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# Understanding and Treating Anxiety Disorders in Presence of Personality Disorder Diagnosis

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<http://dx.doi.org/10.5772/53554>

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## 1. Introduction

The prevalence of personality disorders varies between 0.5% and 2.5% in the general population and it increases drastically in the clinical population [1, 2]. In a psychiatric population, about one half of all patients have pathological personality [3]. Following the multiaxial classification of the Diagnostic Manual of the American Psychiatric Association (DSM-IV-TR; [1]), Axis II personality disorders are defined as being stable, inflexible, and pervasive patterns of psychological experiences and behaviors that differ prominently from cultural expectations, and that lead to clinically significant distress or impairment in important areas of functioning. In the DSM-IV-TR, there are 10 distinct personality disorders organized into three clusters. Cluster "A" includes three personality disorders considered as odd or eccentric: paranoid, schizoid and schizotypal. Antisocial, borderline, narcissistic and histrionic personality disorders are grouped under Cluster "B", which is considered as the dramatic, emotional or erratic cluster. Finally, Cluster "C" comprises three anxious or fearful personality disorders: the avoidant personality disorder, the dependent personality disorder and the obsessive-compulsive personality disorder. In the next version of the DSM (DSM-V), the task force is proposing some major changes for Axis II and as per the may 1<sup>st</sup> 2012 online revision[4], the DSM-V will retain six personality disorder types : schizotypal, antisocial, borderline, narcissistic, avoidant and obsessive-compulsive.

The comorbidity between Axis I and Axis II disorders is much documented, and there are some voices in the scientific community that would even question whether or not the distinction between those two axis should be revisited [5-8]. Specifically, Axis II disorders have been found to be strongly associated with anxiety disorders [9, 10] and an increased prevalence of personality disorders has been found in patients with anxiety disorders [11, 12]. Per-

sonality disorders are associated to high social cost and mortality, such as crime, disability, underachievement, underemployment, increased need for medical care, institutionalization, suicide attempts, self-injurious behavior, family disruption, child abuse and neglect, poverty, and homelessness [12]. This underlies the importance of finding optimal treatment for this population, and understanding the mechanisms by which personality pathology interferes with other psychiatric disorders, such as anxiety disorders.

This chapter presents a comprehensive review of the literature on the co-occurrence of personality and anxiety disorders, and the treatment of the latter when comorbidity occurs. First, the influence of personality pathology on anxiety disorders in general is discussed, with no regard to specific anxiety disorders. Afterwards, the clinical features of each of the major anxiety disorders that are comorbid with personality disorders are examined separately. The influence of personality disorders on anxiety disorder symptomatology and on the course of illness is also discussed in terms of treatment. Emphasis will be on the outcome of cognitive and/or behavioral therapy, since its efficacy has been repeatedly established in the treatment of anxiety disorders. The influence of Axis II diagnosis on the outcome of pharmacological treatment of anxiety disorders is also briefly discussed. Major characteristics of the studies that are reviewed in the present chapter are presented in a table. Finally, future research questions on comorbidity of anxiety disorders in the presence of personality disorders are proposed.

## 2. Co-occurrence of personality disorders and anxiety disorders

From 36% to 76% of patients with anxiety disorders have been found to have a comorbid personality disorder diagnosis, with avoidant, dependent, obsessive-compulsive and paranoid being the most frequent [12]. Thus, anxiety disorders seem to be particularly associated with Cluster C personality disorders [13]. Personality disorders are known to be strongly associated with functional impairment [14], more severe psychopathology, and a decreased response to treatment [15]. When they coexist with anxiety disorders, the latter are characterized by chronicity and more functional impairment than when compared to anxiety disorders without Axis II comorbidity [11]. For example, in a study by Klass and colleagues [16], anxiety patients with comorbid personality disorders were three to four times more likely to have current dysthymia. Furthermore, patients with a personality disorder diagnosis were significantly more likely to present a past major depressive episode, and they received lower scores for current level of functioning, compared with a control group matched on primary anxiety diagnosis, sex, and age [16]. Moreover, the co-occurrence of personality disorders and anxiety disorders has been found to be associated with suicide. In one study, individuals with an anxiety disorder and antisocial personality disorder had more suicidal ideation and suicide attempts, in comparison to individuals with either disorder alone [17]. Finally, personality disorders were reported to have a negative prognostic impact on the naturalistic course of anxiety disorders. Ansell and colleagues [18] found that groups with higher rates of personality disorders generally showed a more complex and variable course of illness, which was characterized by frequent remissions and relapses, and the occurrence of new onsets of anxiety disorders over a 7-year period. Although, their sample was recruit-

ed among a treatment-seeking population, the purpose of this study was to investigate the naturalistic course of anxiety disorders. Thus, the treatment received was not controlled, and it was not considered in the analysis.

## 2.1. Etiology of comorbidity

It is likely that multiple mechanisms contribute to the co-occurrence of anxiety and personality disorders. One possible explanation is that Axis I and II disorders are etiologically independent and that apparent high rates of co-occurrence are simply due to high rates of each disorder [19]. However, Ruegg and Frances [12] argued that the high rates of co-occurrence found in several studies are due to sampling bias, since most studies have been made among treatment seeking populations. Given that treatment seeking generally correlates with higher symptomatology severity and with the presence of multiple comorbid disorders, it is likely that these samples overestimate the relationship between anxiety and personality disorders [12]. High rates of co-occurrence have also been explained by issues in assessing personality disorders among individuals with anxiety disorders. This refers to the "state versus trait" issue in comorbidity research [20]. Because mood state tend to color the perceptions, going through an episode of anxiety disorder may affect the patients' perception of their personality, which would result in a distorted report of the latter [19]. Thus, the presence of an Axis I disorder may result in a false positive diagnosis of personality disorder [12], which would lead to an overestimation of the prevalence of personality disorders among individuals with anxiety disorders. Several models have been proposed to explain the high rates of coexisting personality and anxiety disorders, and these are described in the following section.

First, it has been suggested that individuals with personality disorders are more *vulnerable* to develop comorbid disorders. Vulnerability models assume that the disorders are distinct but are causally related, such that the presence of one disorder increases the risk to develop the other [19]. For example, because of their interpersonal difficulties, individuals with personality disorders would be more prone to experience repeated, chronic and acute negative life events, such as failures and losses, which would then increase the risk to develop and/or maintain anxiety disorders [19]. Second, some studies have supported the hypothesis that personality disorder traits are risk factors for anxiety disorders. For example, schizotypal, antisocial, borderline, histrionic and dependent personality traits present in adolescence and early adulthood have been associated with higher risk of having an anxiety disorder by middle adulthood [21]. In one study [22], high narcissistic personality traits, measured one week after trauma, have been associated with an increased risk of developing posttraumatic stress disorder (PTSD) one month and four months after trauma, even when controlling for baseline anxiety disorders. However, Brandes and Bienvenu [23] mentioned that these findings do not consider possible causal mechanisms involved. For instance, personality disorder traits and anxiety disorders could share a common etiology, and personality disorder traits would only be earlier manifestations of these common causal influences [23]. Third, another model of comorbidity refers to overlapping criteria [24] and shared etiology [23]. Thus, characteristics of each disorder are viewed as manifestations of a common dimension of psychopathology, which would suggest that these disorders are not entirely distinct [19]. If they do share etio-

logical factors, a shared genetic influence could be expected. Indeed, some results have supported the hypothesis of a common genetic base to anxiety and personality disorders. For instance, avoidant and dependent personality traits have been found to be more common in first-degree relatives of patients with panic disorder (PD) compared with relatives of control participants [25]. In another study, obsessive-compulsive traits were higher in first-degree relatives of patients with obsessive-compulsive disorder (OCD), compared with relatives of controls [26]. However, these findings could also be explained by environmental influences [23], since patients and their relatives could have lived in a similar environment. Fourth, the pathoplasty conceptualization emphasizes the influence of one condition on the presentation or course of the other, but does not assume a shared etiology [19]. Thus, one condition may have an additive effect on the other condition, or exacerbate the latter [27]. For example, avoidant personality disorder (AVPD) and panic disorder with agoraphobia (PDA) may have a pathoplastic relationship such that the presence of personality traits and anxious predispositions interact to promote the development of personality or anxiety disorders [18]. Finally, it has been suggested that personality disorder traits could be shaped by the experience of having an anxiety disorder in childhood or adolescence [23]. For example, current anxiety disorders among adolescents have been found to predict schizotypal, schizoid, borderline, avoidant, and dependent personality traits in early adulthood, even when controlling for other Axis I disorders during adolescence [28]. However, in this study, personality disorder traits have not been assessed during adolescence, so it cannot be concluded that they were subsequent to the development of anxiety disorders [23]. Results from Kasen and colleagues [29] gave additional support to this model. Indeed, the presence of an anxiety disorder in adolescence was found to predict an increased likelihood of having a paranoid personality disorder in young adulthood, when controlling for personality disorders in adolescence. Also, adolescents who reported anxiety symptoms that were increasing over time were more likely to have a paranoid personality disorder, or an OCPD in young adulthood [29]. The authors suggested that behaviors and thoughts associated with perfectionism and rigidity, which characterized OCPD, may develop to help control anxiety symptoms [29]. Yet, these findings still do not exclude the possibility that personality and anxiety disorders share a common etiology, although in this case, personality disorders would be the later manifestations [23]. Though all these models give interesting explanations to comorbidity of anxiety and personality disorders, they are not mutually exclusive and it is likely that more complex bio-psycho-social models are needed to explain the co-occurrence of these psychopathologies.

### **3. Influence of personality disorders on the outcome of treatment for anxiety disorders**

Since patients with multiple psychopathologies are often excluded from treatment trials, comorbidity is often disregarded [30]. Thus, few controlled prospective studies have specifically examined the effect of comorbid personality disorders on the outcome of cognitive and behavioral treatment (CBT) for anxiety disorders. However, some studies have investigated this area of research, with interesting results.

The Reich and Green [31] review, based on studies of depressive and anxiety disorders, concluded that the presence of a personality disorder had a negative influence on the outcome of treatment for Axis I disorders. In fact, personality pathology was found to predict a negative outcome of treatment in practically all studies [31]. Another review [20], which covered empirical studies published between 1991 and 1993, yielded similar conclusions. However, with regard to anxiety disorders, only studies that investigated the outcome of treatment for PD or OCD were included in the two previous reviews. Although Reich confirmed the general conclusion that dysfunctional personality traits have a negative effect on the outcome of treatment for Axis I disorders in his latest review [32], he also reported that individuals with comorbid personality disorders show improvement of their anxiety disorder symptoms when treated for their anxiety disorder. However, in the Dreessen and Arntz [33] selective review, personality disorders were not found to predict negatively the outcome of psychological treatment for anxiety disorders. It was concluded that no specific personality disorder was consistently found to affect negatively treatment outcome of anxiety disorders, and that patients with a comorbid personality disorder were not more likely to select themselves out of treatment [33]. Finally, the authors reported that patients with a personality disorder generally do not respond less to cognitive and/or behavioral treatment for their anxiety disorder, compared to patients without a personality disorder. However, these authors also report in their review that personality disorders are found to have a negative effect on the outcome of pharmacological treatment for anxiety disorders.

#### **4. Panic disorder with and without agoraphobia (PD/A)**

Among panic patients, prevalence rates of comorbid personality disorders (mostly in the Cluster C) range from 37% to 60% [3, 34-42]. No study has yet established a clear link between a specific type of personality disorder and the diagnosis of PDA [43]. Some have reported a strong association of panic disorder with AVPD [35, 38], whereas others have found higher rates of obsessive-compulsive personality disorder (OCPD; [36, 44]). This being said, Mavissakalian, Hamann, and Jones [45] reported that personality disorders cannot be presumed to have specific etiological significance for PD, given that the personality disorder traits that are generally identified in PD patients are also present, and they are even more pronounced, in OCD patients.

##### **4.1. Initial symptomatology and course of illness**

Individuals with comorbid PD and personality disorders tend to present a higher clinical severity [3, 38, 44, 46] and a more chronic course of illness [41] than PD patients without a personality disorder. For instance, the presence of borderline personality disorder (BPD; [18]) or OCPD [47] was found to predict new onsets of PD, when no treatment is considered. In a study by Ozkan and Altindag [3], patients with comorbid PD and personality disorders had more severe anxiety, depression, and agoraphobic symptoms, onset was at younger age, and they had lower levels of functioning. On the other hand, Mellman and colleagues [37] found no significant differences in baseline clinical ratings, and on most measures of chronicity, se-

verity and duration of PD in the presence of a personality disorder. In Ansell et al. study [18], the presence of an AVPD at baseline was even associated with a decreased likelihood of relapsing in their PDA.

In addition, comorbid personality disorders in PD patients have been associated with an increased risk of suicidal thoughts [44, 48] and suicide attempts [48]. In one study [49], all PD patients who had made serious suicide attempts had a comorbid personality disorder. A significant correlation between suicide attempts and comorbid Cluster B personality disorders was reported, particularly with BPD and histrionic personality disorder [49]. Other studies found a similar association of BPD with suicidal ideation [50] or suicide attempts [3] among PD patients. Also, paranoid personality disorder has been reported to predict suicide attempts, and AVPD to predict suicidal ideation among this population [3]. Moreover, it appears that personality disorder criteria do not necessarily need to be met to aggravate the severity of PD. Indeed, studies have found personality disorder traits to be associated with more baseline clinical disturbance among this population. For instance, PD patients with a greater number of personality disorder traits have been found to be more symptomatic on almost all measures of psychopathology [51].

#### **4.2. Influence of personality pathology on the outcome of cognitive and/or behavioral treatment for panic disorder with and without agoraphobia**

Studies examining the effect of personality disorders on the outcome of cognitive and/or behavioral therapy for PD have obtained conflicting results. However, as can be expected, many studies have found a negative impact of personality disorders on the outcome of treatment. Tyrer and colleagues [52] randomly assigned 181 patients with generalized anxiety disorder (GAD), PD, or dysthymia to three modalities of treatment: pharmacological treatment, cognitive therapy, or self-help. Their results indicated that the presence of a personality disorder did negatively influence the outcome of cognitive therapy and self-help at the 2-year follow-up test. Using the same sample to measure the effect of time on treatment outcome, Seivewright, Tyrer, and Johnson [53] found that the presence of a personality disorder was still associated with a negative prognostic indicator five years after cognitive therapy. Other studies also found a negative influence of personality disorders on the outcome of CBT [38] or behavioral treatment [54] for PD. Keijsers, Schaap, and Hoogduin [55] found that higher personality psychopathology, as measured by the revised version of the personality diagnostic questionnaire ((PDQ-R; [56]) scores, was related to higher levels of agoraphobic avoidance and higher frequency of panic attacks after behavioral treatment. Yet, the relationship was no longer significant after statistical adjustment for multiple tests [55]. Chambless and colleagues [57] examined the effects of secondary major depression, dysthymia, GAD, and AVPD on the outcome of a behavioral treatment, which mostly consisted of an exposure-based individual treatment, and a group psychotherapy that focused on interpersonal and intrapsychic problems that were believed to maintain their PDA. Their results indicated that AVPD predicted less improvement in the frequency of panic attacks at the 6-month follow-up. Finally, the influence of specific clusters of personality disorders on treatment outcome has been found to vary depending on whether personality pathology was assessed dimensionally or categorically. For exam-

ple, the presence of a Cluster A diagnosis was the strongest predictor of CBT outcome when assessed categorically, whereas these Cluster A disorders were not associated with CBT outcome when assessed dimensionally [38].

In other studies, comorbid personality disorders have been found to have little or no impact on the outcome of cognitive and/or behavioral treatment for PD. Dreesen, Arntz, Luttels, and Sallaerts [58] results suggest that PD patients with and without personality disorders profit equally from CBT for their PD, although certain personality disorder traits were found to have some impact on treatment outcome. Indeed, OCPD traits were negatively related to treatment outcome, and borderline traits predicted better outcome, but this latter finding was only observed at the 6-month follow-up test. However, given that personality disorders were lumped together to obtain adequate sample sizes, the influence of individual personality disorders on the outcome of CBT for PD was not measured [58]. Black and colleagues [59] studied treatment response in 66 PD patients who had completed three weeks of treatment with cognitive therapy, pharmacotherapy, or placebo pharmacotherapy. Surprisingly, this study yielded different conclusions depending on the measurement method used to assess personality functioning. The presence of a personality disorder assessed by the Structured Interview for DSM-III-R Personality disorders (SIDP; Stangl et al., 1987) was not a predictor of treatment outcome at week four whereas the presence of a personality disorder assessed by a self-report questionnaire was a negative predictor of outcome in the groups receiving cognitive therapy or placebo [59]. In their selective review, Dreesen and Arntz [33] also examined the two previous studies, and the Chambless et al. [57] study. They concluded that personality disorders do not seem to significantly affect the outcome of cognitive and/or behavioral treatment for PD, but when personality disorders are examined separately, AVPD appears to be associated with a less favorable outcome in the long term, although it has no effect on immediate outcome [33]. To our knowledge, two other studies also concluded that patients with and without personality disorders seem to profit equally from CBT for their PDA [60, 61]. Hofmann and colleagues [62] found similar results. Indeed, personality disorder characteristics, as measured by the Wisconsin Personality Disorders Inventory (WISPI; [63]) were not found to predict outcome of CBT for PD. Finally, Kampman, Keijsers, Hoogduin, and Hendriks [64] examined whether Cluster C personality disorders predicted treatment response in a sample of 161 PD patients treated with CBT. Their results indicated that the presence of Cluster C personality disorders did not affect treatment outcome. These researchers [64] suggested that their results may be explained by the use of a self-report questionnaire to assess personality (PDQ-R), which is known to have high sensitivity, and moderate specificity [65].

#### **4.3. Pharmacological treatment**

The presence of a comorbid personality disorder has been found to be one of the most robust predictors of nonresponse to pharmacological treatment for PD [66]. For example, Marchesi and colleagues [67], in a study with 71 PD patients, found a negative effect of borderline personality traits on the outcome of selective serotonin reuptake inhibitor (SSRI) pharmacological treatment. In their study, Green and Curtis [35] measured the effect of personality disorders on the outcome of a pharmacological treatment (participants were treated

with a tricyclic antidepressant or an anxiolytic) among 25 PD patients. There was a significant relationship between the presence of at least one personality disorder and relapse, and with regard to specific personality disorders, AVPD was associated with an increased likelihood of relapse. Reich [42] found a negative association between the outcome of pharmacological treatment (benzodiazepine molecules) and the presence of borderline, antisocial, histrionic, and narcissistic personality disorders. However, other studies [62, 68] did not find an influence of personality disorders on the outcome of pharmacological treatment for PD. The Tyrer et al. study [52] mentioned previously also found no influence of personality disorders on the outcome of pharmacological treatment for PD, which is inconsistent with conclusions drawn from Dreessen and Arntz review [33]. This is explained by the fact that the Tyrer et al. study [52] has not been reviewed by Dreessen and Arntz [33], given that it did not meet the “best-evidence criteria” needed to be included in the review. Indeed, the authors only reviewed the studies that met the two criteria that they believed would meet the best designed studies, which are a prospective design, and the use of a structured, or semi-structured, interview.

In some studies, treatment consisted of combined CBT and pharmacotherapy. In one study [69], comorbid personality disorders were associated with a delayed response to pharmacotherapy and behavioral treatment for PD, and the association was stronger for AVPD. In another study [70], 60 PD patients were treated with SSRIs and CBT, or with CBT only. Results indicated that treatment for patients without a personality disorder was significantly more effective with regard to general psychopathology, PD symptoms, and depression. However, there were no differences between groups on overall symptoms of anxiety, as measured by Hamilton Anxiety Scale and Beck Anxiety Inventory [70-72].

## 5. Obsessive-Compulsive Disorder (OCD)

Studies have found prevalence rates of comorbid personality disorders of 49% to 75% in patients with OCD, and personality disorders from Cluster C were found to be the most diagnosed [45, 73-77]. As can be expected, many studies have reported OCPD to be the most diagnosed among clinical samples of OCD patients [26, 73, 75, 78-82], with prevalence rates of 18% to 55% [75, 78, 80]. However, other studies have found much lower rates of OCPD among OCD patients (6% for Baer et al. [83]; 4% for Joffe, Swinson, & Regan [84]; 4% for Steketee [77]).

### 5.1. Initial symptomatology and course of illness

OCD patients with comorbid personality disorders do not seem to have more severe OCD symptoms compared to those without personality disorders [76, 77, 80]. Cavedini and colleagues [78] found no differences in the severity of OCD symptoms at baseline between OCD patients with and without OCPD. However, studies indicate more depressive and anxious symptoms, and more impairment in functioning before treatment in OCD patients with comorbid Axis II diagnosis [76, 81]. Bejerot and colleagues [73] found similar results. In their



study, higher scores on all anxiety scales, and more functional impairment were reported for OCD individuals with comorbid personality disorders. In the Fricke et al. [80] study, the presence of a personality disorder was associated with more depressive symptoms and higher levels of functional impairment. In addition, the presence of an OCPD [18, 85] or an AVPD was found to predict new onsets of OCD, and the presence of a BPD diagnosis at baseline was associated with an increased likelihood of relapsing in OCD, when no treatment was considered [18].

## **5.2. Influence of personality pathology on the outcome of cognitive and/or behavioral treatment for OCD**

Baer and Jenike [86] reviewed the presence of comorbid personality disorders in OCD patients and their influence on treatment outcome. They concluded that schizotypal personality disorder was the only one that predicted poorer outcome of treatment (behavioral or pharmacological) for OCD. Although this Axis II disorder is not particularly common among patients with OCD [26], schizotypal personality disorder and traits have been repeatedly related to poor response to behavioral treatment for OCD [87, 88]. Moritz and colleagues [89] suggest that it may be the positive schizotypal symptoms (e.g. unusual perceptual experiences, paranoid ideation, sensory irritation, magical beliefs) that predict poor treatment outcome. Impairment of learning [88] and difficulties to comply with treatment [90] have also been suggested to explain nonresponse to OCD treatment among individuals with a schizotypal personality disorder. Moreover, OCD patients with a schizotypal personality disorder may respond better to low-dose atypical neuroleptics and specialized CBT for schizotypal symptoms [89]. Other personality disorders have been associated with a less favorable outcome of CBT among OCD patients. In one study [91], OCD patients with any Cluster A or Cluster B personality disorder showed a poorer response to behavioral treatment or CBT at 12-month follow-up, compared with patients without these diagnoses.

Some studies have found no effect of personality disorders on the outcome of CBT for OCD. Dreessen and colleagues [79] studied 43 OCD patients who completed a behavioral or cognitive treatment, or a CBT. The presence of one or more personality disorders had no impact on the outcome of treatment. Indeed, patients with personality disorders did not differ in their improvement from patients without a personality disorder, and they did not differ on their end-state functioning. Moreover, those who abandoned treatment did not differ from completers with regard to personality disorder characteristics. In another study [80], influence of personality disorders on the outcome of CBT has been compared for 24 OCD patients with comorbid personality disorders, and 31 without a personality disorder. Results indicated that both groups benefited equally from treatment, and were able to maintain their improvement at follow-up. Steketee [77] also found no association between personality disorders and the outcome of a behavioral treatment for OCD. However, the author suggested that an insufficient statistical power might have explained that no differences in outcome were found between patients with and without a personality disorder [77]. Surprisingly, a positive impact of personality disorder traits on treatment outcome was found: patients with dependent or avoidant personality traits had improved significantly

more on target symptoms at posttest. Yet, the improvement was not maintained during the follow-up period. No explanation was proposed for this unusual finding, and it should be carefully interpreted given the small sample size in this study ( $n=26$ ).

### 5.3. Pharmacological treatment

The presence of a comorbid schizotypal personality disorder has also been associated with poorer outcome of pharmacological treatment [87, 90, 92], and of combined behavioral and pharmacological treatment [88] for OCD. In one study [93], the presence of schizotypal personality disorder, AVPD, or BPD, and the presence of any Cluster A diagnosis were associated with poorer outcome of a tricyclic antidepressant treatment (TCA) for OCD. Cavedini and colleagues [78] found a negative influence of OCPD on the outcome of a pharmacological treatment. Thus, poorer response to TCA or SSRI treatment was reported in OCD patients with OCPD than those without the comorbid Axis II diagnosis. However, one study [94] found no effect of personality disorders on the outcome of an SSRI medication for OCD. An association with outcome was only found for AVPD, which was associated with greater improvement on OCD symptoms.

## 6. Generalized Anxiety Disorder (GAD)

Studies have reported prevalence rates of personality disorders of 35% to 50% among patients with GAD [13, 95-98]. Compared with PD patients, GAD patients have been found to be more likely to have at least one personality disorder [13]. Similar to personality disorders, GAD seems to be more trait-like than state-like, since its symptoms are fairly continuous and lasting in time [13]. Thus, it has been suggested that personality disorders may be a more important factor in the development of GAD than they are for other anxiety disorders [13, 99]. Although GAD does not seem to have a strong association with a particular type of personality disorder [100], Dyck and colleagues [13] found AVPD to be the most prevalent (22%) in their sample of 122 GAD patients. Some correlations have also been found with obsessive-compulsive traits [101], OCPD [102], and dependent personality disorder [96].

### 6.1. Initial symptomatology and course of illness

There is an association between low social functioning and the presence of personality disorders among GAD population, although the relation seems to be specific to certain areas of functioning [103]. Indeed, results indicated no significant association between the presence of a personality disorder and functioning with mates, siblings, or functioning as a student. In addition, personality disorders were found to influence the naturalistic course of GAD. For instance, Ansell and colleagues [18] found that GAD patients with OCPD or BPD at baseline were more likely to have a GAD relapse, and those with OCPD were also more likely to have a new episode onset of GAD, compared with patients without these personality disorders. Also, schizotypal personality disorder was found to be the strongest predictor of chronicity, which was measured by the proportion of weeks spent in episode of GAD [18].

In another study [95], the presence of AVPD or dependent personality disorder explained the lower probability of remission from GAD.

## **6.2. Influence of personality pathology on the outcome of cognitive and/or behavioral treatment for GAD**

Very few studies have examined the effect of personality disorders on the outcome of CBT for GAD. The lack of treatment studies with GAD patients may be partly explained by the fact that this anxiety disorder was not officially recognized as a primary diagnostic category until the appearance of the DSM-III-R [104]. However, Sanderson, Beck, and McGinn [97] examined the effect of personality disorders on the immediate outcome of a cognitive therapy for 22 patients with GAD. Although there were no significant differences in improvement and end-state functioning in patients with and without personality disorders, patients with a comorbid personality disorder were more likely to drop out of treatment [97]. In addition, the Tyrer et al. study [52] mentioned previously found a negative influence of personality disorders on the outcome of CBT for GAD.

## **6.3. Pharmacological treatment**

To our knowledge, very few controlled prospective studies have examined the link between the presence of a personality disorder and the outcome of pharmacological treatment for GAD. Although they did find an influence of personality disorders on the outcome of CBT, Tyrer and colleagues [52] found no effect of personality disorders on the outcome of pharmacotherapy for GAD. One retrospective study [102] examined the effect of personality disorders on the outcome of a benzodiazepine drug treatment for GAD. The results indicated that chronic GAD patients were more likely to have Cluster B or C disorders than were remitted GAD patients. However, it is impossible to assume that outcome is due to the original drug treatment because participants had not been assessed immediately after treatment. In fact, participants were only interviewed 16 months after treatment, and during the follow-up period, they have had different types of treatment, pharmacological or psychological. Also, personality disorders were not assessed before treatment [102]. Thus, based on these results only, it cannot be concluded that personality disorders have a negative effect on the outcome of pharmacological treatment for GAD.

## **7. Social phobia**

The rate of personality disorder diagnoses has been reported to be generally higher among social phobic patients than among patients with other Axis I conditions [13, 15]. Among anxiety disorder patients, some studies have also found the highest rates of personality disorders to be among patients with social phobia [16, 98]. The prevalence of personality disorders among social phobic patients ranges from 24% to 56% [105-107]. A strong association has been found between social phobia and AVPD [107-110]. Indeed, Dyck and colleagues [13] results indicated that individuals with social phobia were more than two times more

likely to have an AVPD, compared with patients with PD or GAD. Overall, studies have reported 36% to 89% of comorbidity between AVPD and the generalized subtype of social phobia [13, 111-114]. In fact, questions have been raised about the validity of the existing categorical distinction between these two disorders [15, 23, 105]. Indeed, DSM-IV-TR criterion A for social phobia (“a marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others; the individual fears that he or she will act in a way (or show anxiety symptoms) that will be humiliating or embarrassing”) overlaps with criterion four of AVPD (“the individual is preoccupied with being criticized or rejected in social situations”). In addition, DSM-IV-TR criterion D for social phobia (“the feared social or performance situations are avoided or else are endured with intense anxiety or distress”) overlaps with criteria one (“avoids occupational activities that involve significant interpersonal contact, because of fears of criticism, disapproval, or rejection”) and seven (“is unusually reluctant to take personal risks or to engage in any new activities because they may prove embarrassing”) for AVPD. Furthermore, given that studies have found few cases of AVPD without generalized social phobia [115, 116], it has been suggested that AVPD could represent a subtype of more severe social phobia [15, 39]. In a review of literature on this subject, Widiger [116] concluded that there is no evidence indicating a clear demarcation between the two disorders, and that they appear to be a single disorder. Moreover, a recent twin study [117] found a common genetic vulnerability to women with AVPD and women with social phobia, which gives support to the hypothesis of a shared etiology. Even though the literature has focused on the association of social phobia with AVPD, other personality disorders have been found to be prevalent among social phobics. In their review, Johnson and Lydiard [15] reported OCPD and dependent personality disorder to be the second most prevalent among social phobics. Thus, social phobia seems to be particularly associated with Cluster C personality disorders.

### **7.1. Initial symptomatology and course of illness**

In most studies, social phobic patients with comorbid personality disorders are reported to be more severely impaired before treatment. Mersch and colleagues [106] showed that social phobic patients with a comorbid personality disorder presented a more severe symptom pattern at baseline, with more irrational and negative thinking patterns, compared to those without a personality disorder. Moreover, two studies found more depressive symptoms for social phobic patients with personality disorders compared to those without an Axis II diagnosis [15, 107]. Herbert and colleagues [112] compared patients with generalized social phobia with and without AVPD, and found that patients with AVPD had more comorbid pathology, impairment in functioning, and reported higher levels of severity on all measures, including fear of negative evaluation, social avoidance and distress, depression and general psychopathology. Other studies have reported social phobic patients with a comorbid AVPD to have a more severe baseline symptomatology compared to those without an AVPD [111, 113]. In addition, the presence of a personality disorder, and more specifically an AVPD, has been associated with a decreased likelihood of remission from social phobia, when no treatment is considered [18, 95]. Patients with this comorbidity are also more likely to have a new episode onset of social phobia, in comparison to social phobics without an AVPD [18]. A comorbid AVPD was also found

to be the strongest predictor of chronicity of social phobia [18]. Finally, the presence of a schizotypal personality disorder has been associated with an increased likelihood of social phobia relapse [18]. Given that it may be difficult to distinguish between long-standing social fears and Cluster A personality disorder symptoms, the latter finding could be explained by an erroneous assessment [115]. Thus, the social isolation would not be the result of a social anxiety, but rather a consequence of the paranoid thinking that generally characterizes an individual with a schizotypal personality disorder.

### **7.2. Influence of personality pathology on the outcome of cognitive and/or behavioral treatment for social phobia**

Outcome studies have shown that there is no effect of personality disorders on the outcome of cognitive and/or behavioral treatment for social anxiety. For instance, a study [106] examining the outcome of two forms of treatment for social phobia, an exposure-based treatment or CBT, showed that patients with a comorbid personality disorder have been found to improve as much as those without a personality disorder. Another study [110] also indicated no differences on the outcome of a behavioral therapy with regard to the presence or absence of a comorbid personality disorder. Indeed, results indicated that patients with and without personality disorders improved at the same rate on social phobic avoidance, cognitions, and target situations that needed to be changed.

Because of its strong association with social phobia, many studies examined the specific effect of AVPD on the outcome of treatment. Feske and colleagues [111] examined its effect on the outcome of an exposure-based therapy for 48 patients with social phobia. Those with an AVPD improved less with regard to trait anxiety and self-esteem at posttest, but no differences in improvement rates were found with regard to depression, social adjustment and social phobic complaints. Although patients with an AVPD continued to have more severe symptomatology than those without AVPD at posttest and 3-month follow-up, both groups improved at the same rate during the follow-up period. However, the authors mentioned that interpretation of the follow-up data is difficult because of the additional uncontrolled treatments received during this period [111]. Other studies also reported no effect of AVPD on the outcome of cognitive and/or behavioral treatment for social phobia [110, 113, 118, 119]. Thus, evidence suggests no influence of AVPD on the outcome of CBT for social phobia.

To our knowledge, only one study [120] found a negative impact of personality disorders on the outcome of a cognitive and behavioral group treatment for social phobic patients. After treatment, patients without a personality disorder had improved significantly more on all outcome measures, except for the State-Trait Anxiety Inventory (STAI) and on the rating of avoidance of worst fear, for which there were no significant differences [120]. However, these results should be carefully interpreted, given that the effect sizes are very small for all of these outcome measures.

### **7.3. Pharmacological treatment**

Very few studies have examined the impact of Axis II diagnosis on the outcome of pharmacological treatment for social phobia. To our knowledge, one study [121] has found a

negative influence of personality disorders on the outcome of a pharmacological treatment for social phobia. In this study [121], long-term treatment with moclobemide (monoamine oxidase inhibitor; MAOI) was investigated among 101 social phobic patients. Treatment consisted of four years of moclobemide, with a drug-free period of at least one month, after the first two years. Dependent personality disorder and AVPD were diagnosed in 16% and 72% of patients, respectively. Results indicated that Axis II diagnosis predicted non-response to moclobemide.

## 8. Posttraumatic Stress Disorder (PTSD)

High rates of personality disorders have been found among individuals with PTSD [122-124]. Studies have reported comorbid Axis II diagnosis in 39% to 45% of PTSD patients [125, 126]. A strong association has been found between PTSD and BPD [127, 128]. For example, Zanarini and colleagues [129] results indicated that PTSD was significantly more diagnosed among BPD patients than among patients with other personality disorders. Also, in a sample of 34 male combat veterans with PTSD, BPD was the most common Axis II diagnosis, with a prevalence rate of 76% [123]. Shea and colleagues [124] also reported high rates of BPD [68%] among PTSD patients.

Given that past events of traumatic exposure are commonly reported by individuals with BPD [130], a history of trauma has been proposed to have a formative role in the development of BPD [131-133]. However, a strong association between the two disorders has not been found consistently across studies. In two other studies [126, 134], only 10% of PTSD patients had a comorbid BPD. Hembree and colleagues [126] suggested that these low rates might be explained by the exclusion of patients with current suicidal plans or intentions, and those with self-injurious behaviors from both studies. Since these characteristics are commonly present among individuals with BPD, this could have possibly led to the exclusion of a significant amount of BPD patients in those studies.

### 8.1. Initial symptomatology and course of illness

PTSD patients with comorbid personality disorders may experience a more severe course of illness than PTSD patients without personality disorders [135]. More specifically, Ansell and colleagues [18] found that PTSD patients with a schizotypal personality disorder at baseline were less likely to remit from PTSD than patients without a schizotypal diagnosis [18]. Surprisingly, their results also suggest that the presence of an OCPD is associated with a positive course of illness for PTSD. Indeed, patients with an OCPD at intake were less likely to have a PTSD relapse [18]. This could be explained by the fact that OCPD is characterized by perfectionism, meticulousness, rigidity, and extreme devotion to work and efficiency (DSM-IV-TR), which may lead to a good compliance with treatment. As mentioned previously, although Ansell and colleagues [18] investigated the naturalistic course of anxiety disorders, they recruited their sample among a treatment-seeking population. Even though no treatment was controlled in this study, the patients still received some form of treatment during

the 7-year period of the study. Thus, OCPD patients, because of their possibly good compliance with treatment, might have responded better to treatment for their PTSD, which might have led to a decreased likelihood of relapse.

However, most studies have specifically measured the impact of BPD on pretreatment symptomatology of PTSD patients. For instance, Axis I diagnoses were found to be more prevalent among individuals with coexisting PTSD and BPD, in comparison to individuals with PTSD alone [128]. A comorbid BPD diagnosis has also been associated with greater psychosocial impairment [128], and higher general distress [127, 136]. Moreover, studies have reported greater suicide proneness [128] among PTSD individuals with comorbid BPD, compared with PTSD individuals without BPD. Also, PTSD patients with comorbid BPD were reported to be more severely disturbed with regard to PTSD symptoms [127], although other studies did not find such differences between PTSD patients with and without comorbid BPD [136, 137]. Feeny and colleagues [134] also found no group differences on measures of anxiety, depression, and social functioning with regard to the presence or absence of partial, or complete BPD diagnosis.

## **8.2. Influence of personality pathology on the outcome of cognitive and/or behavioral treatment for posttraumatic stress disorder**

As for other anxiety disorders, studies have yielded conflicting findings with regard to the effect of Axis II diagnosis on the outcome of CBT for PTSD. In the Hembree et al. [126] study, there were no significant differences between women with and without personality disorders on the prevalence of PTSD at the end of CBT or prolonged exposure. However, significantly more participants without a personality disorder (76%) achieved good end-state functioning status than participants with a personality disorder (41%). However, the group with personality disorders had higher scores on measures of PTSD symptoms, anxiety, and depression at pretreatment compared to the group without personality disorders, which could explain that this group was less likely to achieve a good end-state functioning [126]. In their retrospective study, Feeny and colleagues [134] examined the effect of borderline personality characteristics on the outcome of cognitive and/or behavioral therapy among 72 women with PTSD. Their results indicated that the group without borderline personality characteristics (described as having no significant BPD symptoms) had achieved a better end-state functioning at posttest, although this result was not obtained at the 3-month follow-up. However, there were no differences between groups on PTSD status, and outcome measures at posttest and follow-up [134].

In one study [138] examining predictors of outcome for PTSD patients treated with an exposure-based treatment, personality disorders were not found to predict treatment outcome, or premature dropout. In their retrospective study, Clarke and colleagues [127] found similar results with regard to borderline personality characteristics. Their results indicated that PTSD women with higher rates of borderline personality characteristics benefited as much from CBT, and that they were not more likely to drop out of treatment. To our knowledge, no study has examined the influence of personality disorders on the outcome of pharmacological treatment for PTSD.

Authors	Year	Participants	Treatment	Influence of personality disorders on outcome	Other results
Tyrer, Seivewright, Ferguson, Murphy, and Johnson	1993	181 patients with GAD, PD, or dysthymia	Pharmacotherapy, cognitive therapy, or self-help.	The presence of a personality disorder was associated with a poorer outcome of CBT and self-help at 2-year follow-up.	
Seivewright, Tyrer, and Johnson	1998	181 patients with GAD, PD, or dysthymia	Pharmacotherapy, cognitive therapy, or self-help.	The presence of a personality disorder predicted poorer outcome of CBT and self-help at 5-year follow-up.	
<b>Panic disorder with and/or without agoraphobia</b>					
Green and Curtis	1988	25 patients with PD/A (13 had at least one personality disorder)	Pharmacological treatment (alprazolam, imipramine, or placebo)	The presence of one or more personality disorder, and the presence of AVPD were associated with relapse.	
Reich	1988	52 patients with PD/A (19 had at least one personality disorder)	Pharmacological treatment (alprazolam or diazepam)	The presence of antisocial, borderline, narcissistic, and histrionic personality disorders was associated with poorer outcomes on all measures, except for spontaneous panic attacks.	
Marchand and Wapler	1993	41 patients with PDA	CBT	No differences were found on outcome with regard to the presence or absence of a personality disorder.	
Keijsers, Schaap, and Hoogduin	1994	60 patients with PD/A	Behavioral treatment	As measured by PDQ-R scores, higher personality psychopathology was associated with higher levels of agoraphobic avoidance and higher frequency of panic attacks at posttest.	The relationship was no longer significant after adjusting for multiple tests.
Dreessen, Arntz, Luttel, and Sallaerts	1994 (1 <sup>st</sup> study)	31 patients with PD/A (14 had at least one personality disorder)	CBT	No influence on outcome was found with regard to the presence of a personality disorder.	OCPD traits predicted worse outcome at posttest, 1-month, and 6-month follow-up. Borderline personality traits predicted better outcome at 6-month follow-up.



Authors	Year	Participants	Treatment	Influence of personality disorders on outcome	Other results
Black et al.	1994	66 patients with PD/A (23 had at least one personality disorder when measured by SIDP-R, and 22 had at least one personality disorder when measured by PDQ)	Cognitive therapy, pharmacotherapy, or placebo.	The presence of a personality disorder was not a predictor of treatment outcome at week 4, when personality was assessed by the SIDP-R.	The presence of a personality disorder was a negative predictor of outcome at week 4 in groups receiving cognitive therapy or placebo, when personality was assessed by a self-report questionnaire (PDQ).
Fava et al.	1995	110 patients with PDA	Behavioral treatment	The presence of a personality disorder was associated with a decreased likelihood of remission for 7 years after treatment.	
Rathus, Sanderson, Miller, and Wetzler	1995	18 patients with PDA (10 had at least one personality disorder)	CBT	No differences were found on outcome measures with regard to the presence or absence of a personality disorder.	
Hofmann et al.	1998	93 patients with PD/A	CBT or pharmacotherapy	Personality disorder traits did not predict outcome of treatments.	
Chambless et al.	2000	49 patients with PDA (27% had AVPD)	Behavioral treatment	AVPD predicted less improvement in the frequency of panic attacks at the 6-month follow-up.	
Toni et al.	2000	326 patients with PD/A	Pharmacological treatment (antidepressants, mainly imipramine, clomipramine, and paroxetine)	Personality disorders were not associated with outcome of treatment.	
Berger et al.	2004	73 patients with PD/A (23 had at least one personality disorder)	Pharmacological treatment (paroxetine) or pharmacological treatment + cognitive therapy	The presence of a personality disorder, particularly AVPD, was associated with poorer response to treatment.	
Prasko et al.	2005	60 patients with PD/A (29 had at least one personality disorder)	Pharmacological treatment (SSRI) + CBT (15 patients received CBT only)	The presence of a personality disorder was associated with poorer outcomes on most measures.	There were no differences on overall symptoms of anxiety, with regard to the presence or absence of a personality disorder.

Authors	Year	Participants	Treatment	Influence of personality disorders on outcome	Other results
Marchesi et al.	2006	71 patients with PD/A (38 had at least one personality disorder)	Pharmacological treatment (paroxetine or citalopram)	BPD traits were negatively associated with remission of panic attacks	
Kampman, Keijsers, Hoogduin, and Hendriks	2008	161 patients with PD/A (of the 129 completers, 60 had at least one Cluster C personality disorder, and 47 had AVPD)	CBT	The presence of Cluster C personality disorders was not associated with outcome of treatment.	
Telch, Kamphuis, and Schmidt	2011	173 patients with PD/A (54 had at least one personality disorder)	CBT	The presence of one or more personality disorders was associated with a poorer outcome of CBT at posttest, when baseline severity of panic disorder was not controlled.	When baseline severity was controlled, Cluster A and C personality disorders were associated with poorer outcome. When assessed dimensionally, only Cluster C traits were associated with poorer outcome.
<b>Obsessive-compulsive disorder</b>					
Jenike, Baer, Minichiello, Schwartz, and Carey	1986	43 patients with OCD (14 with a schizotypal personality disorder and 29 without a schizotypal personality disorder)	Pharmacotherapy, Behavior therapy, or a combination of both	The presence of a schizotypal personality disorder predicted poorer response to both types of treatment.	
Minichiello, Baer, and Jenike	1987	29 patients with OCD (10 with a schizotypal personality disorder and 19 without a schizotypal personality disorder)	Behavioral treatment or Behavioral treatment + Pharmacological treatment	The presence of a schizotypal personality disorder was negatively associated with outcome.	The number of schizotypal traits was also negatively associated with outcome.
Steketee	1990	26 patients with OCD (13 had at least one	Behavioral treatment	Personality disorders were not associated with treatment outcome.	Dependent and avoidant traits were

Authors	Year	Participants	Treatment	Influence of personality disorders on outcome	Other results
		personality disorder)			associated with better outcomes.
Baer and Jenike	1990	67 patients with OCD	Pharmacological treatment (fluoxetine)	The presence of an AVPD was associated with more improvement on OCD symptoms.	
Baer et al.	1992	55 patients with OCD (33 had at least one personality disorder)	Pharmacological treatment (clomipramine)	The presence of schizotypal personality disorder, AVPD, and BPD was associated with poorer outcomes.	The presence of any Cluster A diagnosis, and the number of personality disorders diagnosed were associated with poorer outcomes.
Maina, Bellino, and Bogetto	1993	48 patients with OCD (44 had at least one personality disorder)	Pharmacological treatment	Number of personality disorders diagnosed, and the presence of a schizotypal personality disorder were associated with chronicity of OCD	
Ravizza, Barzega, Bellino, Bogetto, and Maina	1995	53 patients with OCD (28% (n=15) had a schizotypal personality disorder)	Pharmacological treatment (clomipramine or fluoxetine)	The presence of a schizotypal personality disorder was associated with nonresponse to treatment.	
Cavedini, Erzegovesi, Ronchi, and Bellodi	1997	30 patients with OCD (9 with an OCPD and 21 without an OCPD)	Pharmacological treatment (clomipramine or fluvoxamine)	The presence of an OCPD predicted poorer treatment outcome.	
Dreessen, Hoekstra, and Arntz	1997	52 patients with OCD (of the 43 completers, 22 had at least one personality disorder)	Behavior therapy, Cognitive therapy, or CBT	Personality disorders were not associated with outcome of treatment.	
Fricke et al.	2005	55 patients with OCD (24 had at least one personality disorder)	CBT	The presence of a personality disorder was not associated with treatment outcome.	
Hansen, Vogel, Stiles, and Göttestam	2007	35 patients with OCD (24 had at least one personality disorder)	CBT or Behavior therapy + relaxation training	The presence of Cluster A or B personality disorders was associated with poorer outcomes at 12-month follow-up, in both treatment conditions.	

Authors	Year	Participants	Treatment	Influence of personality disorders on outcome	Other results
<b>Generalized anxiety disorder</b>					
Mancuso, Townsend, and Mercante	1993	44 patients with GAD	Pharmacological treatment (adinazolam or placebo)	The presence of a personality disorder, particularly in Cluster B or C, was negatively associated with remission 16 months after treatment.	
Sanderson, Beck, and McGinn	1994	22 patients with GAD (9 had at least one personality disorder)	Cognitive therapy	Personality disorders were not associated with treatment outcome.	Patients with personality disorders were more likely to drop out of treatment.
<b>Social phobia</b>					
Turner	1987	13 patients with social phobia (7 had at least one personality disorder)	CBT	Patients with personality disorders improved less on most outcome measures during treatment.	
Mersch, Jansen, and Arntz	1995	34 patients with social phobia (8 had at least one personality disorder)	Behavioral treatment or CBT	Personality disorders did not influence the outcome of treatment.	
Hofmann, Newman, Becker, Taylor, and Roth	1995	16 patients with social phobia (8 with an AVPD and 8 without an AVPD)	Behavioral treatment	Patients with and without an AVPD improved as much with treatment.	
Brown, Heimberg, and Juster	1995	102 patients with social phobia (28 with an AVPD and 74 without an AVPD)	CBT	The presence of an AVPD did not predict treatment outcome.	
Hope, Herbert, and White	1995	23 patients with social phobia (14 with an AVPD and 9 without an AVPD)	CBT	The presence of an AVPD did not predict treatment outcome.	
Feske, Perry, Chambless, Renneberg, and Goldstein	1996	48 patients with generalized social phobia (35 with an AVPD and 13 without an AVPD)	Behavioral treatment	The presence of an AVPD was associated with less improvement on trait anxiety and self-esteem during treatment, but no differences were found with regard to depression,	However, patients with an AVPD continued to be more severely impaired at posttest and follow-up. When baseline depression was

Authors	Year	Participants	Treatment	Influence of personality disorders on outcome	Other results
				social adjustment and social phobic complaints. Patients with and without an AVPD improved at the same rate during the follow-up period.	controlled, AVPD no longer predicted improvement during treatment.
Versiani et al.	1996	101 patients with social phobia	Pharmacological treatment (moclobemide)	Personality disorders predicted nonresponse to treatment.	
Van Velzen, Emmelkamp, and Scholing	1997	61 patients with social phobia (30 without any personality disorder, 18 with an AVPD, and 13 with multiple personality disorders)	Behavioral treatment	Personality disorders did not influence the outcome of treatment.	
<b>Posttraumatic stress disorder</b>					
Feeny, Zoellner, and Foa	2002	72 women with PTSD (7 with complete BPD diagnosis, 5 with partial BPD diagnosis, and 60 without a BPD)	Cognitive therapy, behavior therapy, or CBT	There were no differences between patients with and without BPD characteristics with regard to PTSD status, and measures of PTSD symptoms, anxiety and depression after treatment.	The presence of BPD characteristics was associated with a decreased likelihood of achieving good end-state functioning at posttest.
van Minnen, Arntz, and Keijsers	2002	122 patients with PTSD	Behavioral treatment	Personality disorder traits were not associated with treatment outcome, or premature termination of treatment.	
Hembree, Cahill, and Foa	2004	75 women with PTSD (29 had at least one personality disorder)	Behavioral treatment or CBT	Personality disorders did not influence the prevalence of PTSD diagnosis at posttest.	Patients with a personality disorder were less likely to achieve a good end-state functioning after treatment.
Clarke, Rizvi, and Resick	2008	131 women with PTSD	Cognitive therapy or behavior therapy	Patients with higher BPD characteristics benefited as much from treatment.	

**Table 1.** Studies examining the influence of personality disorders on the outcome of CBT and/or pharmacological treatment for anxiety disorders

## 9. Mechanisms underlying the influence of personality disorders on treatment for anxiety disorders

Many arguments have been reported to explain the negative impact of personality disorders on the outcome of treatment for anxiety disorders. For instance, adverse life events have been found to be related to symptoms of anxiety and depression, and in many of those events, the individual is actively involved in both the onset and termination of the event [139]. Thus, personality disordered patients may create more negative life events for themselves, which contribute to chronic psychosocial dysfunction and increased stress [139], which in turn can negatively affect treatment outcome [32]. In addition, it has been argued that part of the differences in outcome between patients with and without personality disorders may be explained by higher drop-out rates among patients with comorbid personality disorders [32, 140]. Indeed, patients with personality disorders may experience less emotional improvement during cognitive therapy than patients without personality disorders [141]. Thus, these patients may drop out of treatment because they perceive therapy sessions as being less effective [142]. Given that compliance with treatment regimens as rated by the therapist has been associated with positive outcome of CBT for anxiety disorders [143], anxiety patients with personality pathology might comply less with treatment, which would negatively affect the outcome of intervention or lead to premature drop-out. Finally, as mentioned previously, patients with coexisting anxiety and personality disorders have been reported to have higher initial levels of symptomatology compared with anxiety patients without a personality disorder, which could account for the difference in results when baseline severity is not controlled in the analysis. When a person reports more severe symptoms at baseline, we could expect that this person would still remain more symptomatic after treatment, even though she might have improved at the same rate. In fact, the severity of symptoms before treatment has been found to predict the outcome of treatment for anxiety disorders. In one study, this baseline symptomatology has been found to be a strong predictor of end-state functioning at the 3-year follow-up test [46]. In the Telch et al. [38] study, initial levels of PD severity accounted for 27% of the explained variance in clinically significant change at posttreatment. Yet, after controlling for baseline severity of PD, results indicated that the presence of a Cluster A personality disorder still had a significant negative effect on treatment outcome, although the relationship was very modest [38].

## 10. Effect of treatment for anxiety disorders on personality functioning

There is evidence suggesting that treatment for Axis I disorders reduces Axis II disorders and traits. For example, Ricciardi and colleagues [144] reported that 90% of responders to OCD pharmacological and/or behavioral treatment no longer met criteria for a personality disorder, mostly avoidant, dependent, or obsessive-compulsive personality disorder. Some authors have argued that improvement of personality functioning with treatment for anxiety disorders is explained by the instruments used to assess personality, which may confound Axis I and Axis II disorders [145] or be unable to distinguish between abnormal personality traits and personality

disorder symptoms [146]. Also, as mentioned previously, assessment of personality may be affected by the presence of Axis I disorders, which would explain improvement in personality functioning with improvement of OCD symptoms [144]. In addition, three studies [147-149] have found a reduction of avoidant personality traits after pharmacological treatment for social phobia. However, most of the studies that examined changes in personality functioning with anxiety disorder treatment were conducted among patients with PD. Thus, improvement in personality functioning with cognitive and/or behavioral treatment for PD has been demonstrated more than once [61, 62, 146, 150, 151]. For instance, PD patients treated with CBT have been reported to show significant decline in all personality disorder subscales, with the exception of schizoid personality traits, from pretreatment to the second assessment (after the 11th session; [62]). However, the decline from the second to the third assessment (six months after the second assessment) was not significant for any of the subscales, except for the Schizoid Personality Disorder Scale, even though patients had received six additional monthly maintenance sessions during this period. Although these results were obtained when responders and nonresponders were combined, responders to CBT were found to have greater improvement in personality disorder characteristics than nonresponders to CBT [62]. In another study [150], an 82% decrease of personality disorder traits has been found among PD patients treated with cognitive therapy. Pharmacological treatment for PD has also been demonstrated to improve personality disorder characteristics [36, 62]. For example, in Marchesi et al. study [36], the rate of personality disorders has been found to decrease from 60% before treatment to 43% after treatment, and these results were mainly due to the reduction in the rate of paranoid, avoidant and dependent traits. The results obtained in these studies do not necessarily indicate that personality changes that occur after successful treatment for anxiety disorders result in a return to pre-morbid function [23]. Indeed, there is some evidence suggesting that these patients' personalities still remain differentiable from normal controls [152]. Many suggestions have been made to explain the possible influence of anxiety disorder treatment on personality pathology. First, abnormal personality traits may be a consequence of living with an anxiety disorder [36, 61]. Thus, the personality dysfunction may decrease with the improvement of anxiety disorder symptoms. Second, an interaction or overlap of Axis I and Axis II symptoms may explain the improvement of personality dysfunction with successive treatment for Axis I disorders [20]. Third, CBT for anxiety disorders could provide general problem-solving skills to the patients, which could decrease pathological personality dysfunction [62]. In addition to the confounding assessment of personality in the presence of Axis I disorders that was reported earlier, methodological limitations may have led to these results. For example, in the Ricciardi et al. study [144], the very small sample size ( $n=10$ ) may have increased the risk of type I error. Thus, we cannot exclude the possibility that their findings are only due to chance fluctuations.

## 11. Issues to consider in therapy

Studies have yielded conflicting conclusions regarding the influence of Axis II diagnosis on the outcome of treatment for anxiety disorders. However, anxiety patients with comorbid personality disorders were consistently reported to improve on their anxiety disorder symp-

toms with treatment for their anxiety disorder, even though they did not always improve as much as patients without Axis II comorbidity. Therefore, these patients should not be excluded from treatment for their anxiety disorder, because of their comorbid diagnosis [33]. Also, clinicians should be aware of their own attitude towards patients with personality disorders, given that the therapist's belief that patients with a comorbid personality disorder will not benefit from any therapy, might initiate a self fulfilling prophecy [33]. In addition, to reduce the probability of early termination of treatment among patients with comorbid personality disorders, clinicians should identify these patients early in therapy, and frequently give feedback about the therapeutic process [142]. Since most individuals with personality disorders have major issues in their interpersonal relationships, it may be difficult to establish a solid therapeutic alliance. Thus, when working with patients with dysfunctional personality, it is often necessary to monitor patients' expectation with regard to the therapeutic relationship, to be flexible in using various relationship-building techniques, to identify the inevitable "ruptures" that occur in any therapeutic context, and to work to repair such ruptures when they occur [153]. Also, the dysfunctional attitudes<sup>1</sup> that are central to specific personality disorders should be discussed as a first step in therapy, given that they have a functional relation to anxiety, and that the development of some ego-dystony concerning attitudes is necessary for a specific anxiety treatment to be useful [155]. Finally, when working with patients with severe personality disorders, it is recommended to use a team-based treatment approach, since it may become emotionally too difficult for an individual therapist alone to treat patients with socially disruptive behaviors, such as parasuicide, and verbal and physical aggressions [153]. Moreover, patients' interactions with several professionals could enhance the acquisition of the adaptative skills taught in therapy. Special considerations in therapy should extend to individuals who consult for their personality disorder. Indeed, when patients present a history of anxiety disorders, treatment for personality disorders should be adapted to prevent the recurrence of anxiety disorder symptoms [18].

## 12. Plausible explanations for conflicting results

Some of the conflicting results that were presented in this chapter may be explained by methodological flaws in the existing studies, such as low statistical power (given the small sample sizes in many studies), failure to control for baseline severity of Axis I pathology, and the use of questionnaires to assess personality dysfunction [33]. Indeed, the use of a self-report questionnaire to assess personality pathology has been criticized. Compared to interviews, self-report questionnaires would be more sensitive to state factors, such as anxiety and depression, which would lead to a higher number of personality disorder diagnosis, particularly among individuals with Axis I disorders [33]. However, results from Black and colleagues [59] are not consistent with this, given that one more patient (23 vs 22) was diag-

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<sup>1</sup> Negatively biased assumptions and beliefs regarding oneself, the world, and the future. [154]



nosed with at least one personality disorder when an interview was used to assess personality instead of a self-report questionnaire.

Furthermore, two of the studies [79, 97] reported in the Dreessen and Arntz review [33] as having yielded negative findings showed a strong trend for a higher level of personality pathology in drop-outs than in completers [32]. This may indicate that there was a negative effect of personality pathology in these studies, which was manifested in the drop-out rates [32]. Finally, the general conclusions drawn from the Dreessen and Arntz review [33] should be carefully interpreted. Indeed, some studies were reported as having no effect of personality on outcome, although when examined separately, there was at least a moderate effect [32]. As mentioned by Reich [32], it was reported in the review that Dreessen and colleagues [58] obtained negative results, although obsessive-compulsive personality traits were related negatively to treatment outcome, and they reported negative findings for the Black et al. [59] study when it was actually concluded that the presence of a personality disorder was a predictor of poor outcome in the non SSRI-treated group when the self-report questionnaire was used to assess personality pathology.

### 13. Future area of research

Even though studies have yielded conflicting conclusions regarding the influence of Axis II diagnosis on the outcome of treatment for anxiety disorders, most studies examining the outcome of treatment for PD and OCD have found at least some influence of personality disorders on CBT or pharmacotherapy outcome. However, personality disorders were generally found to have no influence on the outcome of CBT for social phobia and PTSD. Yet, most studies on social phobia and PTSD exclusively examined the influence of specific personality disorders, AVPD and BPD, respectively, and little is known about the influence of personality disorders in general on treatment outcome for these anxiety disorders. No conclusions can be yielded from GAD studies, given that, to our knowledge, only three studies have examined the influence of personality disorders on treatment outcome for GAD, and that one of these had serious methodological limitations. Furthermore, the mechanisms that underlie the effect of Axis II disorders on the outcome of treatment for anxiety disorders are not strongly established. Future studies should concentrate on studying well reasoned hypotheses concerning these mechanisms [33] so that responsible personality variables could be understood, and intervention adapted for the needs of this specific population. For instance, the associations in course between anxiety and personality disorders may be explained by personality traits, which underlie both disorders [18], and examining these maladaptive personality traits could help us understand better the underlying mechanisms that explain the influence of personality on anxiety disorders. Although some studies have examined the influence of personality disorder traits on treatment outcome of anxiety disorders, different results have been obtained when personality was assessed dimensionally instead of categorically. In addition, improvement in the evaluation of personality is needed, to eliminate, or at least decrease, the overlap of Axis I and Axis II criteria. There is also a need for more consistency in the methods used to assess personality disorders, given that

different results were obtained when personality was assessed by a self-report questionnaire instead of an interview. Further research is needed to determine whether patients with comorbid personality disorders could attain levels of posttreatment functioning equal to anxiety patients without personality dysfunction by varying duration and/or intensity of treatment sessions [38, 106], or by combining different treatment modalities [80]. Finally, more controlled prospective studies with larger sample sizes are needed to better understand the influence of personality disorders on anxiety disorders, particularly for GAD, given the small number of studies conducted among individuals with this anxiety disorder.

## Author details

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