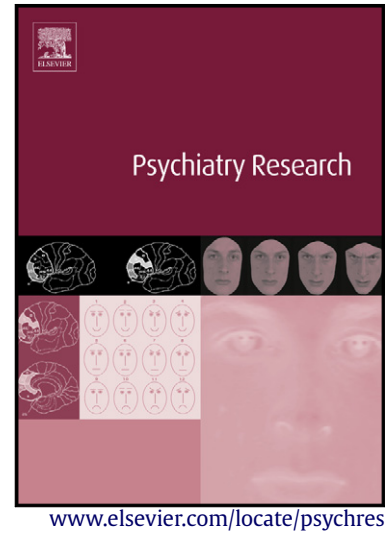# Author's Accepted Manuscript

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Shame in patients with narcissistic personality disorder

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Abstract

Shame has been described as a central emotion in narcissistic personality disorder (NPD). However, there is a dearth of empirical data on shame in NPD. Patients with NPD (N=28), non-clinical controls (N=34) and individuals with borderline personality disorder (BPD, N=31) completed self-report measures of state shame, shame-proneness, and guilt-proneness. Furthermore, the Implicit Association Test (IAT) was included as a measure of implicit shame, assessing implicit shame-self associations relative to anxiety-self associations. Participants with NPD reported higher levels of explicit shame than non-clinical controls, but lower levels than patients with BPD. Levels of guilt-proneness did not differ among the three study groups. The implicit shame-self associations (relative to anxiety-self associations) were significantly stronger among patients with NPD compared to nonclinical controls and BPD patients. Our findings indicate that shame is a prominent feature of NPD. Implications for diagnosis and treatment are discussed.

1. Introduction

Whilst the DSM-IV-TR (APA, 2000) defines narcissistic personality disorder (NPD) foremost by a sense of grandiosity, clinical literature depicts a paradoxical combination of grandiosity and vulnerability (Dickinson and Pincus, 2003; Pincus and Lukowitsky, 2010; Ronningstam, 2010; Miller et al., 2010). A prominent clinical feature of narcissistic vulnerability is the patient's propensity to suffer from feelings of intense shame (Dickinson and Pincus, 2003) which has only been recognised as associated feature of NPD in the DSM-IV-TR. However, empirical data on shame in NPD are very limited.

In the current manuscript, the term NPD refers to clinical cases as defined by the most up-to-date edition of the DSM available at the time the research was conducted. 'Pathological narcissism' refers to clinical descriptions or constructs that may not overlap completely with the DSM definition and often extend beyond this definition, e.g. by acknowledging grandiose and vulnerable facets or proposing a regulatory etiological model (e.g., Kohut, 1971; Kernberg, 1975, 2009; Horowitz, 2009; Ronningstam, 2010). Throughout the present manuscript, the term 'narcissism' refers to cases from non-clinical samples (mainly assessed with the Narcissistic Personality Inventory, (NPI); Raskin and Terry, 1988) and definitions from social psychology (e.g.,Morf and Rhodewalt, 2001; Tracy and Robins, 2004).

Shame encompasses an emotion resulting from a negative evaluation of the stable, global self, elicited by a perceived failure (Lewis, 1971; Tangney and Dearing, 2002). Explicit shame is defined as a deliberative, reflected emotional response towards negative evaluations of the self and is assessed with direct self-report measures (e.g., Lewis, 1971). Implicit shame is an automatic, overlearned, presumably non-conscious emotional response and is assessed with indirect measures (Greenwald and Banaji, 1995; Fazio and Towles-Schwen, 1999; Pelham and Hetts, 1999; Rüsch et al., 2007b). Furthermore, shame is often associated with characteristic bodily postures (e.g., posture that make the body appear smaller), head

movements (e.g., head tilting down or to the side), covering the face with the hand and downcast eye-gaze (Keltner and Buswell, 1996).

The initial introduction of NPD in the DSM III was largely influenced by psychoanalytic theories that describe shame as a core emotion in narcissistic psychopathology (e.g., Morrison, 1983). For instance, Kohut (1971, 1977) views shame as a prominent clinical feature in pathological narcissism. According to his view, children carry egocentric narcissistic needs that are tempered through empathic, realistic mirroring by their parents. Kohut hypothesized that repeated negative parental evaluations in childhood leads to increased shame reactivity in narcissistic patients. Moreover, due to a lack of empathic parental responses, narcissistic patients never move beyond earlier narcissistic developmental states that are characterized by narcissistic needs (i.e., need to receive excessive attention). According to Kohut's theory, individuals with pathological narcissism avoid frequent experiences of shame by reacting with rage or withdrawal. In line with this theory, Kernberg (1975) hypothesized that narcissistic patients suffer from negative interactions with primary nurturing figures. In contrast to Kohut, Kernberg does not consider pathological narcissism as a normal developmental stage. Instead, he proposes that negative parental interaction fosters narcissistic features that are characterized by unconscious negative self-representations that are strongly connected to the experience of explicit shame. In later life, acquired grandiose self-representations may conflict with implicit feelings of inferiority that are strongly connected to affective experiences of shame. Consequently, narcissistic patients use defence mechanisms that limit feelings of explicit shame in response to failures.

Further, theories from social-psychology also focus on self-regulatory processes as a core element of narcissism (e.g., Morf and Rhodewalt, 2001). Shame has been hypothesized as the central emotional component in this process (e.g., Tracy and Robins, 2004). According to theory, shame, as well as guilt, is elicited when an individual attributes the cause of a negative event to internal factors (e.g., Lewis, 1971; Tracy and Robins, 2004). Thus, shame

and guilt are elicited by a common set of cognitive processes. However, shame involves negative feelings about the dispositional (internal), stable and global self, whereas guilt involves specific, internal attribution patterns in response to failures (Tangney and Dearing, 2002; Tracy and Robin, 2004; Hasson-Ohayon et al., 2012). Thus, according to theory, individuals who tend to frequently engage in internal, *global* attributions when experiencing negative events should be more shame-prone. In contrast, individuals who tend to make more *specific*, internal attributions when experiencing a negative event are said to be more guilt-prone. Tracy and Robins (2004) proposed that the experience of shame (but not guilt) is the central feature of narcissistic individuals. The authors hypothesized that increased shame-proneness in narcissistic individuals is related to self-esteem discrepancies, i.e., verbally expressed grandiose self-views that contradict unconscious feelings of insecurity. In their view, narcissistic individuals are more self-focused and use different regulation strategies to prevent unconscious feelings of low self-esteem from becoming explicit, and thereby, experience explicit shame (e.g., appraise negative events as irrelevant to identity goals or attribute failure externally and become angry or aggressive) (Tracy and Robins, 2004).

Numerous empirical studies demonstrated that shame is in general more maladaptive than guilt (Tangney et al., 1992; Tracy and Robins, 2004). With respect to psychopathology, several studies provide evidence that shame and psychiatric impairment are strongly associated (e.g., depression, Andrews, 1995; posttraumatic stress disorder, Andrews et al., 2000; social phobia, Browning, 2005; borderline personality disorder, Rüsch et al., 2007b; reaction after negative live events, Uji et al., 2009; caregivers' distress, Weisman de Mamani, 2010).

Current clinical conceptualizations of pathological narcissism also propose a regulatory etiological model (e.g., Horowitz, 2009; Kernberg, 2009; Ronningstam, 2010). Grandiose and vulnerable facets in pathological narcissism can be understood as consequences of attempts to regulate self and self-esteem (e.g., Ronningstam, 2010).

According to Ronningstam, individuals with pathological narcissism can fluctuate between grandiosity and vulnerability depending on external or internal factors. Intense feelings of explicit shame belong to the vulnerable features of pathological narcissism and occur, for example, as response to negatively perceived events. As individuals with pathological narcissism try to avoid these intense feelings of shame, they engage in various intrapersonal and interpersonal strategies in order to prevent explicit shame (e.g., devaluation of others, responding with anger, and self-enhancement). Further, Ronningstam (2010) emphasizes that perfectionism is a significant feature of self-enhancement that is closely related to shame in pathological narcissism. When perfectionism is not sufficient enough to bridge the gap between real abilities and ideal imaginations about the self, feelings of explicit shame are especially likely to be elicited.

In summary, shame is a central feature of non-clinical and pathological narcissism in several theoretical models that might be relevant for the future definition of NPD. Until the present, there have only been a few studies on shame and narcissism, and these have relied on non-clinical or mixed clinical populations. For instance, explicit shame and narcissism (assessed with the NPI) are negatively correlated in non-clinical individuals (Gramzow and Tangney, 1992; Watson et al., 1996; Pincus et al., 2009). However, a recent study suggests that the NPI measures a grandiose variant of (normal or subclinical) narcissism that strongly overlaps with (high explicit) self-esteem (Vater et al., 2013b). Thus, the NPI is likely not appropriate for assessing pathological narcissism in clinical research on NPD. Another study used a more valid measure to assess pathological narcissism, the Pathological Narcissism Inventory (PNI, Pincus et al., 2009). The authors found a moderately positive correlation between explicit shame and pathological narcissism in a mixed clinical sample (PNI, Pincus et al., 2009). These data emphasize the importance of differentiating non-clinical and pathological narcissism, especially when assessing vulnerable facets of the disorder.

The overall aim of this study was to provide evidence of altered implicit and explicit shame in patients with NPD compared to controls. To our knowledge, this is the only study that assessed shame in a clinical sample of patients with NPD.

The first aim of this study was to assess explicit shame-proneness and state shame in patients with NPD compared to non-clinical controls. Explicit shame-proneness is a conscious, self-reported tendency to react with shame towards external events. Building upon theory and previous empirical findings of shame in pathological narcissism (provided above), we hypothesized that patients with NPD score higher on explicit state shame and explicit shame-proneness compared to non-clinical controls.

Second, existing studies on shame and narcissism exclusively assessed shame with self-report measures. Building upon clinical theories of NPD that propose high levels of not necessarily conscious shameful reactions in patients with NPD (see above), we hypothesized that patients with NPD show higher levels of implicit shame than non-clinical controls.

Third, shame and guilt are the two possible emotional responses in reaction to perceived failures. Several theories indicate that narcissistic individuals are more shame-prone than guilt-prone (e.g., Tracy and Robins, 2004; Martens, 2005). Thus, we hypothesize that patients with NPD do not differ significantly in guilt-proneness from non-clinical controls. By doing so, we aim to provide initial evidence that shame (but not guilt) is a central self-conscious emotion of NPD.

Fourth, and in order to investigate specificity, we included a clinical comparison group of inpatients with borderline personality disorder (BPD). We decided to include this clinical group as shame has previously been described as a prominent clinical feature in BPD (Crowe, 2004; Brown et al., 2009). Moreover, prior empirical data indicate that BPD patients had higher explicit levels of shame-proneness, state shame, and stronger implicit shame-self (relative to anxiety-self) associations in comparison to non-clinical controls (Rüsch et al., 2007b). Furthermore, we used BPD as a comparison group as both are personality disorders,

show a high comorbidity rate (Westen et al., 2006) and overlap in symptoms such as affect dysregulation (Blais et al., 1997). Thus, by comparing NPD to this "near neighbour" disorder, we tested whether heightened shame is specific to NPD patients or a characteristic of psychopathology in patients with personality disorder in general.

2. Method

2.1. Participants and Procedure

We recruited 53 patients diagnosed with NPD (according to DSM-IV, APA, 2000), 31 patients diagnosed with BPD (according to DSM-IV, APA, 2000), and 34 non-clinical controls. All patients were enrolled in a broad, multicenter clinical study on NPD at the Department of Psychiatry, Charité Berlin, and cooperating hospitals and outpatient settings in Germany. Axis-II diagnosis was assessed using the interview section of the German Structured Clinical Interview for DSM-IV-Personality Disorders (SCID-II, First et al., 1997; Fydrich et al., 1997). Two NPD patients were outpatients, the remaining NPD and all BPD patients were inpatients. All patients fulfilling criteria for both diagnoses NPD and BPD were excluded (N=25). All interviews were conducted by a trained psychiatrist and three trained psychologists. Interrater reliabilities of SCID-II Personality Disorder (PD) diagnoses were acceptable with κ=0.80 for NPD and κ=0.82 for BPD. Internal consistencies for SCID-II PD diagnoses (sum of criteria) were acceptable with Cronbach's α=0.86 for NPD and Cronbach's α=0.88 for BPD in the current study.

Axis-I comorbidity for the NPD sample was assessed with the German Structured Clinical Interview for DSM-IV Axis-I Psychiatric Disorders (SCID-I, First et al., 1996; Wittchen et al., 1997). The German Mini International Neuropsychiatric Interview (M.I.N.I., Sheehan et al., 1998; Ackenheil et al., 1999) was used for the BPD sample. We only included comparable sections of the M.I.N.I. and SCID-I because of different diagnostic sections in both interviews. Exclusion criteria for all patients included a history of psychotic disorder,

current mania or hypomania, current substance-induced disorder, mental retardation (IQ<80) assessed with subtest 4 of a German test of cognitive performance (Leistungsprüfsystem, LPS, Horn, 1983), or being a non-native speaker. 57% (*N*=16) of NPD and 61% (*N*=19) of BPD patients were treated with psychotropic medication (antipsychotics, antidepressants, mood stabilizers). No patients were treated with benzodiazepines.

Thirty-four non-clinical comparison subjects were recruited via media advertisements in Berlin, Germany. Non-clinical controls were only included if they had no current or lifetime Axis-I disorder (SCID-I screening, First et al., 1996; Wittchen et al., 1997), fulfilled no more than three criteria for any PD section in the SCID-II questionnaire (First et al., 1997; Fydrich et al., 1997), exhibited general intellectual functioning within the normal range (IQ>80), and were native speakers of German. For sociodemographic and clinical data see Table 1. All procedures were approved by the Human Subjects and Ethics Committee of Charité Berlin. Written informed consent was obtained from each participant.

2.2. Measures

2.2.1. Implicit shame

Implicit shame was assessed using the IAT (Greenwald et al., 1998; Rüsch et al., 2007b). As the IAT is a measure that uses reaction times to determine relative strength of associations (Greenwald et al., 1998; Greenwald and Farnham, 2000) between the self-concept and the attribute category, an equivalent comparison category for shame was required. As in a previous study that used this approach (Rüsch et al., 2007b), we selected anxiety as a reference for shame since both are negative emotions. Thus, we conservatively assessed implicit shame-self associations relative to associating oneself with another negative emotion (anxiety). We did not select a positive or neutral attribute category for comparison with shame as that would have led to interpretation difficulties; that is, it would not be clear whether we were assessing an effect specifically related to shame or an effect related to

negative affect in general. Thus, we controlled for the possibility that subjects may associate themselves with negative emotions or attributes in general, rather than with shame in particular. Target categories were *me* vs. *not me*, attribute categories were *shame* vs. *anxiety*. The reliability (split-half, Spearman-Brown) of the IAT in the present study was good $r=0.73$ ($P<0.001$).

During the computerized test, target category labels (*me* vs. *not me*) representing the self were displayed in the upper right and left corners of the screen and assigned to a left or right response key. The subjects were asked to assign stimuli (e.g. own name vs. others name) presented in the center of the screen to one of two response keys. Participants were instructed to make their judgments as quickly, but as accurately, as possible. If an incorrect key was pressed, a red X appeared in the center of the screen, and the next item did not appear until one of the correct keys had been pressed. All participants completed five blocks of category judgments (Table 2). In the first block of trials, classification of the target categories (*me* vs. *not me*) took place, and in the second block, classification of the attribute categories (*shame* vs. *anxiety*). The subjects were asked again to assign stimuli (e.g. *ashamed* vs. *fearful*) presented in the center of the screen to one of two response keys. In block 3, both classification tasks targets and attributes were combined. In block 4, the key assignments for the target category were reversed as compared to block 1 (Table 2) and the target and attribute discriminators were inversely recombined in block 5 (i.e., if *shame* and *me* had shared a response key in block 3, *shame* and *not me* shared a response key in block 5, and vice versa). Practice blocks (1, 2, and 4) consisted of 20 trials each, critical blocks (3 and 5) consisted of 20 practice trials and 40 test trials.

Sample items were *ashamed, embarrassed, shameful, self-conscious* (shame), *anxious, fearful, nervous, uncertain, afraid* (anxiety), *first name, family name, year of birth* (me), *others' first names, others' family names, or others' years of birth* (not me). Before the IAT started, the participants were asked to enter their first name, family name, and year of birth

and choose one out of four first names, four family names, and four birthdays that did not relate to or concern them. Female participants were shown female names (*Brigitte, Susanne, Claudia, Johanna*), and male participants were shown male names (*Wolfgang, Matthias, Thorsten, Johan*).

For each trial, the computer recorded reaction time in milliseconds from the appearance of the stimuli to the correct response. Based on the assumption that quicker processing reflects stronger associations, these reaction times were used to determine the relative strength of implicit associations between self- and other concepts on the one hand, and shame and anxiety attributes on the other by computing the D-algorithm (Greenwald et al., 2003). In this algorithm, all trials (including practice phases) of the combined blocks (block 3 and 5) are included. The mean reaction time of the shame-self combination was subtracted from the mean reaction of the anxiety-self combination, and this difference was divided by a personalized standard deviation of the combination phases, which ensured that the measurement was not influenced by differences in response speed between participants. This approach is thus optimal for comparisons between clinical and non-clinical groups. Positive scores represent a stronger association between self and shame (relative to anxiety). Negative values indicate a stronger association between self and anxiety (relative to shame).

No participant had to be excluded due to latencies (between 300 ms and 3,000 ms) or error rate (20% or more). Error rates were low in all three groups (< 4%) and did not differ significantly between groups.

2.2.2. Explicit State Shame

We used the German version of the Experiential Shame Scale (ESS, Turner, 1998; Rüsch et al., 2007a) which was designed to evaluate explicit state shame. It is composed of 11 semantic differential items assessing physical, emotional, and social markers of shame experiences "in this moment" on a scale from 1 to 7. Sample items are: "Physically, I feel: 1,

pale, to 7, *flushed*", "Emotionally, I feel: 1, *content*, to 7, *distressed*", "Socially, I feel like: 1, *hiding*, to 7, *being sociable* [reversed]". In the current study, the ESS demonstrated acceptable internal consistency (Cronbach's α=0.75). Construct validity of the ESS has been shown (Turner and Waugh, 2001).

2.2.3. Explicit Shame-proneness and Guilt-proneness.

The German version of the Test of Self-Conscious Affects version 3 (TOSCA-3, Tangney et al., 2000; Rüsch et al., 2007a) was used as a self-rating measure to determine degrees of explicit shame-proneness and explicit guilt-proneness. It consists of a series of 16 brief positive and negative scenarios each representing a different affective tendency (e.g. guilt, shame) and associated potential responses. Responses are rated from 1=*not likely* to 5=*very likely*. Sample scenario: "You are driving down the road and you hit a small animal. (A) You would think the animal shouldn't have been on the road. (B) You would think: 'I'm terrible.' (C) You would feel: 'Well, it's an accident.' (D) You'd feel bad you hadn't been more alert driving down the road." Cronbach's alpha was α=0.80 for shame-proneness and α=0.79 for guilt-proneness. Construct validity has been demonstrated (Tangney et al., 2000; Rüsch et al., 2007a).

2.2.4. Explicit State and Trait Anxiety.

In the study we used a relative Shame-Anxiety-IAT. As anxiety was our reference category, we provide additional evidence on explicit anxiety. By doing so, we aimed at examining whether anxiety is a prevalent emotion in NPD. Moreover, information on explicit anxiety may assist to rule out the possibility that the IAT effect is solely explained by lower anxiety. Therefore, we used the State Trait Anxiety Inventory (STAI, Spielberger et al., 1970) for measuring state anxiety (20 items) and trait anxiety (20 items). Items are rated on a scale

from 1=*not at all* to 4=*very much*. Internal consistency was excellent for state anxiety (Cronbach's α=0.94) and trait anxiety (Cronbach's α=0.94).

The experimental procedure was as follows: after applying inclusion and exclusion criteria, axis I and II comordidity were assessed. Psychometric scales, including state measures, were applied directly before the IAT. After the IAT, patients were debriefed.

2.3. Statistical Analyses

All statistical analyses were conducted with IBM SPSS Statistics 20 (SPSS Inc., 2011). Pearson product moment correlations were computed for correlations between the measures. We used Student's t tests, Welch's t tests, Analyses of Variance (ANOVAs), and Pearson's χ_2 tests for group comparisons of socio-demographic and clinical variables.

As age and gender differed significantly between study groups, we assessed main and interaction effects by including both variables as covariates in all analyses. For group comparisons of self-ratings, we used single factor analyses of covariance (ANCOVAs) and post hoc pairwise comparisons, which were based on estimated marginal means with covariates. All analyses were two-tailed and the alpha level was set at $P<0.05$. We used partial eta-squared (η_p^2) as the effect size for the ANCOVAs (Pierce et al., 2004) and Bonferroni adjustment for multiple comparisons.

3. Results

3.1. Correlations

Table 3 presents the intercorrelations of explicit and implicit shame, explicit guilt and anxiety variables. Consistent with previous findings (Hofmann et al., 2005; Krizan and Suls, 2008) shame-prone implicit self-concept and explicit variables were uncorrelated.

3.2. Group Differences

For demographic and clinical data, see Table 1. As there were significant differences in gender and age between the three study groups, we used both variables as covariates in the following ANCOVAs.

All ANCOVAs (with the exception of guilt-proneness) revealed significant main effects of group and are shown in Table 4. NPD patients had significantly higher scores in explicit state shame, explicit shame-proneness, explicit state and trait anxiety than non-clinical controls and significantly lower scores than BPD patients. The three study groups did not differ significantly in guilt-proneness. In all ANCOVAs, the covariates of gender and age revealed neither significant main nor interaction effects.

An ANCOVA with the IAT D-score (representing shame-self associations relative to anxiety-self associations) as the dependent variable and gender and age as covariates revealed a significant main effect of group. No significant main effect of age was observed. Gender had a significant main effect on the IAT score, $F(1,87)=9.19$, $P=0.003$, $\eta_{p^2}=0.096$ with females showing stronger shame-self associations (relative to anxiety-self associations) than males. Post hoc analyses revealed significantly higher D-scores for patients with NPD in comparison to non-clinical controls and significantly higher D-scores for patients with NPD in comparison to BPD patients. This indicated stronger shame-self associations (relative to anxiety-self associations) for NPD patients than for controls and for BPD patients. The data showed no significant difference in D-scores between BPD patients and non-clinical controls (Table 4, Figure 1).

Medication status as an additional co-variate in all ANCOVAs (state shame, explicit shame- and guilt-proneness, implicit shame-proneness, state and trait anxiety) revealed neither a significant main effect nor a significant moderator effect of medication status. All main effects of group did not change when medication status was included as a co-variate.

4. Discussion

The present study aimed to investigate explicit and implicit shame in patients with NPD and, to the best of our knowledge, presents the first empirical data on shame in a clinical sample of patients with NPD. According to our data, explicit measures of state shame and shame-proneness were significantly higher in NPD patients compared to non-clinical controls,

but significantly lower compared to BPD patients. However, NPD patients carried the highest levels of implicit shame-self associations (relative to anxiety-self associations) compared to both control groups. Explicit guilt-proneness did not significantly differ between NPD patients, BPD patients and non-clinical controls. In the following, we discuss these findings with reference to current conceptualization of NPD.

Our data provide the first empirical evidence that patients with NPD, compared to non-clinical controls, show higher explicit state shame and shame-proneness, as hypothesized by clinical theories (e.g., Martens, 2005; Ronningstam et al., 2010, Pincus and Lukowitsky, 2010). Our results extend previous findings in a mixed clinical sample, identifying explicit shame as a correlate of pathological narcissism (Pincus et al., 2009). However, increased explicit shame has been reported in a variety of psychopathologies (e.g., Andrews et al., 2000; Browning, 2005). In accordance, we found that high explicit shame was not specific to NPD, as BPD patients reported even more explicit shame. Moreover, guilt has been described as a more adaptive reaction to failure (Tracy and Robins, 2004) and has been associated more with reparative behavior than with psychopathology (Tangney, 1995). In accordance with prior assumptions, NPD patients (and also BPD patients) did not significantly differ in guilt-proneness compared to non-clinical controls. This finding supports the notion that explicit shame, but not guilt, is a common feature in patients with personality disorders. These findings replicate a previous study (Rüsch et al., 2007b) of higher explicit shame in BPD compared to non-clinical controls and patients with social phobia.

According to clinical theories, narcissistic individuals use different self-regulation strategies to avoid the experience of explicit shame. Assessing implicit shame could therefore constitute a fruitful complement to explicit shame measures in NPD research. Moreover, and in line with other studies (Hofmann et al., 2005; Rüsch et al., 2007b), we found no significant correlation between direct (self-reports) and indirect measurements (IAT). Based on dual process theories, non-correlation data support the assumption that there are separate

subsystems of information processing for shame (Gawronski and Bodenhausen, 2006). For these reasons, indirect measures of shame may provide useful additional information that can complement information obtained from direct measures such as self-report questionnaires.

Our results indicate that NPD patients implicitly associated themselves more strongly with shame than with anxiety (indicated by a positive IAT score), whereas the implicit association of non-clinical controls with anxiety was as strong as with shame (indicated by an IAT score close to zero). Interestingly, NPD patients also had significantly stronger shame-self associations (relative to anxiety-self associations) than BPD patients, indicating specificity of this finding for NPD. Two interpretations are plausible: First, shame might act as a more specific feature of NPD on an implicit level. Second, implicit shame is prevalent but less specific to NPD, i.e., lower IAT score in BPD compared to NPD might be related to strong anxiety-self associations in BPD, masking shame-self associations in this patient group (for further discussion see limitation section).

Findings of high implicit and explicit shame in NPD can be discussed within the theoretical framework of pathological narcissism (Pincus and Lukowitsky, 2010; Miller et al., 2010; Ronningstam, 2010): Grandiose and vulnerable facets of pathological narcissism are hypothesized to derive from self-esteem dysregulation, the attempt to maintain high self-representations, i.e., prevent low implicit self-esteem from becoming explicit (Morf and Rhodewalt, 2001; Ronningstam, 2010). In consequence, grandiose and vulnerable facets are hypothesized to fluctuate and help seeking clinical cases of NPD might present with more vulnerable facets of the disorder. Recent empirical data from inpatients with NPD support this notion by showing that these patients score lower on explicit self-esteem than non-clinical controls (Vater et al., 2013a).

More explicit state shame and shame-proneness in NPD patients is a further argument that clinical cases present more vulnerable features compared to non-clinical cases. Theories from social psychology hypothesise that narcissistic individuals are more self-focused

compared to controls, and thus, more prone to self-focused emotions (Tracy and Robins, 2004). Recent empirical data of impaired emotional empathy (the emotional response to another person's emotional state) in NPD compared to non-clinical controls are in line with this assumption (Ritter et al., 2011, Schulze et al., 2013). With regard to shame, one assumed core mechanism of vulnerability in NPD is the dysfunctional processing of perceived failures (e.g., Tracy and Robins, 2004). In narcissism, failures are hypothesized to be implicitly more attributable to global failures of the self, and therefore, elicit shame (Tracy and Robins, 2004). Our data indicating increased explicit state shame and shame-proneness in NPD compared to non-clinical controls supports this hypothesis. Shame can be an extremely painful emotion due to devaluation of the global self (Lewis, 1971). Patients with pathological narcissism are hypothesized to engage in different regulation strategies (e.g., Schoenleber and Berenbaum, 2012). Thus, NPD patients may avoid consciously experiencing shame and engage in external attributions (e.g., blaming the offender for the insult) (Lewis, 1971; Kohut, 1972; Scheff et al., 1989). This external attribution might result in feelings of anger and hostility (emotions that may be easier to tolerate and easier to express). In line with clinical theories, those dysfunctional behaviors in patients with NPD are hypothesized to act as a defense against excessive explicit shame in specific situations (Pincus and Lukowitsky, 2010; Miller et al., 2010; Ronningstam, 2010; Schoenleber and Berenbaum, 2012).

Moreover, implicit shame in patients with NPD could also foster dysfunctional behavior strategies that serve to prevent experiences of shame. For instance, self-aggrandizement across situations or engaging in pride-inducing activities (e.g., Uji et al., 2012; Schoenleber and Berenbaum, 2012) could function as reparative mechanisms for shameful memories associated with the narcissistic self. As a consequence, cognitive self-enhancement strategies could account for the relatively lower level of explicit shame in the NPD group compared to BPD patients (Campbell et al., 2000; Bosson et al., 2003). Another shame-regulation strategy is hypothesized to be perfectionism (Ronningstam, 2010).

Individuals with pathological narcissism are hypothesized to attain excessively high standards in order to prevent upcoming failures that could elicit shame (Ronningstam, 2010; Schoenleber and Berenbaum, 2012).

Our finding may also be discussed in light of shame inducing interactions with primary nurturing figures. As shame-proneness is assumed to result from long-lasting and intense levels of shame during an individual's development (e.g., Kohut, 1971; Claesson and Sohlberg, 2002), one could argue that NPD patients might have been affected by previous shameful experiences during interactions with significant others (i.e., parents). However, there is only sparse evidence that negative implicit evaluations develop in reaction to such early interactions (DeHart et al., 2006). Moreover, these studies refer to narcissism in non-clinical individuals. Future research may therefore investigate the developmental factors associated with explicit and implicit shame in patients with NPD.

Future studies should also take the neurocognitive deficits of NPD patients into account. With regard to perception of failure one has to acknowledge that recent data indicate that patients with NPD show deviant processing of social information (e.g., emotional faces, Marissen et al., 2012) that might contribute to misperception of external events and falsely labeling them as negative.

Our study has some limitations. Firstly, in this study we used an IAT that measured shame-self associations relative to anxiety-self associations. Due to the relative nature of this IAT, we cannot rule out the possibility that lower D-scores result either from lower implicit shame and lower implicit anxiety or higher implicit shame and higher implicit anxiety. Increased state and trait anxiety in NPD compared to non-clinical controls shows that anxiety is a prevalent emotion in NPD and thus suitable as a comparison-category relative to shame for the IAT. Nevertheless, NPD patients had lower scores on explicit state and trait anxiety compared to BPD patients. In consequence, lower D-scores in BPD compared to NPD might result from a strong shame-self and anxiety-self association. Our study design does not allow

answering this question and further studies are needed. Further arguments guided the selection of anxiety as reference category. First, by selecting anxiety we controlled for the possibility that participants associated themselves with negative emotions in general rather than with shame in particular. Secondly, there are alternative negatively valenced comparison emotions such as anger, sadness (basic emotions, Ekman, 1992), but we aimed at focusing on a negative, prevalent, and rather disorder-unspecific emotion. As anger has been specifically associated with NPD (Kohut, 1971; Martens, 2005; Miller et al., 2010; Schoenleber and Berenbaum, 2012) and sadness subsumes shame in linguistic hierarchical classifications (Shaver et al., 1987), we decided to use anxiety, a negative basic emotion (Ekman, 1992). Future research should investigate whether patients with NPD have an increased level of negative emotions across a broader range and should include narcissism-specific emotions such as anger, sadness, or envy. Thirdly, the IAT used in this study was already used as a valid measure of implicit shame-self associations relative to anxiety-self associations in patients with BPD, patients with social phobia and non-clinical controls (Rüsch et al., 2007b). Thus, we aimed at building upon existing findings from patients with BPD, social phobia and non-clinical controls. Finally, there are other implicit measures that could have served as indicators of implicit shame (e.g. Go/No-Go Association Task, Nosek and Banaji, 2001; Extrinsic Affective Simon Task, De Houwer, 2003; Single-Category IAT, Karpinski and Steinman, 2006). However, it has to be acknowledged that these alternative measures for assessing implicit attitudes performed worse with regard to validity and reliabilty (Bluemke and Friese, 2008; Rudolph et al., 2010; Stieger et al., 2011). At present, the two-category IAT used in this study is still the gold standard when assessing implicit attitudes (Stieger et al., 2011).

With regard to future studies, the assessment of behavioral and emotional consequences of shame in NPD could perhaps provide further information about the shame-related psychopathology. Previous research has shown that film clips or stress-induction

interviews (Dimsdale et al., 1988) can reliably activate emotional processing that could invoke emotions and shame respectively (Lobbestael et al., 2009).

Moreover, one could speculate that BPD patients would show a high shame-prone implicit self-concept, as experiences of invalidation in early childhood and adolescence are prominent in BPD (Linehan, 1993). Previous findings provided evidence that females with BPD or borderline personality features are prone to shame in their implicit self-concept (Rüsch et al., 2007b; Hawes et al., 2013). However, we could not replicate these previous findings indicating that BPD patients have a more shame-prone implicit self-concept than non-clinical controls, as the differences (see figure 1) did not reach statistical significance (Rüsch et al., 2007b). This was possibly due to a smaller BPD sample size in the present study compared to an earlier study (Rüsch et al., 2007b). Further, the present study included both female and male BPD patients and women exhibited a stronger shame-prone (relative to anxiety-prone) implicit self-concept compared to men (Hawes et al., 2013). Finally, patients with comorbid NPD were not excluded in former studies (Rüsch et al., 2007b).

Additionally, and in line with prior data (e.g., Westen et al., 2006), we had a high rate of comorbid cases (NPD and BPD diagnosis) which were excluded from study participation. An alternative future approach would be the inclusion of these comorbid cases and analysis of specific dimensions of psychopathology.

Furthermore, we did not distinguish between different aspects such as shame about one´s own body and shame that is experienced as a result of negative social evaluations (Andrews et al., 2002; Kämmerer, 2010). One could speculate that body-related shame is less important to NPD than shame experienced in social situations.

Finally, the number of female NPD patients and male BPD patients was too small to analyze group by gender interactions using a full-factorial gender by group analysis. Further, due to the small sample size, we could not control for axis-I or axis-II comorbidity, although we found that BPD was significantly associated with posttraumatic stress disorder.

The study has several implications for the diagnosis and treatment of NPD. Here we provide the first empirical evidence that shame is a characteristic feature of NPD which might have diagnostic relevance. The current DSM-IV-TR (APA, 2000) primarily focuses on grandiose aspects of the disorder. Nevertheless, the former DSM-III (APA, 1980) had already incorporated shame-proneness as part of an additional NPD criterion, "reaction to criticism", describing a shameful reaction in response to narcissistic injury. Due to the fact that "the criterion frequently failed to identify patients who were given a primary diagnosis of NPD by their clinicians" (Millon, 1998) and the fact that the criterion had similar (or even higher) sensitivity, specificity, positive predictive power, and consistence (phi coefficient) for paranoid personality disorder and BPD, the criterion had been excluded from the DSM-IV (Gunderson et al., 1991). Our data suggest, however, that high implicit shame might be as characteristic of NPD as explicit shame, which was assessed in prior DSM III validation studies (Gunderson et al., 1991; Millon, 1998).

After confirmation in future studies, the high implicit and explicit shame may assist in differentiating NPD from psychopathy. Although both tend to externalize blame, psychopaths or individuals with psychopathic traits have a decreased ability to experience and internalize shame (Cleckley, 1964; Morrison and Gilbert, 2001; Hare, 2003).

Shame has been acknowledged as a central emotion in pathological narcissism and NPD across different psychotherapy approaches. Various theoretical orientations have developed psychotherapeutic interventions designed to treat pathological shame and shame-related cognitions, schemas, and affective or behavioral responses (e.g., self-psychology approach, Kohut, 1971; transference focused psychotherapy, Kernberg, 1975; schematherapy, Young et al., 2003; cognitive-behavioral therapy; Beck et al., 2006). Nevertheless, the impact of these interventions on NPD in general and shame in particular has not yet been empirically evaluated and remains an important future task. Further, the current literature provides general guidelines for managing shame in NPD patients. NPD patients are clinically described as

being sensitive to shaming words (Ogrodniczak and Kealy, 2013) and our finding of increased shame-proneness supports this notion. As a consequence, therapists should be aware of the patient's susceptibility to shame and try to avoid shaming the patient. For example, shame might be elicited by clarifying comments or interpretations (Ogrodniczak and Kealy, 2013). Furthermore, it might be helpful to provide patients with a causal model of shame (Lecours et al., 2013). One overarching goal might be to build affect tolerance of shame, e.g., by dose-by-dose desensitization (e.g., Lecours et al., 2013).

Finally, suicidality has been associated with shame in NPD and narcissistic patients are more likely to commit suicide compared to psychiatric patients without the disorder, even in the absence of comorbid depression (Apter et al., 1993; Stone, 1989; Ronningstam and Maltsberger, 1998; Pincus et al., 2009). Hence, the possibility of a shame-related suicidal crisis should be taken into account when treating patients with NPD.

In summary, our data indicate that explicit and implicit shame might be a relevant feature of NPD for diagnosis and treatment.

Acknowledgements

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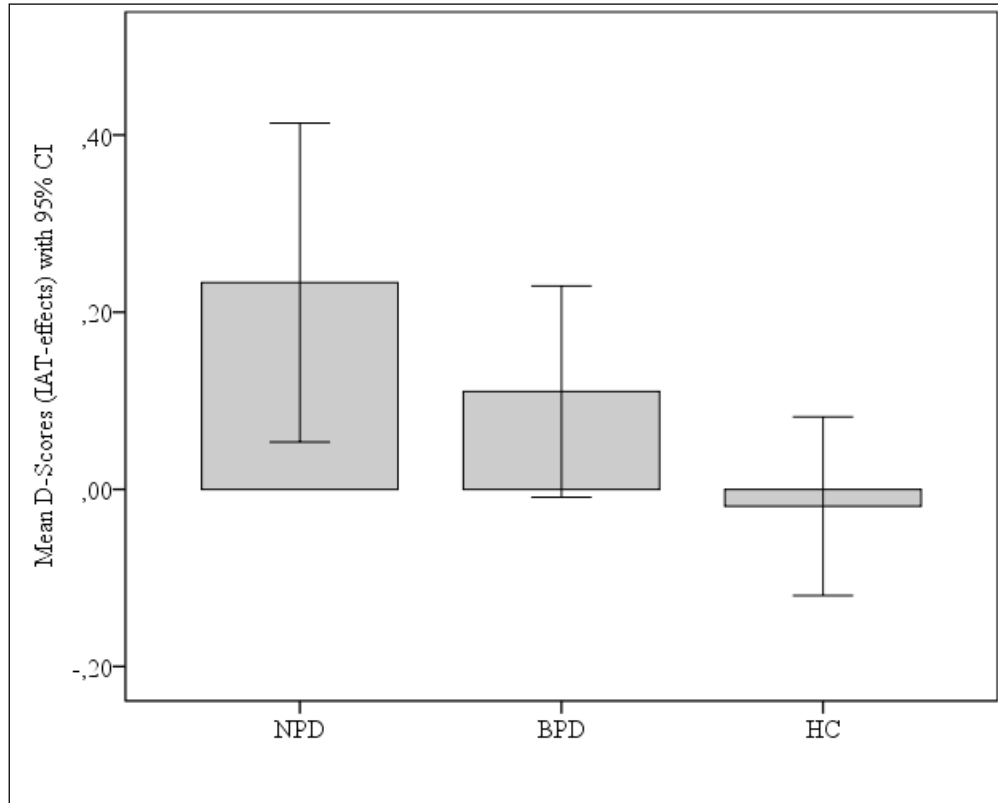
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Figure 1
Mean D-scores (IAT-effects) and 95% confidence intervals for the three study samples

NPD = narcissistic personality disorder, BPD = borderline personality disorder, NCC = non-

clinical controls; positive D-scores = more shame-prone implicit self-concept (compared to an

anxiety prone self-concept), CI = Confidence Interval

Fig. 1 Mean D-scores (IAT-effects) and 95% confidence intervals for the three study samples.
NPD=narcissistic personality disorder, BPD=borderline personality disorder, NCC=non-clinical
controls; positive D-scores=more shame-prone implicit self-concept (compared to an anxiety prone
self-concept), CI=Confidence Interval.

Table 1 Sociodemographic and Clinical Variables of Patients with Narcissistic Personality Disorder, Borderline
Personality Disorder, and Non-clinical Comparison Subjects.

	1. NPD (*N*=28)	2. BPD (*N*=31)	3. NCC (N=34)	Statistical test	
	M (S.D.)	M (S.D.)	M (S.D.)	Statistics	*P* value
Age (years)	37.46 (9.95)	28.77 (8.43)	31.61 (14.00)	F=4.606, d.f.=2	0.012
Fluid intelligence [a]	113.82 (12.09)	116.68 (12.31)	121.35 (11.76)	F=2.673, d.f.=2	0.075
Number of comorbid diagnoses	2.71 (1.80)	3.14 (1.94)	n.a.	t=-0.857, d.f.=54	0.395
	N (%)	*N (%)*	*N* (%)	Statistics	*P* value
Women	9 (32.1)	25 (80.7)	16 (47.1)	χ^2=14.892, d.f.=2	0.001
Any affective disorder	16 (57.1)	23 (74.2)	n.a.	χ^2=1.909, d.f.=1	0.167
MDE current	13 (46.4)	9 (29.0)	n.a.	χ^2=1.198, d.f.=1	0.274
MDE lifetime	15 (53.6)	16 (51.6)	n.a.	χ^2=0.015, d.f.=1	0.903
Dysthymia	4 (14.3)	7 (22.6)	n.a.	Fisher: χ^2=1.018, d.f.=1	0.313
Any substance use disorder	11 (39.3)	16 (51.6)	n.a.	χ^2=0.901, d.f.=1	0.343
Any anxiety disorder	8 (28.6)	15 (48.4)	n.a.	χ^2=2.429, d.f.=1	0.119
PTSD	2 (7.1)	10 (32.3)	n.a.	χ^2=6.788, d.f.=1	0.020
Any eating disorder	4 (14.3)	11 (35.5)	n.a.	Fisher: χ^2=3.487, d.f.=1	0.078
Any cluster A PD	7(25.0)	3 (9.7)	n.a.	Fisher: χ^2=1.791, d.f.=1	0.293
Any other cluster B PD [b]	6 (21.4)	2 (6.5)	n.a.	Fisher: χ^2=2.538, d.f.=1	0.142

Any cluster C PD	7 (25.0)	8 (25.8)	n.a.	χ^2=0.153, d.f.=1	0.696
Without psychotropic medication	12 (42.9)	12 (38.7)	n.a.	Fisher: χ^2=0.540, d.f.=1	0.584

Note. NPD=narcissistic personality disorder, BPD=borderline personality disorder, NCC=non-clinical controls, MDE=major depression episode, PTSD=posttraumatic stress disorder, PD=personality disorder, IAT=implicit association test, n.a.=not applicable.
[a]LPS=Leistungsprüfsystem.
[b]without BPD and NPD.

Table 2 Design of the Implicit Association Test for the Assessment of implicit shame-self associations relative to implicit anxiety-self associations (adapted from Greenwald et al., 1998).

	Block 1	Block 2	Block 3	Block 4	Block 5
Task description	Target discrimination	Attribute discrimination	Initial combined task	Reversed target discrimination	Reversed combined task
Task instruction	● Me Not me ●	● Shame Anxiety ●	● Me ● Shame Not me ● Anxiety ●	Me ● ● Not me	Me ● ● Shame ● Not me Anxiety ●
Sample stimuli	● Julia Brigitte ●	● Ashamed Anxious ●	● Julia ● Shame 1950 ● Anxiety ●	Julia ● ● Brigitte	Meyer● ●Embarrassed ●1950 Fear●
Number of trials	20	20	20+40	20	20+40

Note. Assignment to the left or right response key is indicated by black circles. The sample items are examples of idiographic stimuli for a subject called Julia Meyer, born in 1979, who is not familiar with a person called Brigitte Franke, born in 1950. (For detailed description of the IAT see method section.)

Table 3 Pearson Product Moment Correlations between Explicit and Implicit Measures in all participants (*N*=93).

	Implicit shame[a]	State shame	Shame-proneness	Guilt-proneness	State anxiety
State shame	0.029				
Shame-proneness	-0.010	0.438**			
Guilt-proneness	0.017	0.064	0.431**		
State anxiety	-0.011	0.603**	0.540**	0.011	
Trait anxiety	-0.103	0.611**	0.697**	0.117	0.868**

Note. **$P<0.01$ (two tailed), [a]implicit shame-self associations relative to anxiety-self associations.

Table 4 Group Comparisons for Shame-Prone Self-Concept (NPD vs. BPD vs. Non-clinical Controls; without Patients with both Diagnoses NPD/BPD) – IAT and Self-Rating Questionnaires.

Measure	1: NPD (*N*=28)	2: BPD (*N*=31)	3: NCC (*N*=34)	Analysis of covariance[b] Main group effect			Post hoc test (*P*)[c]		
	M (S.D.)	M (S.D.)	M (S.D.)	$F(2, 87)$	*P*	η_p^2	1 vs. 2	1 vs. 3	2 vs. 3
Implicit shame (IAT)[a]	0.23 (0.46)	0.11 (0.33)	-0.01 (0.29)	5.83	0.004	0.118	0.027	0.005	1.00
Explicit state shame (ESS)	3.83 (0.70)	4.58 (0.86)	3.03 (0.63)	35.63	<0.001	0.450	<0.001	0.001	<0.001
Explicit shame-proneness (TOSCA-3)	40.96 (8.72)	49.02 (9.05)	34.18 (7.67)	19.79	<0.001	0.313	0.018	0.008	<0.001
Explicit guilt-	57.50 (7.15)	58.08 (11.46)	55.12 (8.82)	0.51	0.600	0.012	1.00	1.00	1.00

proneness (TOSCA-3)									
Explicit state anxiety (STAI)	2.17 (0.37)	3.06 (0.56)	1.74 (0.68)	55.04	<0.001	0.559	<0.001	0.004	<0.001
Explicit trait anxiety (STAI)	2.43 (0.36)	3.06 (0.50)	1.71 (0.44)	67.19	<0.001	0.607	<0.001	<0.001	<0.001

Note. NPD=narcissistic personality disorder, BPD=borderline personality disorder, NCC=non-clinical controls, ESS=Experiential Shame Scale, TOSCA-3=Test of Self-Conscious Affects, STAI=State Trait Anxiety Inventory, IAT=Implicit Association Test.
[a]positive D-scores=stronger shame-self associations relative to anxiety-self associations.
[b]Covariate in all analyses=Gender and Age.
[c]Bonferroni for multiple testing.