in two or more

of the following areas: cognition (i.e. ways of perceiving and interpreting self, other people and events), affectivity (i.e. the range, intensity, lability and appropriateness of emotional response), interpersonal functioning and impulse control (American Psychiatric Association, 2000).

Together with the avoidant personality disorder and dependent personality disorder, OCPD forms the C-cluster (American Psychiatric Association, 2000). In this cluster, fear and behavioural inhibition play an important role (Emmelkamp & Kamphuis, 2007; Villemarette-Pittman et al., 2004). OCPD is a chronic maladaptive, though mostly ego-syntonic, pattern of excessive perfectionism and need for control that is pervasive, affecting all domains of an individual's life. It is characterized by eight personality traits: preoccupation with details, perfectionism, excessive devotion, hypermorality, inability to discard worthless objects, inability to delegate tasks, miserliness, rigidity and stubbornness (American Psychiatric Association, 2000). The OCPD-specific diagnostic criteria are listed in Table 1.

In many ways, the current DSM definition resembles Freud's (1908) description of the anal character/anal personality (Emmelkamp & Kamphuis, 2007; Fineberg, Sharma, Sivakumaran,

Table 1: Diagnostic criteria for 301.4 Obsessive–compulsive personality disorder

A pervasive pattern of preoccupation with orderliness, perfectionism and mental and interpersonal control, at the expense of flexibility, openness and efficiency, beginning in early adulthood and present in a variety of contexts, as indicated by four (or more) of the following:

- 1) Is preoccupied with details, rules, lists, order organization or schedules to the extent that the major point of the activity is lost.
 - 2) Shows a perfectionism that interferes with task completion (e.g. is unable to complete a project because his or her own overly strict standards are not met).
 - 3) Is excessively devoted to work and productivity to the exclusion of leisure activities and friendships (not accounted for by obvious economic necessity).
 - 4) Is overconscientious, scrupulous and inflexible about matters of morality, ethics or values (not accounted for by cultural or religious identification).
 - 5) Is unable to discard worn-out or worthless objects even when they have no sentimental value.
 - 6) Is reluctant to delegate tasks or to work with others unless they submit to exactly his or her way of doing.
 - 7) Adopt a miserly spending style towards both self and others; money is viewed as something to be hoarded for future catastrophes.
 - 8) Shows rigidity and stubbornness.
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Sahakian, & Chamberlain, 2007). Earlier studies into the clustering of the personality traits orderliness, parsimony and obstinacy generally found that these traits hang together which justifies the concept of the obsessive–compulsive personality (Emmelkamp, 1982). According to Freud (1908) the development of the anal character is the result of parent–child conflicts on toilet training around the age of 2 or 3. The conflict is between the child's wish to control freely the expulsion of faeces and urine on the one hand and the primary caretakers' wish to regulate this in line with prevailing cultural and social standards on the other. A number of studies have tried to show this causal relationship between toilet training and anal fixations/obsessive–compulsive personality. However, hardly any support is found for this proposed relationship (Emmelkamp, 1982; Pollak, 1979).

Epidemiology and course

Prevalence

Compared to Axis I disorders, only few epidemiological studies have been conducted so far on the prevalence of PDs. Epidemiological studies found Cluster C PDs, and within that cluster the OCPD, rather prevalent in the general population (Lenzenweger, 2008; Mattia & Zimmerman, 2001; Torgersen, 2005). In the Mattia and Zimmerman (2001) review, it was the most prevalent PD in the general population. Large recent community studies in the UK (Coid, Yang, Tyrer, Roberts, & Ullrich, 2006), the USA (the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC); Grant, Hasin et al., 2004) and Iceland (Lindal & Stefansson, 2009) found OCPD to be the most prevalent PD. As to gender differences, generally, there is a higher prevalence of OCPD among men than among women (Coid et al., 2006; Light et al., 2006).

In clinical samples, high prevalence rates are reported. In an outpatient population, Zimmerman, Rothschild and Chelminski (2005) found the OCPD being the third prevalent PD (8.7%) after

the avoidant PD (14.3%) and the borderline PD (9.3%). In psychiatric inpatients, OCPD was the second most prevalent PD (28.3%; Rossi, Marinangeli, Butti, Kalyvoka, & Petruzzi, 2000).

Course

An increasing number of studies show that PDs are less stable and persistent than originally thought and is required by the DSM to be able to come to a formal diagnosis (Emmelkamp & Kamphuis, 2007; Grilo, McGlashan, & Oldham, 1998). This may hold especially for OCPD. Although Shea et al., (2002) found significant correlations over time (6- and 12-month follow-up) for the number of criteria met for OCPD, a significant majority of OCPD subjects (58%) did no longer meet DSM-IV diagnostic threshold at 12-month follow-up. The same research group (Grilo, Sanislow et al., 2004) studied remission rates during a 24-month follow-up of the same sample. Using a stringent definition of 12 consecutive months with two or fewer criteria, a remission rate of 38% for OCPD is reported. Moreover, longitudinal diagnostic efficiency of the various DSM-IV criteria for OCPD varies. Three cognitive-interpersonal criteria (preoccupied with details, rigid and stubborn and reluctant to delegate) appeared to have predictive validity (Grilo, Skodol et al., 2004); in a logistic regression each of them made a significant independent contribution. Studying the 2-year prevalence and stability of individual DSM-IV criteria, two of them (rigidity/stubbornness and problems delegating) were found to be most prevalent and least changeable over a 2-year period, thus suggesting that especially these two criteria are more trait-like. Miserly behaviours and strict moral behaviours were found to be the least prevalent and most changeable criteria (McGlashan et al., 2005). Altogether, these findings suggest OCPD to be a combination of stable traits and symptomatic behaviours that can change in severity and/or expression over time (Grilo, Sanislow et al., 2004). In their most recent report on 10-year stability of amongst others OCPD, Sanislow et al. (2009)

concluded that separate PD constructs fade and inter-construct correlation increases. However, their report also supported the notion of a stable core aspect of personality pathology and that other aspects may be episodic. In contrast to the above findings, some data suggest that OCPD remains stable or even gets worse with aging (Devenand et al., 2000; Rinsma & Colon, 1997; Ullrich & Coid, 2009). A review of Zanni (2007) suggests that the expression of personality traits changes over time in the elderly; the OCPD age-related changes are that rigidity persists and that resistance to change and hoarding increase. Also, there is an increased difficulty in forming new social relationships.

Co-occurrence with other disorders

Co-morbidity, i.e. the co-occurrence of two or more psychiatric disorders in one patient, is common in patients with OCPD. For OCPD, we will first discuss co-occurrence with other PDs. Next we will discuss its co-occurrence with a number of DSM Axis I disorders.

Co-occurrence of OCPD with other personality disorders. The level of co-morbidity among the various PDs is high, both in clinical samples and in community studies (Emmelkamp & Kamphuis, 2007). In the Collaborative Longitudinal Personality Disorders Study, the mean number of co-occurring PDs was 1.4 (McGlashan et al., 2000). However, OCPD had the least co-current PD diagnoses as compared to the other PDs studied: schizotypal PD, borderline PD and avoidant PD. Not surprisingly, given that one of the defining characteristics of OCPD is overconscientiousness and scrupulosity, antisocial PD was diagnosed significantly less frequently in the OCPD group than in the other PD groups. In psychiatric inpatients, Rossi et al. (2000) reported a mean of 2.7 PDs per person. The most elevated odds ratios were found for the co-occurrence of OCPD with paranoid PD and schizoid PD. Stuart et al. (1998) and Hummelen, Wilberg, Pedersen, & Karterud (2008) also found

the highest co-occurrence of OCPD with Cluster A PD diagnoses. These findings seem robust and reliable, given that the diagnoses of PDs in all three studies were based on semi-structured interviews, the Structured Interview for DSM-IV Personality, the Structured Clinical Interview for DSM IV Axis II Disorders (SCID-II) and the Diagnostic Interview for DSM-IV Personality Disorders (DIPD-IV).

OCPD and obsessive-compulsive disorder. Obsessive-compulsive disorder (OCD) is characterized by obsessions and compulsions. Obsessions being unwanted, recurring and stressing thoughts, ideas or images, compulsions being repetitive behaviours carried out by patients in order to decrease anxiety and or tension caused by obsessions. The overlap between OCPD and the Axis I OCD has long been a source of much debate (Albert, Maina, Forner, & Bogetto, 2004; Emmelkamp, 1982; Rodriques, Torres, & Del Porto, 1995; Serpell, Livingstone, Neiderman, & Lask, 2002). Freud held that anally fixated persons (i.e., obsessive-compulsive personality) have a predisposition to the development of OCD. Some hold that obsessive personality traits are a necessary prerequisite for the development of OCD symptoms. Others however claim that there is no (clear) link between OC personality traits and OCD symptoms. Overarching these extremes is the idea that while symptoms and personality traits can be jointly present quite regularly, this may be attributed to chance rather than to a direct relationship (Emmelkamp, 1982; Rosen & Tallis, 1995). Throughout the years, studies report rates of co-morbidity with either PD traits or full PD diagnoses, varying from 2–55% (Black & Noyes, 1997; Black, Noyes, Pfohl, Goldstein, & Blum, 1993). Different methods of Axis II assessment (e.g. structured interviews vs. self-report questionnaires) may to some extent account for the differences found. Some report a specific association of OCPD with OCD compared to panic disorder and major depressive disorder (Diaferia et al., 1997). Others however, found hardly any evidence that OCD

and OCPD are specifically associated (e.g. Crino & Andrews, 1996; Pfohl & Blum, 1991; Pollak, 1979, 1987). More recently, Mancebo, Eisen, Grant, and Rasmussen (2005) reviewed research in this area and concluded that the majority of individuals with OCD in *clinical* samples (75%) do not have OCPD. In addition, results from PD samples suggest that the majority of individuals with OCPD (80%) do not fulfil the criteria of OCD. Reporting on data from the British National Survey of Psychiatric Morbidity 2000, Torres et al. (2006) could show only a trend for OCPD to be more frequent in OCD individuals. The assessment of PDs, however, was based on the screening questionnaire of the Structured Clinical Interview for Axis II disorders, rather than on a structured interview. Please note that screening instruments are known for their overrating tendency. Other recent studies found the percentage of OCD patients with OCPD to be relatively low ranging from 15% (Wu, Clark, & Watson, 2006) to 25% (Pinto, Mancebo, Eisen, Pagano, & Rasmussen, 2006). Of note, Wu et al. (2006) reported that OCD patients scored higher than non-patients on both avoidant and dependent PD. Only one study (Eisen et al., 2006) found that OCD was significantly more prevalent in subjects with OCPD (as assessed by DIPD-IV interview) compared to subjects with other PDs. Three of the OCPD criteria (hoarding, perfectionism and preoccupation with details) were significantly more prevalent in OCD subjects.

There is some evidence, however, that a specific subgroup of OCD patients has an elevated chance of co-occurring OCPD. Coles, Pinto, Mancebo, Rasmussen, and Eisen (2008) reported that the presence of OCPD (assessed by SCID-II) in OCD individuals is significantly associated with a number of specific clinical features including an earlier age at onset of initial OCD symptoms, greater frequency of symmetry and hoarding obsessions and greater frequency of cleaning, ordering, repeating and hoarding compulsions. Moreover, the group of OCD individuals with OCPD was characterized by more impaired social functioning and lower Global Assessment of Functioning

ratings, which suggest that there may be a specific subtype of OCD characterized by the presence of OCPD.

Finally, a study of Calvo et al. (2009) is of some interest. They found OCPD traits to be significantly more prevalent in parents of children with OCD compared to parents of healthy controls. Specifically, hoarding, perfectionism and preoccupation with details were significantly more present in probands' parents.

OCPD and other anxiety disorders. A number of studies have investigated the co-occurrence of OCPD in patients with other anxiety disorders than OCD. The most prevalent co-occurring anxiety disorders are panic disorder, social phobia and generalized anxiety disorder (Albert et al., 2004; Diaferia et al., 1997; Grant et al., 2005; McGlashan et al., 2000). In a *clinical* sample consisting of patients having a lifetime anxiety disorder, however, McGlashan et al. (2000) found OCPD with a few exceptions to be least frequently co-occurring, compared to schizotypal, borderline and avoidant PD.

OCPD and eating disorders. The relationship between personality traits and PDs on the one hand and eating disorders on the other has received considerable empirical testing (Lilenfeld, Wonderlich, Riso, Crosby, & Mitchell, 2006). The mean prevalence of Cluster C PDs, which include OCPD, is estimated at 35% (ranging from 5% to 80%) in individuals with anorexia nervosa (Gartner, Marcus, Halmi, & Loranger, 1989; Nilsson, Gillberg, & Rastam, 1999) and at 25% in individuals with bulimia nervosa (Braun, Sunday, & Halmi, 1994; Gartner et al., 1989) and binge eating disorder (Grilo and McGlashan, 2000). Further, research showed that with every additional childhood obsessive-compulsive personality trait (measured by a semi-structured interview) reported, the estimated odds ratio for development of an eating disorder increased by 6.9, suggesting a strong dose-response relationship (Anderluh, Tchanturia, Rabe-Hesketh, & Treasure, 2003).

Eating disordered subjects reporting perfectionism and rigidity in childhood had significantly higher rates of OCPD in later life. There is some evidence that OCPD pathology rather than OCD has a close link with eating disorder (Halmi et al., 2005; Serpell et al., 2002). Further, a family study revealed that relatives of probands with anorexia nervosa had a significantly (OR 3.1) higher prevalence of OCPD compared to relatives of never-ill probands. Adding the diagnosis of OCD to the model had no effect on the OR in both probands and relatives (Strober, Freeman, Lampert, & Diamond, 2007). Using a prospective research design, Lilienfeld, Jacobs, Woods, & Picot (2008) showed that obsessive–compulsive personality pathology significantly predicted disordered eating over a 2-year period for African American women. Finally, Crane, Roberts, and Treasure (2007), reviewing randomized controlled trials (RCTs) and naturalistic outcome studies, found some evidence that obsessive–compulsive personality traits are associated with poor outcome in anorexia nervosa.

OCPD and mood disorders. In reviewing 25 studies with unipolar depressed patients, Corruble, Ginestet, and Guelfi (1996) reported OCPD to be the only PD within the C-cluster PDs of which the prevalence is consistently moderately high (up to 20%). In addition, Schiavone, Dorz, Conforti, Scarso, and Borgherini (2004) found OCPD to be the third most prevalent (prevalence of 14.2%) PD among inpatients having a unipolar depression, after borderline PD and dependent PD. Also, in bipolar patients, OCPD is common (George, Miklowitz, Richards, Simoneau, and Taylor, 2003).

In a large community study (NESARC) Grant et al. (2005) found OCPD the most prevalent PD amongst individuals having mood disorders, ranging from 22.5% for major depression to 38.3% for mania. In contrast to the results of Grant et al. (2005) who studied 12-month mood disorders, McGlashan et al. (2000) found among patients having a lifetime mood disorder OCPD the least co-occurring PD, compared to schizotypal, borderline and avoidant PDs. Recently, in a 6-year pro-

spective study, Grilo et al. (2010) showed that relapse rate for patients with (remitted) major depressive disorder (MDD) and co-morbid OCPD at baseline was higher than relapse rate of MDD patients with co-morbid schizotypal, avoidant or borderline PD. These results suggest OCPD to be a robust predictor of accelerated relapse, stressing the need for treatments to address underlying Axis II pathology.

There is some evidence that the presence of OCPD (assessed by clinical interviews with patients, relatives and significant others) may increase the risk of misdiagnosing mood disorders (Raja & Azzoni, 2007). In a sample of depressed patients, Diaconu and Turecki (2009) found probands with co-morbid OCPD reporting significantly higher levels of current or lifetime suicidal ideation. In addition, Schneider et al. (2006) found a significantly increased risk of suicide associated with the presence of OCPD (using SCID-II by psychological autopsy method) in men (OR 3.19).

OCPD and substance use disorders. In patients with substance use disorders, OCPD may be common. Echeburua, De Medina, and Aizpir (2005) found that in outpatients, meeting the DSM-IV-TR criteria for alcohol dependence, OCPD (assessed by the International Personality Disorder Examination) was the second most prevalent PD (10%). Based on a large community sample (NESARC) Grant, Stinson et al. (2004) reported that OCPD is the second most prevalent (12.1%) PD. In a study into the co-occurrence of PDs in alcohol-dependent patients in clinical care, Preuss et al. (2009) found that the most frequent PDs were obsessive–compulsive, borderline, narcissistic and paranoid PD.

Also, in patients with drug abuse and dependence, a relationship between OCPD and substance abuse has been established. In the Grant, Stinson et al. (2004) epidemiological study, prevalence rates of OCPD were slightly higher (16.9%) in respondents with a drug use disorder as compared to an alcohol use disorder (12.1%). Lorea, Fernandez-Montalvo, Lopez-Goni, & Landa (2009)

reported OCPD traits to be second prevalent (6.7%) in a sample of 60 cocaine-addicted patients. PD-trait assessment was done using a self-report questionnaire (Millon Clinical Multiaxial Inventory-II (MCMI-II)) which may have resulted in overstating the number of PD traits. With regard to gender differences, Grant, Stinson et al. (2004) found a significantly greater association between OCPD and substance abuse and dependence for women than for men.

OCPD, paedophilia and intimate partner violence. Bogaerts, Daalder, Vanheule, Desmet, and Leeuw (2008) investigated the prevalence of PDs in a sample of paraphilic ($N = 36$) and non-paraphilic ($N = 34$) child molesters. PDs were measured by the Assessment of DSM-IV Personality Disorders. The groups differed significantly, prevalence being higher in the paraphilic group, on borderline, histrionic, depressive and obsessive-compulsive PD, the difference on OCPD being the strongest. Moreover, only OCPD score turned out to render a unique and significant contribution to the prediction of paraphilic child molestation: multivariate analysis showed that OCPD was significantly related to the paraphilic child molestation act and explained 14% of the variance in molestation.

OCPD may also be related to domestic violence. Fernandez-Montalvo and Echeburua (2008) reported, based on the MCMI-II that in a sample of 76 men convicted for severe intimate partner violence, OCPD was the most prevalent PD (57.8%). There are a few other studies which suggest an aggressive core in OCPD and possible impulsive aggressive outbursts with OCPD probands (e.g. Stein et al., 1996; Villemarette-Pitman et al., 2004). In the studies discussed above self-report inventories, known to overrate prevalence, rather than structured interviews were used for the assessment of PDs. Therefore, firm conclusions cannot be drawn from these studies.

OCPD and hoarding. Compulsive hoarding (DSM-IV-TR OCPD item 5) is characterized by

excessive collecting and the failure to discard of seemingly useless possessions, resulting into the cluttering of living space and significant distress and impairment (Frost & Hartl, 1996). Hoarding is commonly found not only in subjects with OCPD traits but also in subjects with Axis I disorders, notably OCD (Frost, Steketee, Williams, & Warren, 2000; Samuels et al., 2007; Seedat & Stein, 2002). In a community sample, Samuels et al., (2008) found that the odds of hoarding increased with the number of obsessive-compulsive traits (the hoarding trait being excluded), i.e. that the number of OCPD traits increases the risk of hoarding.

OCD hoarders are found to have greater prevalence of OCPD/OC traits in some studies (Samuels et al., 2007), but others find this association to be entirely due to overlapping item content (Pertusa et al., in press). The latter assessed OCPD/OC traits by a combination of PDQ-4+ and clinical interview. Although being a separate OCPD criterion, the relation with the OCPD diagnosis is still vague and awaits further research. In view of the rather low predictive power of the hoarding criterion for the OCPD diagnosis, one may wonder if it should not be removed in future editions of DSM.

Concluding remarks

As shown by the studies discussed above, OCPD is a prevalent PD, both in the general population and in various clinical settings, the prevalence being higher in men than women. OCPD traits in childhood predict OCPD traits in adulthood (Anderluh et al., 2003). However, there is evidence that in adulthood, stability of OCPD over time varies considerably. If OCPD persists, however, the symptoms may worsen and impairment in terms of reduction in gratifying social relationships increases. As compared to other PDs (e.g. borderline PD) its co-occurrence with other PDs is moderate. There is growing evidence, however, for a considerable co-occurrence with Cluster A PDs, notably paranoid PD and schizotypal PD.

Results on its co-occurrence with Axis I disorders (OCD, other anxiety disorders, mood

disorders, eating disorders and substance use disorders) are mixed. Also, compared to other PD co-occurrence, OCPD's relative position varies considerably. Sample differences such as clinical vs. 'normal' non-institutionalized subjects may account for some of the differences found. In trying to explain co-occurrence of Axis I disorders with PDs, Emmelkamp and Kamphuis (2007) discuss five highly acclaimed conceptual models. Both the vulnerability model (PDs may predispose to development of Axis I disorder) and the continuity model (PDs are subclinical manifestation of slowly developing Axis I disorder) may explain the development of a specific type of OCD and anorexia nervosa. In anorexia nervosa, however, the relationship could also be the other way around: anorexia nervosa, characterized by excessive need of control, may spread out in later life, resulting in OCPD. The complication model (PDs develop as a result of an enduring Axis I disorder) may account for such a development. There is no evidence yet to support a shared risk model (PDs and Axis I disorders are separate; co-occurrence is a result of a third common factor) or the attenuation model which assumes that Axis I and Axis II disorders are expressions of the same genetic liability. Research into the genetics of OCPD is discussed below.

In sum, the literature on OCPD epidemiology and course is characterized by marked variability, making it difficult to draw clear conclusions.

Construct validity of OCPD

Factor analytic studies of the DSM-III-R and DSM IV personality disorders conducted to evaluate the latent dimensions underlying the various personality disorders have led to conflicting results with respect to Cluster C PDs. These studies will be discussed below.

Does OCPD belong to the Cluster C personality disorders?

Fossati et al. (2006) found support for the latent common structure of the current Cluster C per-

sonality disorders. The results of the factor analysis suggested that avoidant, dependent and obsessive-compulsive PDs share a common latent dimension. Further, support was found for the three-factor structure of DSM-IV Cluster C personality disorder criteria. Sanislow et al. (2002) factor analysed the DSM-IV avoidant PD and obsessive-compulsive PD features and found that criteria of both personality disorders loaded on one dimension. However, two studies (Nestadt et al., 2006; O'Connor & Dyce, 1998) were unable to replicate the DSM Cluster C factor. In these studies obsessive-compulsive PD loaded on a different factor than avoidant PD and dependent PD, which loaded together on one factor. Further, results reported by Reichborn-Kjennerud et al. (2007) also suggest that OCPD represents a separate Axis II domain distinct from the other Cluster C disorders. Finally, Sanislow et al. (2009) recently reported OCPD, in the long term (6 to 10 years), to be more correlated with PD-Cluster A-based construct (odd-eccentric) and the borderline PD-Cluster B-based construct (erratic-emotional-dramatic) than with the avoidant PD-Cluster C-based construct. Thus, although there is consistent evidence that avoidant and dependent PDs belong to the same cluster, there is increasing evidence indicating that OCPD might not belong to that cluster.

Internal factor structure of OCPD

Grilo (2004b) examined OCPD *internal factor structure* and the exploratory factor analysis revealed a 3-factor solution (rigidity, perfectionism and miserliness) accounting for 65% of the variance. These dimensions resemble Freud's stubbornness, orderliness and parsimony. In a sample of patients with binge eating disorder, Ansell, Pinto, Orlando Edelen and Grilo (2008) found support for a 2-factor (perfectionism and rigidity) model. Hummelen et al. (2008) evaluated the quality of the OCPD construct as a prototype category in a large patient sample ($n = 2.237$). Exploratory factor analysis revealed two dimensions:

perfectionism and aggressiveness. OCPD criteria showed poor psychometric properties and the quality of OCPD as a prototype category was found to be insufficient. However, it could be improved by deleting the hoarding behaviour and miserliness criteria. Most studies looking into the predictive power of the specific criteria of OCPD found perfectionism to be the overall most predictive criterion (Farmer & Chapman, 2002; Grilo, 2004b). Examining the longitudinal diagnostic efficiency Grilo, Skodol et al. (2004) found 'preoccupation with details' being the most predictive criterion at 24-month follow up.

Based on the results of the studies discussed above, it remains questionable whether OCPD belongs to the Cluster C PDs. As the core structure of OCPD is concerned 'perfectionism' seems to be one of OCPD's most stable features. However, research on other core elements yields contradictory results, so firm conclusions on its core structure cannot be drawn yet.

Psychological and biological theories

Attachment

Attachment theory, originally developed by Bowlby and traditionally regarded as based on psychoanalytic ideas, has developed significantly over recent years, combining objects relations theory with empirical research in developmental psychopathology. Attachment theory has long been considered very influential with respect to understanding an individual's personality development, and attachment is now also considered an important aetiological factor in the development of PDs. Most studies, however, have investigated the relationship between attachment styles and borderline and antisocial PDs (Emmelkamp & Kamphuis, 2007).

According to a study of Anderlueh et al. (2003), the parent-child relationship of individuals who reported perfectionism and rigidity in childhood was not characterized by emotions such as nurturing, loving and supportive sentiments. Individuals

developing OCPD in later life were never well bonded and failed to develop emotionally and empathically. In a study of Nordahl and Stiles (1997) patients with OCPD reported having received significantly lower levels of care and significantly higher levels of overprotection from both parents compared to healthy controls and to other psychiatric outpatients. When the effect of a lifetime depressive disorder was statistically controlled for, OCPD was still significantly associated with a low level of paternal care and a high level of paternal overprotection. In contrast, Perry, Bond, and Roy (2007) found that a history of childhood emotional neglect was *negatively* associated with OCPD diagnosis. Of note, Axis II diagnoses were made by use of the Guided Clinical Interview (Bond & Perry, 2004).

Biological variables/heritability

Findings on genetic transmission for OCPD are mixed. An earlier review found results with respect to heritability and OCPD inconclusive (Nigg & Goldsmith, 1994). More recent studies, however, found evidence for a heritable component. In a twin study, in which 92 monozygotic and 129 dizygotic twins participated and PD diagnoses were established on basis of the SCID-II, Torgersen et al. (2000) found the heritability to be 0.78 for OCPD. Only the narcissistic personality's heritability was found to be equally high with a heritability of 0.79. Using a dimensional approach, however, Reichborn-Kjennerud et al. (2007) found that genetic (both common to the other Cluster C PDs and disorder specific) effects would account for only 27% of the variance of OCPD. The difference found can be partly ascribed to different methods of assessment. Based on a meta analysis of only three studies Light et al. (2006) concluded that an individual having a dopamine D3 receptor Gly/Gly genotype is 2.4 times more likely to be diagnosed with OCPD. Perez, Brown, Vrshek-Schallhorn, Johnson, & Joiner jr. (2006) found no differences on the serotonin transporter gene between OCPD and non-disordered respondents. Another study

also failed to demonstrate a general association between the serotonergic system (allelic variation in 5-HTT function) and anxiety-related traits in patients with PDs (Jacob et al., 2004).

Culture and ethnicity

It has been suggested that OCPD is typically for Western culture and associated with higher social economic classes (Millon & Grossman, 2005). However, results of studies addressing these issues are inconclusive. Chavira et al. (2003) investigated the influence of cultural and/or ethnic differences with respect to the prevalence of four specific PDs and found no indications for cultural or ethnic influence regarding OCPD. One study, however, found OCPD to be less prevalent in Asian and Hispanics as compared to Caucasian Northern Americans (Grant, Hasin et al, 2004).

Concluding remarks

Taken together, results with respect to the association between attachment related variables in childhood (e.g. paternal care, overprotection) and developing OCPD in later life are inconclusive. As heritability is concerned, results of the few studies which have addressed this issue make it almost impossible to draw firm conclusions with respect to the heritability of OCPD. Although a few behavioural genetic studies have demonstrated a moderate heritability component in OCPD, they provide little information on the nature of what is inherited. Results of studies into associations of culture and/or ethnicity and OCPD are contradictory too. In sum, the literature on psychological and biological theories regarding OCPD is not only scant but results are inconclusive at best.

Impairment and economic costs

Impairment

DSM-IV-TR requires impairment in functioning across several domains in order to come to a formal PD diagnosis. OCPD leads to less impairment than

schizotypal, avoidant and borderline PD both at baseline (Skodol et al., 2002) and at 24-month follow-up (Skodol, Pagano et al., 2005). However, only patients with borderline PD and OCPD showed no improvement of impairment. To determine the effect of improvement in personality pathology on improvement in functioning, the decrease in the number of PD criteria met from baseline to 12-month follow-up was calculated (Shea et al., 2002). Although there was a tendency for personality pathology to improve over time, functional impairment improved less than PD psychopathology, especially in OCPD and borderline PD (Skodol, Pagano et al, 2005).

Reduced quality of life is associated with PDs. Chen et al. (2006) compared long-term quality of life (QOL) among the specific PDs. Data were from the Children in the Community Study and PD diagnoses were based on pooled data from mother and youth report. The items used were selected from amongst others the Personality Diagnostic Questionnaire and the SCID-II (Chen et al., 2006). Controlling for demographic variables, comorbid Axis I disorders and self-reported physical illness, any PD diagnosis appeared to be independently associated with overall lower QOL. Examining unique association however the presence of OCPD symptoms was associated with the least reduction in overall QOL of all PDs (Chen et al., 2006).

Economic burden

Although it is generally assumed that PDs impose high costs on society, studies on this topic are rare. As to OCPD, there is evidence that—as a group—individuals with OCPD receive more individual psychotherapy than patients with a major depressive disorder without a PD (Bender et al., 2001; Bender et al., 2006). This may not come as a surprise given the fact that no approved pharmacotherapy is available for OCPD compared to major depression, almost automatically resulting in OCPD patients receiving more psychotherapy. Keeping this in mind, however, it does not negate

the fact that the costs of mental health care are increased (although the actual costs involved were not studied). In a recent study by Soeteman, Hakkaart-Van Roijen, Verheul, and Busschbach (2008) the direct (use of medical resources) and indirect (productivity loss because of absence from work and reduced efficiency at work) costs of patients diagnosed with a PD were calculated. Together with paranoid PD and borderline PD, OCPD was found to be associated with increased direct costs. Further, borderline PD and OCPD were associated with increased indirect costs. As far as total costs were concerned, only borderline PD and OCPD had a unique contribution. OCPD remained a significant predictor of total costs even after controlling for other significant predictors (age, medical diseases and borderline PD) in the analysis. To the best of our knowledge, no study to date studied the costs of OCPD compared to Axis I disorders, which seems an important area for future research.

Summarizing these findings, although functional impairment associated with OCPD is mild as compared to other PDs, it is stable over time, improving less than personality pathology. OCPD leads to reduction in overall QOL too, albeit less than most other PDs. There is some evidence that compared to other PDs, OCPD is significantly associated with higher costs resulting from use of medical resources and productivity loss than nearly all other PDs.

Treatment of OCPD

There is growing evidence that various forms of psychotherapy can be an effective treatment of PDs (Bartak, Soeteman, Verheul, & Busschbach, 2008; Emmelkamp & Kamphuis, 2007; Leichsenring & Leibing, 2003; Verheul & Herbrink, 2007). Most literature on this subject, however, concerns treatment of the borderline PD (McMain & Pos, 2007; Paris, 2008). More recently, however, there is a growing interest in the treatment of Cluster C PDs (Bartak et al., 2010; Emmelkamp et al., 2006; Gude & Vaglum, 2001; Morse, Pilkonis, Houck,

Frank, & Reynolds, 2005; Svartberg, Stiles, & Seltzer, 2004; Teusch, Bohme, Finke, & Gastpar, 2001) as well as in their (negative) influence on treatment outcome of Axis I disorders (Farabaugh et al., 2002; Narud, Mykletun, & Dahl, 2005; Newton-Homes, Tyrer, & Johnson, 2006; Viinamaki et al., 2003). Unfortunately, these studies do not report results on OCPD separately.

Treatment seeking

Regarding treatment seeking behaviour of OCPD patients, findings are mixed. Chessick (2001) found that OCPD clients often seek treatment on their own because they are aware of their suffering. In contrast, Cullen et al. (2008) reported that in patients with Axis I OCD some OCPD traits (perfectionism, reluctance to delegate and refusal to discard) were associated with treatment status: increase in the number of OCPD traits decreased the likelihood of having received any treatment. Cullen et al. (2008) suggested that subjects with OCPD (traits) may perceive their OCPD as more egosyntonic and thereby making them less likely to seek treatment. Also Perry et al. (2007) found that OCPD was a unique predictor of fewer treatment sessions in long-term dynamic psychotherapy. They attributed this finding to the high level of independence and control that characterizes OCPD. These studies are in contrast with the findings of studies by Bender et al. (2001, 2006), who found that OCPD patients receive significantly more individual psychotherapy than patients with a major depressive disorder.

To date, controlled studies on the treatment of OCPD as primary complaint are rare. Most studies involved patients with a primary Axis I disorder with co-current obsessive-compulsive personality pathology.

Pharmacotherapy

One case study was published in which carbamazepine led to a significant reduction in OCPD traits (Greve & Adams, 2002). Unfortunately,

treatment was discontinued due to the side effects of carbamazepine. One RCT has been reported on pharmacotherapy of OCPD. Anseau (1997) studied the effectiveness of fluvoxamine with a double blind study in a sample of 24 non-depressed outpatients with OCPD. Results showed a significant effect of fluvoxamine over placebo after 3 months.

Two controlled studies were reported on patients with Axis I disorders (major depression and OCD respectively) with co-occurring OCPD. Ekselius and Von Knorring (1998) examined the effect of sertraline (50–150 mg/day) or citalopram (20–60 mg/day) on PD diagnoses in a RCT with 308 patients with major depressive disorder. In the citalopram group, there was a significant reduction in OCPD diagnoses after 24 weeks of treatment. In addition, the number of OCPD traits decreased significantly in both groups, the citalopram group being the most effective. Change in depressive symptomatology accounted for only 6% of the change in PD traits.

Cavedini, Erzegovesi, Ronchi, and Bellodi (1996) investigated the effects of pharmacotherapy in OCD patients with or without co-morbid OCPD: patients with co-current OCPD improved significantly less with clomipromine or fluvoxamine than OCD patients without OCPD. This may indicate that OCD patients with OCPD are a subtype of OCD, requiring a different (pharmacological) treatment approach.

Psychotherapy in patients with co-current OCPD

Most studies have involved depressed patients with co-current personality pathology. Barber and Muenz (1996) studied the effectiveness of cognitive therapy (CT) and interpersonal therapy (IPT) in a sample of depressed patients with either co-current avoidant PD or OCPD. IPT was relatively more effective in reducing depressed mood with increasing levels of obsessiveness and CT relatively more effective in reducing depressed mood with increasing levels of avoidance. In a following study (Barber, Morse, Krakauer, Chittams, & Crits-

Christoph, 1997) the effectiveness of a time-limited supportive-expressive dynamic psychotherapy for depressive and/or anxious patients with co-current avoidant PD and OCPD was studied. Both PD groups improved significantly on depression, anxiety, general functioning and interpersonal problems. OCPD patients stayed in treatment for significantly more sessions than avoidant PD patients. Moreover, OCPD patients were significantly less likely (15%) than avoidant PD patients (39%) to meet PD-diagnostic threshold after treatment. Unfortunately, no formal diagnosis was established, but PDs were assessed by use of a self-report questionnaire: the Wisconsin Personality Disorders Inventory (WISPI).

In an open study, Roger (2005) studied the efficacy of CT for outpatients ($n = 10$) with both refractory depression and OCPD. Inclusion criteria were limited treatment responsiveness to adequate doses of antidepressants, refractoriness likely due to personality problems and patients' willingness to explore their condition in psychotherapy. Results showed, after a mean of 22.4 sessions, a significant decrease on Beck Anxiety Inventory, Beck Depression Inventory, Beck Hopelessness Scale and Global Assessment of Functioning Scale. Interestingly, treatment resulted in a significant decrease in dysfunctional beliefs as assessed with the Personality Belief Questionnaire as well. Reassessment by SCID-I at post-treatment showed that eight patients were free from Axis I disorder; reassessment by SCID-II showed that six patients did not meet diagnostic criteria for any PD anymore. Only one participant still had OCPD.

Lynch and Cheavens (2008) describe an adaptation of Dialectical Behavior Therapy (DBT) in the treatment of a male with major depressive disorder and both paranoid PD and OCPD. The adapted DBT package consisted of 28 weekly 50-minute individual sessions, complemented with a skills training group (28 2-hour sessions for standard DBT skills). Key features of this DBT adaptation consisted of maximizing openness and flexibility to new experience together with the reduction of rigid thinking and rigid behaviour. It

included loving-kindness-forgiveness training and mindfulness training, induction of positive mood states and exposure in vivo to 'classically conditioned fears associated with feedback and criticism'. This DBT package resulted in reduced depression as rated by the Hamilton Rating Scale for Depression. Furthermore, the patient did no longer meet criteria for a formal paranoid PD and OCPD diagnosis at the end of the study.

Other studies involving patients with Axis I disorders with co-current OCPD involved OCD, anorexia nervosa and ADHD. In patients with a primary diagnosis of Axis I OCD, a categorical OCPD diagnosis did not affect treatment outcome of CBT negatively (Fricke et al., 2006), nor did it in a case series ($N = 3$) with ADHD as primary disorder (Josephson, Hollander, & Sumner, 2007). Crane et al. (2007), however, in reviewing the studies on various treatment modalities of anorexia nervosa found that OCPD traits led to poorer treatment outcome.

Psychotherapy directed to OCPD

Fiore, Dimaggio, Nicolo, Semerari, and Carcione (2008) reported a case study of Metacognitive Interpersonal Therapy (MIT) with a male having OCPD and avoidant PD. MIT focussed on improvement of patients metacognition, defined as the ability to understand mental states, and access to one's own affects and destructive self-evaluation, using both individual and group therapy (e.g. role-playing and evaluation by peers). For full details of MIT, see Fiore et al. (2008). After 31 individual and 36 group sessions, the patient did no longer meet full criteria for any PD, although traits of OCPD and AVPD were still present.

One open trial has been reported in which the effects of cognitive therapy on OCPD were investigated. Strauss et al. (2006) reported on the effectiveness of CT consisting of 52 weekly sessions for 30 adult outpatients with avoidant PD or OCPD. CT resulted in significant changes in personality symptoms at post-treatment, assessed by the WISPI which was confirmed by the SCID-II. Also, only

7% of the patients met SCID-II criteria for OCPD at post-treatment compared to 100% at pre-treatment.

As shown by these pharmacological and psychological treatment studies, several treatment methods yield promising results in patients with OCPD. However, findings are scant and far from conclusive. There is a clear need for RCTs before more definitive conclusions can be drawn with respect to the effectiveness of treatment for OCPD.

General discussion

After reviewing the research in this area, we were struck by the relative absence of research focusing directly on OCPD, despite being one of the most prevalent PDs in community studies. Unfortunately, results found so far are often inconclusive, so there is a clear need for more studies into prevalence, course and co-occurrence using standardized assessment instruments, preferably structured interviews, in order to come at a more consistent picture. Because there are data to suggest that OCPD may enhance life success (Ullrich, Farrington, & Coid, 2007), perhaps contributing to the egosyntonic character of OCPD, the course of OCPD's 'positive side effects' should be studied as well. Similarly, there is some evidence that OCPD may enhance functioning in work situations. Skodol, Oldham, et al. (2005) found a negative relationship for the obsessive-compulsive personality dimension and poor functioning in employment. Based on our own clinical experience, however, these beneficial effects may occur until the age of around 50. At this stage, a number of individuals with OC personality pathology often are no longer able to meet their own highly perfectionistic standards, eventually resulting in severe psychological complaints such as occupational difficulties, burn out, depression and marital problems. Put differently, it is our impression that OCPD patients do not age well. These clinical impressions have not been validated yet, but are in accordance with the increase OCPD traits with

age (Rinsma & Colon, 1997; Ullrich & Coid, 2009). Presumably, many persons with OCPD function adequately for quite some time but may eventually feel distressed and depressed if they realize that they are not as successful in their work and social relationships as others. If this would be the case than distress and depression should develop as a result of problems related to the OC personality pathology rather than the other way around. Longitudinal studies are needed to test this model.

Also, by identifying both genetic and environmental risk factors, multivariate twin studies can add important information on OCPD's aetiology (Reichborn-Kjennerud, 2010). Molecular genetic studies are emerging, but the evidence to date does not support the view that specific genes are related to specific PDs. Presumably, multiple genes are involved in each PD, some of which will overlap with other PDs and/or Axis I disorders. In order to understand the interplay between genes and environment in personality traits and PDs, multivariate genetic studies are needed that take into account the genetic and environmental factors and gene-environment interaction (Emmelkamp & Kamphuis, 2007).

Unfortunately, controlled pharmacotherapy and psychotherapy research on OCPD as primary complaint is lacking, and much work needs to be done to identify effective therapies for these patients. The considerable co-occurrence of OCPD with Cluster A PDs is of special interest for future research, since it may have considerable implications for the development of pharmacotherapy and psychological treatment protocols. Moreover, we do need studies into the stable, core aspects of OCPD in order to make clear what the focus of these treatment approaches should be.

Further, because OCPD co-occurs with various Axis I disorders, it seems valuable to study if addressing the Axis I disorder in treatment does effect OCPD as well, or if one should address OCPD directly, thereby influencing the symptomatology of the Axis I disorder. It goes without saying that these therapies need to be tested in

RCTs or equivalent designs (Bartak et al., 2009, 2010). Given that there is some evidence that OCPD may improve over time (Grilo, Skodol, et al., 2004; Shea et al., 2002), a no-treatment control group is a minimum requirement for any RCT in this field before conclusions can be drawn.

Based on the results of the studies discussed in this review, it remains questionable whether OCPD belongs to the Cluster C PDs. Numerous factor analytic studies have attempted to map the latent structure of the personality disorders and/or to identify the dimensions of personality that may underlie the DSM personality disorders. Regarding the structure of DSM, the results are inconclusive, but some claim good fit (see Emmelkamp & Kamphuis, 2007). In a study of Nestadt et al. (2006), the overall latent structure of DSM-IV was examined in a large community sample. When all personality disorder criteria were entered in an exploratory factor analysis, five underlying factor emerged, four of which were associated with diminished functioning. The factors were labelled *compulsive*, *neurotic avoidant*, *aloof*, *impulsive callous* and *egocentric*. The OCPD traits are best represented in the compulsive factor. There is also some evidence that OCPD is well represented in the five-factor model of personality traits (FFM; Widiger & Trull, 2007), with high scores on conscientiousness. Maladaptively high levels of conscientiousness involve perfectionism, workaholism and compulsivity; low levels involve laxness, negligence and irresponsibility. The domain of conscientiousness is the domain in the FFM that is of most specific relevance to impairments concerning work and career.

Since a couple of years, there is a debate in the psychological literature that centres on whether personality disorders are best measured as dimensional entities, which incorporate abnormality at the extremes of a scale, or as taxonic entities, which comprise separate and distinct classes. Whether OCPD is a taxonic or dimensional construct is important given the theoretical question it raises: are individuals with OCPD qualitatively different from other people (a taxon) or do they

represent extreme variants of normality (a dimension). The personality disorder working group of DSM is considering incorporating a dimensional component into the personality disorders section of Diagnostic and Statistical Manual of Mental Disorders (Fifth Edition; DSM-V). There are many reasons for thinking that inclusion of dimensions in DSM-V will improve both clinical practice and research (Emmelkamp & Kamphuis, 2007). Nevertheless, as far as OCPD is concerned, it is important to ask whether there is evidence that a dimensional approach to OCPD is to be preferred to a categorical approach as currently used in DSM-IV-TR. Therefore, research in the latent structure of PDs is relevant. Taxometrics describes procedures that test between taxonic (latent category) and non-taxonic (latent dimension) models using multiple fallible indicators of the latent variable. A review of taxometric studies (Haslam, 2003) suggests that the personality disorders represent a mix of latent categories and dimensions, so that neither dimensional nor categorical models of latent structure are likely to have generalized applicability throughout Axis II. For schizotypal PD and antisocial PD, the evidence favours taxonicity, i.e., a categorical construct; for borderline PD, the evidence is in favour of dimensionality. Whether the population distribution of the criterion symptoms of OCPD is better represented dimensionally rather than taxonic remains to be adequately addressed. These studies are of vital importance in determining whether OCPD warrants continued presence in the diagnostic nomenclature as a separate type or can better only be represented on the proposed dimensional scales of DSM-V.

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