Dysfunctional Affect Regulation

In Borderline
Personality Disorder
&
Somatoform Disorder

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Dysfunctional Affect Regulation

in borderline personality disorder and somatoform disorder

Disfunctionele Affect Regulatie

in borderline persoonlijkheidsstoornis en somatoforme stoornis

(*met een samenvatting in het Nederlands*)

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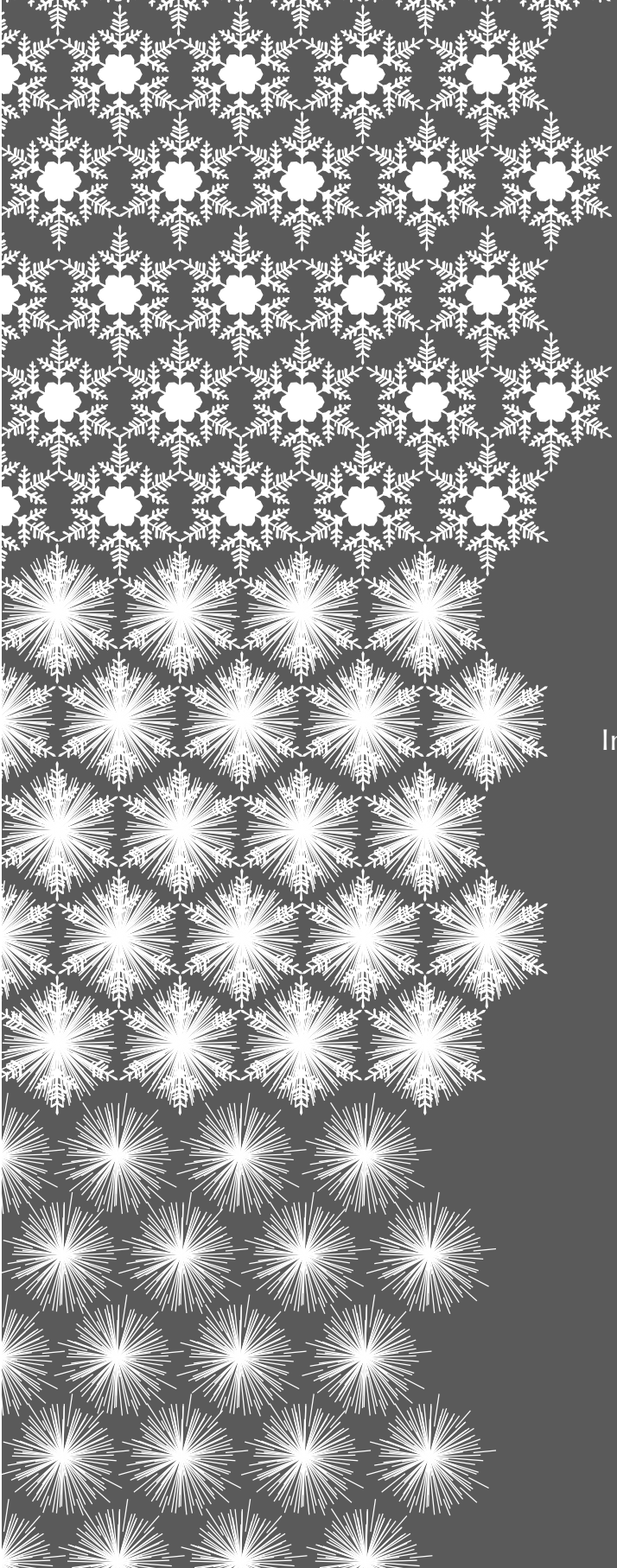


Chapter One

Introduction and outline

INTRODUCTION

A 42-year old woman developed a full blown pseudo-epileptic seizure. Three days later she was able to talk about what happened earlier that particular day. It seemed that she had telephoned the receptionist of the outpatient facility on Friday 17.00 hrs, because she wanted to talk to her psychotherapist. Unfortunately, the psychotherapist had already gone on week-end leave. Subsequent to hearing this, she developed the pseudo-epileptic seizure.

A 30-year old woman flew into a rage, called names, and became hyperaroused during group therapy when she was asked to wait with her contribution to the discussion and first listen to reflections of her group members on her behavior. She continued to be highly aroused, and could not return to baseline-arousal until several hours later after extensive reassurance by the group members and clinicians that she was "being a good girl."

A 27-year old man (semi-professional ice-skater) was admitted to the clinic when the rehabilitation of his broken leg was not progressing well. He stated that his leg continued to feel weak and unstable, and he had just heard that his potentially professional career as an ice-skater was over. During his visits to the rehabilitation center he had presented with emotional explosiveness and self-harming behavior that he seemed unable to recognize as a problem.

These three vignettes can be regarded examples of dysfunctional self-regulation and affect-regulation in response to social emotion-eliciting situations. The first vignette highlights the incapacity to emotionally express oneself verbally when confronted with intolerable affect, such that emotions instead are somatically expressed and become over-regulated. Difficulties differentiating, analyzing and verbalizing emotions hinders dealing with challenges in every-day life. The attempt to self regulate is dysfunctional here in the way that the psychological burden (intolerable emotional arousal) could not be contained and was expressed in physical symptoms, while the core of the problem was not addressed.

The second vignette highlights under-regulation of affect and the difficulties one can have regulating levels of arousal to baseline and keeping emotions within a window of tolerance in interpersonal contexts that have personal or posttraumatic significance. The

agitated response elicited by what appeared to be relatively mild limit-setting from the group leader and feedback from group members is indicative of the patient's difficulty in both maintaining emotional arousal within a tolerable window and recovering from distress. The apparent regression reflected by the patient's need (or the group members' perception of her as needing) to be soothed like a young child suggests that this under-regulation of affect may originate in much earlier life experiences in which the patient may not have been provided with (or able to accept and utilize) responsive caregiving.

The third vignette highlights the combination of a highly aroused affective experiencing while reporting diminished capacity for self-reflection and emotional self-awareness. It may be the case that symptoms of dysfunctional affect regulation were already present before this man broke his leg, and the intensive sports exercises that he engaged in as a result of his semi-professional athletic career may have helped him regulate himself. However, when confronted with forced immobility, arousal and distress could no longer be channeled or expressed in a physical way, leading him to have unanticipated difficulties recognizing, describing and expressing his emotions except in the form of frustration and impulsivity. As a result, this man may be experiencing a combination of difficulties with over-regulation (his characteristic mode of coping) and under-regulation (his reaction to an unprecedented physical crisis that may have shaken his confidence in himself, his career, and his future).

Affect Dysregulation and the Development of Psychopathology

Despite a vast amount of research on the benefits of successfully regulating affect for our mental and somatic well-being (e.g. Nyklíček et al., 2004), dysfunctional affect regulation for psychiatric patients remains unclear. However, it has been established that affect dysregulation is involved in the etiology of psychopathology (e.g., Bradley, 2000). Dysfunctional regulation is often described in patients with complex psychopathology and mental disorders, such as a combination of DSM- IV-TR axis I, and axis II, and axis III disorders; and it is also considered to be a maintenance factor or predictor of attrition and poor therapy outcome (Ford & Kidd, 1998).

Two mental disorders that have been theoretically, empirically, and historically associated with affect dysregulation are borderline personality disorder (BPD; Silbersweig, et al., 2007; APA, 2004) and somatoform disorders (SoD; Roelofs, Keijsers, Hoogduin, Naring, & Moene, 2002). Some even considered BPD (e.g., Linehan, 1993; Linehan, et al., 2006) and SoD (Waller & Scheidt, 2006) primarily to be disorders of affect regulation.

Borderline Personality Disorder

Patients with BPD have long been recognized as creating extraordinary challenges for the clinicians who treat them (e.g., Bateman & Fonagy, 2004). The major reasons for the treatment difficulties encountered are patterns of intense affectivity, destructive relationship management, impulsive behavior, and problems with mentalization that make it difficult for

the patient to reflect upon these patterns (Allen & Fonagy, 2006). Dysfunctional regulation in BPD has been associated with affect intolerance (Krystal, 1988), affect phobia (McCullough et al., 2003), failure of mentalizing (e.g., Allen & Fonagy, 2006), frantic anxiety associated with the anticipation of the separation of loved-ones (e.g., Yeomans, Clarkin, & Kernberg, 2002), failure in successfully down regulating negative affect (e.g., Linehan, 1993), failure of overcoming self-destructive behavior (e.g., Bell, 2003), failure of keeping affects within a window of tolerance (Siegel, 1999; Ogden, Minton, & Pain, 2006), developmental anomalies in the construction of the (social) brain (e.g., Cozolino, 2006; Fosha, Siegel, & Solomon, 2009), difficulties facial affect labeling (Wagner & Linehan, 1999), distortions in information processing (e.g., Ford, 2005), difficulties executive functioning (e.g., Fertuck, Lenzenweger, Clarkin, Hoermann, & Stanley, 2006), and integrative difficulties (e.g., Şar, Akyuz, Kugu, Öztürk, & Ertem-Vehid, 2006). However, dysfunctional affect regulation in BPD-literature has been primarily conceptualized as being hyper-aroused and being overwhelmed with negative affect: under-regulated affective experiencing.

Somatoform Disorders

Somatoform disorders are a group of disorders in which one experiences significant physical symptoms for which there is no apparent organic cause, or a surplus of physical symptoms upon medically explained illness (APA, 2004). Symptoms are not consciously produced in contrast to malingering, in which one fakes a symptom in order to avoid a test or military service, nor are symptoms controlled or managed in contrast to factitious disorder or Munchhausen syndrome, in which one fakes or establishes physical harm onto one self or to one's child (-by proxy) in order to get medical attention. Instead, one truly experiences these symptoms. Obviously, one of the great difficulties in diagnosing somatoform disorders is the possibility that one has a real physical disorder that is simply difficult to detect or diagnose. The category of somatoform disorders has been long under debate (e.g., Mayou, Kirmayer, Simon, Kroenke, & Sharpe, 2008). Two main shortcomings are that somatoform disorders do not form a coherent category and that subcategories are unreliable (Mayou et al., 2008). Somatization disorder, conversion disorder, pain disorder, and undifferentiated somatoform disorders have been primarily associated with affect dysregulation (Waller & Scheid, 2004, 2006), a complex of early and later life-trauma (e.g., Roelofs et al., 2005), and dissociation (e.g., Şar et al, 2004). While hypochondriasis, and body dysmorphic disorder have been associated with anxiety, i.e. fear of physical illness and fear of deformation of body parts and social rejection (Barsky, Wyshak, & Klerman, 2003; Mayou et al., 2008; Salkovskis & Warwick, 1986). Convincing patients with somatoform disorder that they need psychological treatment is not easy (Mayou et al., 2008). They tend to hold tightly to the belief that they are physically ill, despite all the physicians' conclusions and test results that have established no physical illness. Therefore, diagnosing and treating this group of patients is considered a challenging enterprise for clinicians (Mayou et al., 2008). The major

reasons for the treatment difficulties encountered here, are being physically focused, clinical presentation with numbness and lack of affectivity, argumentative relationship management, and problems with mentalising that make it difficult to reflect upon these patterns (Allen & Fonagy, 2006). Dysregulation in SoD has been associated with affect intolerance (Krystal, 1988), *la pensée opératoire* (operative thinking; Taylor, 2004), diminished emotional awareness (e.g., Lane & Schwartz, 1987), alexithymia (Cox, Kuch, Parker, Shulman, & Evans, 1994), poor fantasy life (Nemiah & Sifneos, 1970), lack of psychological mindedness (e.g., Denollet & Nyklicek, 2004), integrative difficulties (Nijenhuis, 2004), *la belle indifférence* (Stone, Smyth, Carson, Warlow, & Sharpe, 2006) and insecure attachment relationships (Scheidt & Waller, 2004). In all these studies, dysregulated affect in SoD has been primarily conceptualized as being numb or inhibited, and having difficulties addressing emotions: over-regulated affective experiencing.

Aim and Outline

The aim of this thesis is to provide a systematic exploration of the nature and distribution of dysfunctional affect regulation, it's associated phenomena and retrospectively reported potentially traumatizing events in patients diagnosed with BPD and SoD. Affect dysregulation typically seems to involve an interpersonal context. Whereas some patients react to adversities with inhibited experiencing and social withdrawal, others react hyper-emotionally and tend to cling to a significant other to alleviate stress and regulate to base-line. Attachment theory has become a prominent conceptual framework for understanding the process of development of affect regulation and dysregulation (Allen & Fonagy, 2006). Bowlby (e.g., 1988) highlighted the anxiety-buffering and physical protection functions of close relationships and conceptualized proximity-seeking as an affectively regulated alternative to the instinctive and typically dysregulated fight-flight responses. He also emphasized the importance of interpersonal (traumatic) experiences as sources of individual differences in affect (dys)regulation across the lifespan. Experiences associated with proximity to the attachment figure as non-rewarding or punitive, result in a de-activation of the attachment system, whereas experiences associated with sense of dependence and fear of being alone, result in hyper-activation of the attachment system (Mikulincer, Shaver, & Pereg 2003). In line with this, Van Dijke (2008) described dysfunctional regulation as operating in vicious cycles that approach the long-term sequelae of trauma-by-primary-caretaker from a developmental perspective. Dysfunctional regulation may presents in patients in three qualitatively different forms: Inhibitory-, Excitatory-, and combined Inhibitory & Excitatory (IE)-regulation. Symptoms include disturbances in self-regulation across several domains of functioning including affective, cognitive, somatic, relational, reflective, executive, behavioral, and psycho-physiological functioning. Activation of dysfunctional regulation seems to follow trauma-by-primary-caretaker associated negatively biased cognitive-emotional information processing (Van Harmelen, et al., 2010). However, when potentially neutral situations are

processed and evaluated as threatening or potentially harmful, dysfunctional regulation is activated false positively. Inhibitory regulation when activated based upon biased (negative-avoidant) cognitive-emotional information processing encompasses, among others, over-regulation of affect, negative psychoform and somatoform dissociation, fear of closeness in adult relationships, inhibited mentalization, narrowed executive functioning, immobilizing action tendencies, and dominance of the sympathetic system. Consequently, this results in interpersonal misunderstanding and disappointments, which in turn condition and uphold the insecure attachment representation/ working models turning into inhibitory regulation vicious circle. Excitatory regulation when activated based upon biased (negative-anxious) cognitive-emotional information processing encompasses e.g., under regulation of affect, positive psychoform and somatoform dissociation, fear of abandonment in adult relationships, pseudo mentalization, overly executive functioning, mobilizing action tendencies, and dominance of the dorsal vagal system. Consequently, this results in interpersonal misunderstanding and disappointments, which in turn conditions and upholds the insecure attachment representation/ working models turning into an excitatory regulation vicious circle. Combined Inhibitory & Excitatory (IE)-regulation encompasses both inhibitory and excitatory domains and symptoms that can present alternating or in combinations in patients. It should be noted that dysfunctionally regulated persons, when confronted with internal or external adverse events, risk to never meet the sense of personal efficacy, resilience, and optimism (Mikulincer & Shaver, 2004). Figure 1 summarizes the hypothesized relationships for dysfunctional regulation that were discussed above.

Not all hypothesized relationships presented in the figure could be studied within the scope of this thesis. The focus of the thesis will be on dysfunctional regulation domains affect, cognition and soma, the relations with potentially traumatizing events-by-the-primary-caretaker while differentiating developmental epochs, and the distribution of complex PTSD associated symptoms in our study groups. As BPD and SoD occur also comorbidly, both forms of dysfunctional affect regulation were also assessed in a group consisting of patients diagnosed with comorbid BPD+SoD, as well as in a psychiatric comparison (PC) group to assess how dysfunctional affect regulation is differentially distributed among all study groups.

Naturalistic Study

The study was executed in two mental institutions in the Netherlands. In order to enhance feasibility, the protocol was implemented in daily routine; all clinicians and participating junior-researchers were instructed in the rationale of the project and were trained and supervised in order to be able to interview and/ or collect data. Data collected serve also a direct clinical aim, that is, results were included in a psychological assessment-report for each patient resulting in indication of treatment choice.

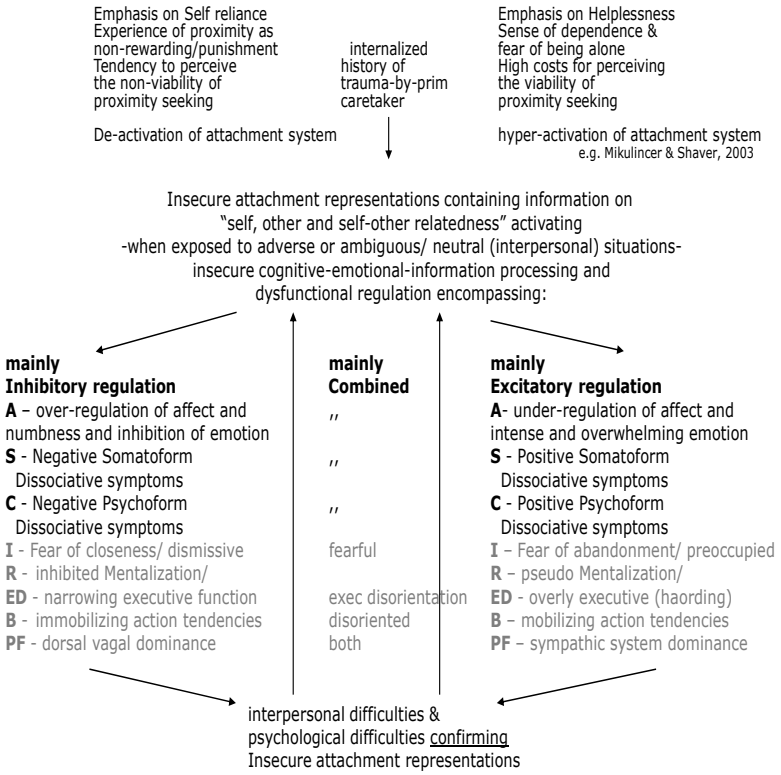


Figure 1. Dysfunctional Regulation Operating in Vicious Cycles
NB**: A**=affect; **S**=soma; **C**=cognition; **I**=interaction; **R**=reflective function; **ED**=exec dysfunction; **B**=behavior; **PF**= psycho-physiological; lines in light print were not included in the thesis

Are There Qualitatively Different Forms of Dysfunctional Affect Regulation?

Although BPD and SoD are each considered to be disorders of affect regulation, the quality of dysfunctional affect regulation seems differentially conceptualized. Whereas BPD has been primarily associated with hyper-arousal and being overwhelmed with emotions, SoD has been primarily associated with numbing and difficulties differentiating, analyzing, and verbalizing emotions. Reviewing the literature, no study systematically assessed both forms of dysfunctional affect regulation in BPD and SoD in unison.

The differential conceptualization of dysfunctional affect regulation raises the question if two qualitatively different forms of dysfunctional affect regulation do exist and whether these two forms are indeed differentially distributed among patients diagnosed with BPD or SoD. If BPD is indeed a disorder of affect regulation and if indeed dysfunctional affect regulation involves being overwhelmed with negative affective experiencing and having difficulties down-regulating negative affect, then all patients diagnosed with BPD should report under-regulation of affect and significantly more so than other study groups. Also, if SoD is indeed a disorder of affect regulation and if dysfunctional affect regulation involves being numb or

inhibited, and having difficulties addressing emotions, then all patients diagnosed with SoD should report over-regulation of affect, and significantly more so, than other study groups.

However, if there are indeed two qualitatively different forms of dysfunctional affect regulation present in BPD and SoD, then it might be expected that the comborbid BPD+SoD study group would report *both* forms of dysfunctional affect regulation. Furthermore, a psychiatric comparison group (PC) would not or would significantly less often report these forms of dysfunctional affect regulation. The results are described and discussed on their clinical and empirical merits in chapter two.

Are Positive and Negative Psychoform and Somatoform Dissociative Symptoms Related to Over- and Under-regulation of Affect?

Trauma-related overwhelming affect and it's dysfunctional regulation compromises the integrative capacities associated with cognitive-emotional information processing so that information becomes disassociated, disorganized, or disoriented (Courtois & Ford, 2009). Janet (1889) introduced his model of the mind consisting of two different ways the mind functions: (a) activities that preserve and reproduce the past, and (b) activities which are directed towards synthesis and creation (i.e., integration). In line with Janet, Van der Hart and colleagues (2006; Nijenhuis & Van der Hart, in press) consider dissociation a core feature of trauma: a division of personality into dissociative (biopsychosocial) subsystems that evolve when the individual lacks the capacity to integrate adverse experiences in part or in full[1].

Already in Janet's original research (and recently further conceptualized), the existence of dissociative subsystems manifests in positive and negative dissociative symptoms (e.g., dissociative flashback episodes; APA, 2004; Janet, 1901, 1907). These positive and negative dissociative symptoms can be further distinguished as psychoform and somatoform dissociative symptoms (Janet, 1901, 1907; Nijenhuis, 2004; Van der Hart et al., 2006; Van der Hart, Van Dijke, Van Son, & Steele, 2000). Negative dissociative symptoms refer to apparent losses of functions, for example, of memory, motor control, skills, and somatosensory awareness. Negative psychoform dissociative symptoms, among others, include loss of memory (amnesia) and loss of affective experiencing (numbness), loss of needs and will (abulia), loss of critical function (a cognitive action) resulting in suggestibility and difficulty thinking things through, loss of previously existing skills, and diminished sense of self. Negative somatoform dissociative symptoms, among others, involve losses of sensory, perceptual or motor functions, e.g., analgesia, paralysis, and aphonia. Positive psychoform dissociative symptoms include traumatic memories and nightmares that have affective, cognitive and somatosensory components such as dissociative flashbacks and full re-experiencing of traumatizing events, as well as intruding voices, thoughts, and amplified affective experiencing.

1 In the literature, these subsystems have received various names, such as dissociative parts of the personality (Van der Hart et al., 2006).

Positive somatoform dissociative symptoms include intrusions of sensorimotor aspects of traumatic re-experiences, including pain, uncontrolled behaviors such as tics, sensory distortions, and pseudo-epileptic seizures.

A few contemporary authors have noted the existence of positive dissociative symptoms (e.g., dissociative flashback episodes; APA, 2004; Nijenhuis, 2004; Van der Hart, Nijenhuis, & Steele, 2005; Van der Hart et al., 2000, 2006). However, most have not and report only of negative phenomena (e.g., Lanius et al., 2010; Harvey & Bryant, 1999; Marshall et al., 1999). Following Janet, there seem apparent similarities between the two qualitatively different forms of dysfunctional affect regulation and positive and negative dissociative symptoms. If positive dissociative symptoms can be distinguished from negative dissociative phenomena by means of self report, and dissociation and dysfunctional affect regulation are related but distinct phenomena, patients should be able to report distinct forms of experiencing: inhibitory and excitatory experiencing. Excitatory reports (reports of positive dissociation and under-regulation of affect) would be more expected in patients diagnosed with BPD. Inhibitory reports (reports of negative dissociation and over-regulation of affect) would be more expected in patients diagnosed with SoD. For the comorbid BPD+SoD group, reports of combinations of both forms of dysfunctional affect regulation with both positive and negative dissociation would be more expected, when compared to all other groups of patients. The results of the exploration of the presence and distribution of inhibitory and excitatory experiencing are described and discussed on their clinical and empirical merits in chapter three.

What is the Relation between Dysfunctional Affect Regulation in Adulthood and Self-reported Chilhood Trauma-by-primary-caretaker, while Distinguishing Developmental Epochs Vulnerable for the Development of Affect Regulation?

Several authors have addressed the negative impact of misattuned interaction and adverse interpersonal experiences on the post-natal development of the social-affective brain areas, the social-emotional personality, and the development of psychopathology (Allen, 2001; Courtois & Ford, 2009; Lyons-Ruth et al., 2006; Schore, 1994; Siegel, 1999). Adverse childhood interpersonal experiences when compared to interpersonal adversities later in life or natural disasters result in more complex trauma-related symptoms (e.g., Pelcovitz, Van der Kolk, Roth, Mandel, & Resick, 1997; Roth, Newman, Pelcovitz, Van der Kolk, & Mandel, 1997; Van der Kolk et al., 1996). However, a review of the literature revealed that no empirical study exists that specifically addressed the relations between under- and over-regulation of affect and the nature of the trauma-by-primary-caregiver (emotional, physical, and sexual trauma) while distinguishing developmental epochs (0-6 y, 7-12 y, and 13-18 years) vulnerable for the development of affect regulation. Reports of potentially traumatizing events in the developmental epoch 0 to 6 years would be associated with both and more dysfunctional affect regulation compared to reports in the developmental epochs 7-12 years of 13-18 years. The results of the exploration of the relation and distribution of potentially

traumatizing events by the primary caretaker for developmental epochs and two forms of dysfunctional affect regulation are described and discussed in chapter four.

What is the Presence of Complex PTSD/ DESNOS in BPD and SoD?

Historically, symptoms of both BPD and SoD have been associated with interpersonal trauma and hysteria (Briquet, 1859). Janet (1859-1947) described perhaps most precisely the psychological disturbances and multiple medically unexplained and often chronic physical complaints presented by patients (Janet, 1889, 1901, 1907). In most recent editions of the Diagnostic and Statistical Manual of Mental Disorders (DSM, APA) and International Classification of Diseases (ICD, WHO), symptoms similar to those of hysteria are described not for one mental disorder but for several mental disorders, such as personality disorders, somatoform disorders, posttraumatic stress disorder, and dissociative disorders (cf., Van der Hart et al., 2006).

Exposure to sustained, repeated or multiple potentially traumatizing events, particularly when a primary caretaker is involved, has been proposed to result in a complex symptom presentation that includes not only dissociative and posttraumatic stress symptoms, but also other symptoms reflecting disturbances predominantly in affective and interpersonal self-regulatory capacities (Cloitre et al., 2009; Paivio & Laurent, 2001). This complex symptom presentation does not seem to be encompassed by any single DSM-IV-TR or ICD-10 disorder (Ford, 1999; Van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005). Also, the association between trauma history and the development of a specific psychiatric disorder is complex: there is no one-to-one relation between certain forms of trauma and specific mental disorders (e.g., Van der Kolk, 1996). In an attempt to capture this complex symptom presentation, that includes not only posttraumatic stress symptoms and dissociative symptoms, but also disturbances in affective and interpersonal self-regulatory capacities, somatization, and shattered or altered basic beliefs, Complex PTSD (CPTSD; Herman, 1992; Pelcovitz et al., 1997; Roth et al., 1997; Van der Kolk et al., 1996; Zlotnick et al., 1996) or Disorders of Extreme Stress Not Otherwise Specified (DESNOS; Van der Kolk et al., 2005) was introduced. Some studies have reported an elevated risk of Complex PTSD symptoms in BPD (Ford, 1999) or report difficulties differentiating CPTSD from BPD (McLean & Gallop, 2003) and SoD (Spitzer et al., 2009). However, no study has systematically examined the association of BPD and SoD, separately and comorbidly, with early childhood trauma exposure, PTSD, and complex PTSD symptom severity and syndromal prevalence. It was hypothesized in this study that Complex PTSD is more frequently displayed in the comorbid BPD+SoD groups compared to all other study groups. Chapter five discusses the results of this study of the differential distribution of complex PTSD and the comparison of complex PTSD symptoms for all study group in unison.

Integration of Theoretical Insights, Best Practices, and Research Findings in Clinical Practice: Work in Progress.

Based on the existence of qualitatively different forms of trauma-related dysfunctional regulation, a protocol for clinical assessment and treatment of developmental trauma-related dysfunctional affective and interpersonal self-regulation was developed. This protocol originally was developed at the Department of Clinical and Health Psychology, Utrecht University, and was later, in close collaboration with two multi-disciplinary teams from Delta Psychiatric Hospital, Poortugaal, and Altrecht Mental Health, Zeist, the Netherlands implemented in daily clinical routine. The protocol is not considered to be a gold standard but rather an integration of theoretical perspectives, evidence-based information, and best-practices that proved feasible and effective for these two multi-disciplinary teams. Moreover, it is work in progress. Chapter six outlines the multi-disciplinary assessment and treatment as implemented in two clinical settings.

Finally, the results of the studies presented in this thesis are summarized, their consequences for assessment and treatment are highlighted, and some indications for future research are provided in chapter seven. Also, summaries in Dutch and English are provided.

Chapter two

Affect Dysregulation in Borderline Personality Disorder and Somatoform Disorder: Differentiating Under- and Over-Regulation

Van Dijke, A., Ford, J.D., Van der Hart, O., Van Son, M.J.M., Van der Heijden, P.G.M., & Bühring, M. (2010). Affect dysregulation in borderline personality disorder and somatoform disorder: Differentiating under- and over-Regulation. *Journal of Personality Disorders, 24,* 296-311.

ABSTRACT

Introduction

Although affect dysregulation is considered a core component of borderline personality disorder (BPD) and somatoform disorders (SoD), remarkably little research has focused on the prevalence and nature of affect dysregulation in these disorders.

Methods

BPD and SoD diagnoses were confirmed or ruled out in 472 psychiatric inpatients using two clinical interviews: the CIDI (Composite International Diagnostic Interview section C for somatoform disorders) and the BPDSI (Borderline Personality Disorder Severity Index). Affect dysregulation was measured using two self-reports: the SIDES-rev-NL (Structured Interview for Disorders of Extreme Stress Not Otherwise Specified, Revised) and the BVAQ (Bermond Vorst Alexithymia Questionnaire).

Results

BPD was associated with under-regulation of affect, and SoD was associated with over-regulation of affect. However, one in five patients with BPD also reported substantial over-regulation, and one in six patients with SoD reported clinically significant under-regulation, and the comorbid BPD & SoD group reported more frequently both over- and under-regulation than patients diagnosed with BPD or SoD alone or those with other psychiatric disorders.

Conclusion

Three qualitatively different forms of affect dysregulation were identified: under-regulation -, over-regulation of affect and combined under- and over-regulation of affect

INTRODUCTION

Affect or emotion dysregulation is considered a core component in borderline personality disorder (BPD; Berlin, Rolls, & Iversen, 2005; Donegan, et al., 2003; Ebner-Priemer, et al., 2005; Harned, Banawan, & Lynch, 2006; McMain, Korman, & Dimeff, 2001; Silbersweig et al., 2007; Zittel Conklin, and Westen, 2005) and somatoform disorder (SoD; Burba et al., 2006; Kooiman, Bolk, Brand, Trijsburg, & Rooijmans, 2000; Waller & Scheidt, 2004, 2006). Some authors even consider BPD (Linehan, 1993) and SoD (Waller & Scheidt, 2004, 2006) to be primarily disorders of affect dysregulation.

However, affect dysregulation has been defined in two distinct ways. In BPD studies addressing affect dysregulation the focus was mainly on a deficiency in the capacity to modulate affect such that persons become over-aroused and emotions become uncontrolled, expressed in intense and unmodified forms, and overwhelm reasoning and behavioral self-regulation (Koeningberg et al., 2002; Zittel Conklin, & Westen, 2005; Zittel Conklin, Bradley, & Westen, 2006). In the SoD literature, affect dysregulation has been referred to as involving: (1) emotional numbing and inhibition of emotion awareness; (2) impairments in insight into emotions; (3) difficulty verbalizing emotions; and (4) difficulty analyzing emotions; also known as alexithymia (Waller & Scheidt, 2004, 2006).

In an attempt to clarify the concept of affect dysregulation, Van Dijke (2008), in line with Fonagy, Gergely, Jurist, & Target (2002), and Paivio and Laurent (2001), proposed that affect dysregulation may take two forms: "under-regulation" as observed in states of unmodulated emotional distress, and "over-regulation" as observed with alexithymia. Under-regulation refers to impairment in modulation of affect (i.e., maintaining mid-range rather than extremely high or low levels of affective intensity) and in recovery from extreme states of affective intensity. Over-regulation refers to suppression or repression of affective awareness or expression. Although the process of refining the concept of affect dysregulation is considered 'work-in-progress,' by distinguishing the two forms it is proposed that there may be two different mechanisms that can occur separately or potentially together.

Two studies have provided quantitative descriptions of affect dysregulation in BPD (Zittel Conklin, Bradley, & Westen, 2006; Yen, Zlotnick, & Costello, 2002). Using the Affect Regulation and Experience Q-sort-Questionnaire Version to assess affect dysregulation, Zittel, Conklin, and colleagues found that BPD patients are characterized by both negative affect and affect dysregulation, which appear to be distinct constructs. Using the Affect Intensity Measure and Affect Control Scale to assess dimensions of affect regulation, Yen and colleagues concluded that persons with BPD traits experience emotions more intensely and have greater difficulty in controlling their affective responses than do other individuals. The findings of both studies are consistent with the hypothesis that BPD involves under-regulation of emotions; however, neither study investigated the possibility of over-regulation of affect in BPD. Although under-regulation of affect (i.e., failure to modulate intense emotion states)

has been emphasized in clinical (Linehan, 1993) and scientific (Johnson, Hurley, Benkelfat, Herpertz, & Taber 2003; Silbersweig et al., 2007) studies of BPD, evidence consistent with the possibility of problems with over-regulation also has been reported in studies of BPD (e.g., dissociation, Johnson et al., 2003; emotional numbing and associated substance use problems, Perry & Herman, 1993). A study of adult female psychiatric patients with BPD found that they and their family members had higher levels of alexithymia on the Toronto Alexithymia Scale-20 (TAS-20; Bagby, Parker, & Taylor, 1994) than did non-clinical controls and their family members (Guttman & Laporte, 2002). No other studies that examined alexithymia and BPD could be located.

The results from studies on affect dysregulation in SoD patients are inconclusive. Some found evidence of a relationship between affect dysregulation (in the form of alexithymia on the TAS-20) and SoD (Burba et al., 2006; Kooiman, Bolk, Brand, Trijsburg, & Rooijmans, 2000; Waller & Scheidt, 2004, 2006), while others studies did not find alexithymia and SoD or somatization to be related (Bankier, Aigner, & Bach, 2001; Cohen, Auld, & Brooker, 1994; Duddu, Isaac, & Chaturvedi, 2003).

Although both BPD and SoD have been considered to be disorders of affect regulation, to our knowledge, no empirical studies that systematically assess the presence of both forms of affect dysregulation in BPD or SoD appear in the literature.

Therefore, in this study both under-regulation and over-regulation of affect were assessed in patients who were diagnosed either with BPD, SoD, comorbid BPD+SoD, or other psychiatric disorders (psychiatric comparison group, PC). If BPD and SoD are disorders of affect dysregulation, it was hypothesized that all participants diagnosed with BPD should report clinical levels of under-regulation, and all participants with SoD should report clinical levels of over-regulation of affect. For patients diagnosed with comorbid BPD and SoD it was hypothesized that they will report clinical levels of *both* under-regulation and over-regulation, that is: being over-aroused accompanied by inhibited emotion related cognitions and inhibited emotion related cognitive functions (Bermond, Moormann, Albach, & Van Dijke, 2008). For the psychiatric comparison group it was hypothesized that affect dysregulation should be of lesser severity in both under- and over-regulation than for the patients with BPD or SoD or both.

METHODS

Participants and procedure

Participants were 472 consecutive admissions to two adult inpatient psychiatric treatment centers, Eikenboom Center for Psychosomatic Medicine, Altrecht Utrecht (N = 117) and De Waard, Centre for Personality Disorders, Delta Psychiatric Center, Rotterdam (N = 355) who

participated in the multi-center project "Clinical Assessment of Trauma-Related Self and Affect Dysregulation" (Van Dijke, 2008).

Next to intake according to the DSM-IV criteria, diagnosis of BPD and SoD (i.e., somatization disorder, undifferentiated somatoform disorder, severe conversion and pain disorder) were confirmed by clinical interviewers (e.g. general health psychologists and master students in clinical psychology who were trained and supervised by AvD, certified clinical psychologist/ psychotherapist). The diagnosis of SoD additionally was confirmed by a psychiatrist with somatic experience, a specialist in internal medicine, or a general practitioner with psychiatric experience. Where possible, general practice and former hospital records were obtained (with patient's consent) and studied by the interviewer in addition to using the results of the structured interviews in order to ascertain diagnoses. All participants had a well-documented history of somatic and/or psychiatric symptoms. All had received previous inpatient or outpatient treatment at psychiatric or somatic hospitals and were referred for specialized treatment.

All patients in the Eikenboom group met criteria for SoD and 16 also met criteria for BPD. In the De Waard group, 120 patients met criteria for BPD only, 113 met criteria for both BPD and SoD, 58 met criteria for SoD only, and 64 did not meet criteria for BPD or SoD and were included as a psychiatric comparison group. Table 1 presents the demographic characteristics of the four study groups and the total sample. No significant effects were found for sex, and level of education on the dependent variables.

This study was approved by the local ethics committee. After complete description of the study and procedure, subjects provided written informed consent to participate, according to the Declaration of Helsinki.

Table 1 Demographic Characteristics of the Study Groups and the Total Sample

	BPD	SoD	BPD+SoD	PC	Total Sample
N =	120	159	129	64	472
Male	40	47	30	28	145
Female	80	112	99	36	327
Age M (SD)	29.9 (8.8)	38.3 (10.5)	33.6 (9.1)	36.8 (9.9)	34.7 (10.1)
Social N	30.8 %	45.3 %	40.3 %	28.1%	37.9%
T	60.8	41.5	47.3	56.3	50.0
S	8.3	13.2	12.4	15.6	12.1
Educ L	24.2 %	22.6 %	27.1 %	23.4%	24.4%
M	35.8	45.9	37.2	46.9	41.1
H	40	31.4	35.7	29.7	34.5

Note: BPD, borderline personality disorder; SoD, somatoform disorder; BPD+SoD, borderline personality disorder and somatoform disorder; PC, psychiatric coomparison group; Social, primary relationship status; N, no primary partner; T, living together; S, separated by death or divorce; Educ, highest level of education attained; L, primary and low-level secondary education; M, middle level secondary education; H, high-level secondary education.

Measures

The CIDI (Composite International Diagnostic Interview section C; World Health Organization, WHO, 1990; Dutch version Smitten, Smeets, & Van den Brink1998) is a comprehensive, standardized instrument for assessing mental disorders according to the definitions and diagnostic criteria of DSM-IV and ICD-10. The CIDI has been shown to have good reliability and validity (Andrews, & Peters, 1998). The BPDSI (Borderline Personality Disorder Severity Index; Weaver & Clum, 1993; Dutch version IV, Arntz, 1999) is a semi-structured interview that contains nine sections (abandonment, relationships, self-image, impulsivity, parasuicide, affect, emptiness, anger, and dissociation and paranoia) corresponding to the symptom clusters of BPD. Each section contains items asking about events, for example, "Did you, during the last three months, ever become desperate when you thought that someone you cared for was going to leave you?" The items are scored by the interviewer using a 10-point scale, indicating how often the event happened during the last three months. An average score was calculated for each section, total scores were calculated by summing the section scores. The BPDSI has been shown to have good validity and reliability (Arntz et al., 2003); for inclusion a cut-off score of 20 was used (personal communication Arntz, October 2003).

In order to assess 'under-regulation of affect', each subject completed the Dutch self-report version of the *Structured Interview for Disorders of Extreme Stress Not Otherwise Specified, Revised* (SIDES-rev; Ford & Kidd, 1998), an adaptation of the interview which provides a sub-scale for dysregulated affect (Ford & Kidd, 1998; Dutch translation Van Dijke & Van der Hart, 2002). The SIDES-rev was translated into Dutch and retranslated by a near-native speaker. The SIDES self-report version has not been validated in a BPD or SoD population; therefore, we performed reliability analysis and found that the affect dysregulation sub-scale was reliable in this sample (Cronbach's $\alpha = .75$). The criterion for presence of pathological under-regulation of affect was adopted from the SIDES scoring manual (Ford & Kidd, 1998; from criterion I.a. "affect dysregulation:" 2 out of 3 items ≥ 2). The items include: (1) often getting "quite upset over daily matters, (2) being unable to get over the upset for hours or not being able to stop thinking about it, and (3) having to "stop everything to calm down and it took all your energy" or "getting drunk, using drugs or harming yourself" to cope with emotional distress. Thus, the measure addresses the core components of under-regulation of affect, i.e., frequent/intense distress, inability to modulate or recover from distress, and use of self-defeating coping to deal with distress.

In order to assess 'over-regulation of affect', each subject completed the *Bermond Vorst Alexithymia Questionnaire* (BVAQ; Vorst & Bermond, 2001), which is a Dutch forty-item questionnaire with good psychometric qualities (Vorst & Bermond, 2001), encapsulating two distinct second order factor groupings: cognitive dimensions (diminished ability to verbalize, identify, and analyze emotions) and affective dimensions (diminished ability to emotionalize and fantasize). High scores represent stronger alexithymic tendencies. The reliability for the total scale and its subscales is good and varies between .75 and .85 (Vorst

& Bermond, 2001). A reliability analysis was performed for the whole sample and the BVAQ proved to be reliable for our purposes (Cronbach's α = .88). The cognitive factor of the BVAQ was used to assess over-regulation in order to enable comparison with previous studies (Waller & Scheidt, 2006, 2004). The cognitive factor of the BVAQ is highly correlated with the Toronto Alexithymia Scale (TAS-20; Bagby, Parker, & Taylor, 1994; r = .80). The cut off score for pathological alexithymia/ over-regulation of affect was adopted from the TAS-20 study (Taylor, Bagby, & Parker, 1997) and applied to the BVAQ cognitive factor by Vorst (personal communication, September 2002).

Statistical Analyses

All statistical analyses were performed using SPSS, version 16 (SPSS Chicago). Associations between under-regulated and over-regulated forms of affect dysregulation (SIDES-rev I.a.; BVAQ-cognitive factor) were explored using Pearson correlations (two-tailed). Group means for the continuous affect dysregulation scores (under-regulation and over-regulation) were compared using multivariate analyses of variance (MANOVAs) with diagnosis as dependent variable. Logistic regression analyses with contrasts: PC groups versus all others, BPD versus SoD, BPD versus BPD+SOD and SoD versus BPD+SoD were conducted with membership in each diagnostic group as the dependent variable and under-regulation and over-regulation of affect scores as independent variables, in order to determine the relative strength of the association between affect dysregulation with diagnostic subgroup membership. Finally, cross tabulations with Chi-square tests were used to determine whether the distinct forms of affect dysregulation were represented differently among all diagnostic groups. Standard residuals are a way of contrast testing. Standard residual values less than -2 or greater than 2 are statistically important. A negative value denoted "less frequent than expected"; a positive value denoted "more frequent than expected" compared to all other groups.

RESULTS

When considering the sample as a whole, under-regulation and over-regulation of affect were weakly related (r = .11, p < .017). The correlations within each sub-group ranged from .02 for BPD, to .04 for BPD+SoD, to .09 for SoD, and .05 for PC and all were not significant [p = .27 - .80].

MANOVA was conducted to explore group differences in affect dysregulation. There was a statistically significant difference between all diagnostic groups: F (6, 930)=14.55, p<.001; Wilks' Lambda= .84; partial eta squared=.09. When the results for the independent variables were considered separately, between group differences were found for affect dysregulation, with a large effect size for under-regulation of affect (over-regulation of affect

F (3, 465) = 4.9; partial eta-squared = .03; under-regulation of affect F (3, 465) = 26.26; partial eta-squared = .14).

Table 2 displays the means of the continuous scores for affect dysregulation for the BPD, SoD, BPD+SoD, and psychiatric control groups. BPD participants (and especially those diagnosed with both BPD+SoD) were most likely to report both and more under-regulation and over-regulation of affect. Figure 1 shows direction of differences for over-regulation and under-regulation of affect separately for the study groups.

Table 2 Affect Dysregulation Means and Continuous Scores for groups

	Group	**N**	Under-regulation of affect	Over-regulation of affect
Mean (SD)	BPD	119	8.29 (1.84)	77.06 (17.89)
	SoD	159	6.64 (2.02)	72.63 (17.54)
	BPD+SoD	129	8.44 (1.83)	79.26 (17.90)
	PC	63	7.19 (2.30)	70.70 (19.55)

Note: BPD, borderline personality disorder; SoD, somatoform disorder; BPD+SoD, borderline personality disorder and somatoform disorder; PC, psychiatric comparison group.

Regression analyses were performed using contrast testing between groups. The results are presented in Table 3. The results present 'profiles' for each disorder suggested using contrasting that PC was *inversely* associated with over-regulation of affect. BPD was associated with under-regulation of affect and comorbid BPD and SoD was associated with both under-regulation and over-regulation of affect. For all contrasts, the inclusion of the two independent variables improved the fit of the model significantly except for BPD versus BPD+SoD (PC versus all others: $\chi^2 = 6.89$, $df = 2$, $p < 0.03$; BPD versus SoD: $\chi^2 = 47.80$, $df = 2$, $p < 0.000$; BPD versus BPD+SoD: $\chi^2 = 1.35$, $df = 2$, $p < 0.51$; SoD versus BPD+SoD: $\chi^2 = 62.89$, $df = 2$, $p = .000$). The Hosmer-Lemeshow test revealed that for all contrasts the model fits the data well (PC versus all others: $\chi^2 = 6.43$, $df = 8$, $p = 0.60$; BPD versus SoD: $\chi^2 = 13.07$, $df = 8$, $p = 0.11$; BPD versus BPD+SoD: $\chi^2 = 6.48$, $df = 8$, $p = 0.59$; SoD versus BPD+SoD: $\chi^2 = 12.40$, $df = 8$, $p = 0.13$).

Using the described cut-off scores for clinical-level affect dysregulation, 28.2% of the total sample reported clinically significant high levels of under- and over- regulation, 22% reported clinically significant high levels of under-regulation only, 19.3% reported clinically significant high levels of over-regulation only, and 30.5% reported non-clinical levels of both under- and over-regulation. Figure 2 presents results concerning the presence of affect dysregulation for the BPD, SoD, BPD+SoD, and the psychiatric comparison groups. Significant differences between all groups were found ($\chi^2 = 67.59$, df = 9, $p < .001$). The SoD group

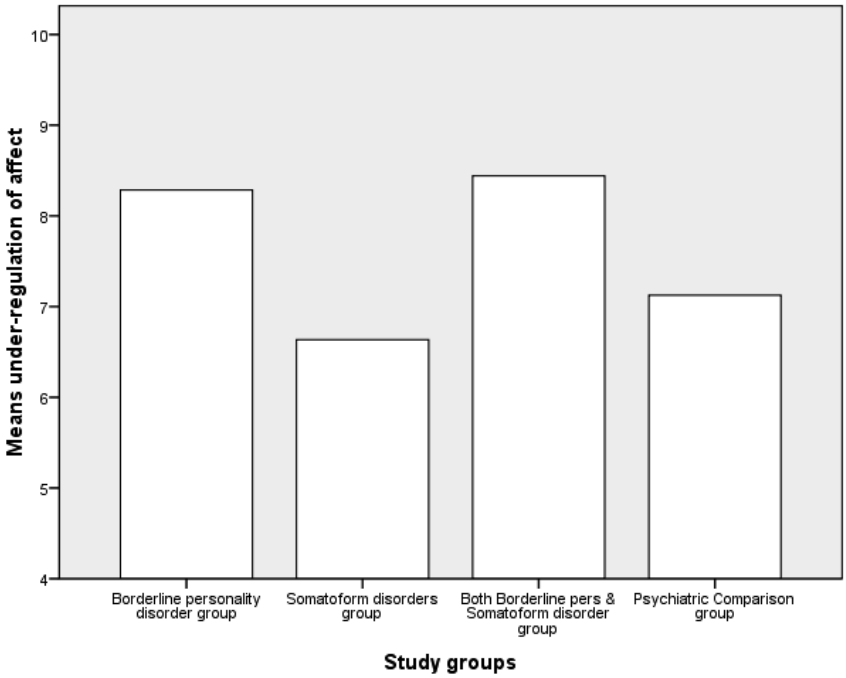


Figure 1a Group differences for under-regulation of affect

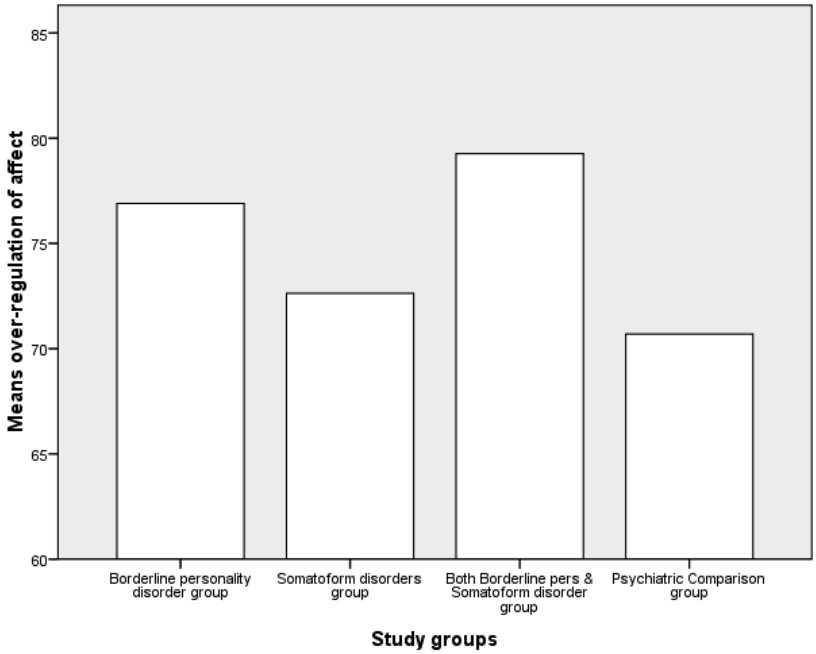


Figure 1b Group differences for over-regulation of affect

Table 3 Regression Analyses using contrast testing for over-regulation and under-regulation of affect.

	Odds Ratio	95.0 % C.I. For Odds Ratio	
		Lower	Upper
PC versus all others			
Over-regulation of affect	.99*(-)	.97	1.00
Under-regulation of affect	.91 (-)	.80	1.03
BPD versus SoD			
Over-regulation of affect	1.01	.99	1.02
Under-regulation of affect	1.55***	1.34	1.79
BPD versus BPD+SoD			
Over-regulation of affect	.99	.98	1.01
Under-regulation of affect	.96	.83	1.10
SoD versus BPD+SoD			
Over-regulation of affect	.98* (-)	.97	1.00
Under-regulation of affect	.62*** (-)	.54	.72

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; (-) inversely related; BPD, borderline personality disorder; SoD, somatoform disorder; BPD+SoD, borderline personality disorder and somatoform disorder; PC, psychiatric comparison group.

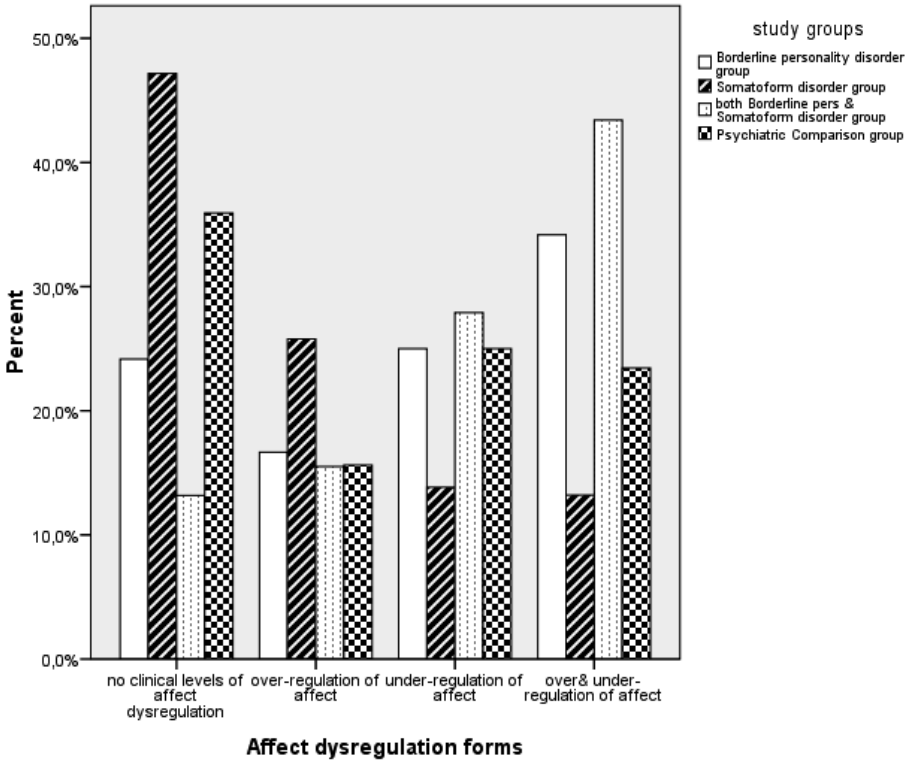


Figure 2 Distribution of study groups for clinical levels of under-regulation and over-regulation of affect

significantly more frequently reported non-clinical levels of affect dysregulation (standard residual value = 3.8) and less frequently reported clinical levels of under-regulation (standard residual value = -2.2) or both under-regulation and over-regulation (standard residual value = -3.6) than the other groups. Participants diagnosed with comorbid BPD and SoD significantly less frequently reported non-clinical levels of affect dysregulation (standard residual value = -3.6) and more frequently reported clinical levels of both under-regulation and over-regulation of affect (standard residual value = 3.3) than the other groups.

DISCUSSION

Although all patients reported some symptoms of affect dysregulation, clinical levels of affect dysregulation do not appear to be present in *all* BPD or SoD patients. Moreover, under-regulation of affect was not exclusively present in BPD and over-regulation was not exclusively present in SoD patients. The results suggest that while BPD and SoD often involve affect dysregulation (Linehan, 1993; Waller & Scheidt, 2004, 2006), there is a *spectrum* of both under-regulation and over-regulation of affect present in patients diagnosed with BPD and/or SoD. Still, BPD was associated with a greater likelihood of clinical and higher levels of affect dysregulation than SoD. In line with previous studies and consistent with study hypotheses, affect dysregulation, specifically under-regulation of affect, appears to be an important component of borderline personality pathology (Koeningsberg et al., 2002; Linehan 1993; McMain et al., 2001; Zittel Conklin, & Westen, 2005) but is not present in every patient.

Also consistent with study hypotheses, patients with BPD+SoD reported both significantly higher levels of under-regulation of affect and reported more frequently clinical levels of combined over- and under-regulation than the other groups. SoD was not consistently associated with reports of clinical levels of under- or over-regulation, except when comorbid with BPD. However, when SoD occurred without BPD, under-regulation was particularly uncommon and clinical levels of over-regulation were reported more often than for any of the other diagnostic groups (including BPD+SoD). Thus, there is partial support for the study hypothesis that SoD would be particularly associated with over-regulation. This finding is consistent with prior research and clinical observations about alexithymia in SoD (Waller & Scheidt, 2006, 2004), and further suggests that only a sub-set of SoD patients experience clinical levels of over-regulation of affect.

This study provided evidence that two qualitatively different forms of dysfunctional affect regulation do exist. Over-regulation and under-regulation of affect proved to be related yet were largely distinct. Fewer than one in three patients reported experiencing both under- and over-regulation, suggesting that this combination of affect dysregulation does occur but is not typical in patients with BPD or SoD. These findings are in line with those of Paivio and

Laurent (2001), who observed two forms of dysfunctional affect regulation in their patients when working with emotions in psychotherapy.

Our findings extend this work by suggesting that there may be a third form: combined over- and under-regulation of affect and that under- and over-regulation are most likely to co-occur among patients with BPD although only in a sub-set of these patients: particularly those with comorbid SoD. Approaches to affect regulation have been developed for patients with severe psychiatric disorders (Wolfsdorf & Zlotnick, 2001; Ford & Russo, 2006), and several psychotherapy models that have shown evidence of efficacy over one- to five-year treatment periods with patients diagnosed with BPD incorporate emotion regulation interventions designed to address both under- and over-regulation. Dialectical Behavior Therapy teaches skills for mindfulness in order to facilitate emotion awareness, distress tolerance and emotion regulation in order to enhance the modulation of extreme emotion states (Linehan et al., 2006). Transference Focused Psychotherapy (Levy et al., 2006) assists patients in using the patient-therapist relationship and transferential (re)enactments in order to recognize, modulate, and develop new relational schemas with regard to states of emotional emptiness as well as distress. Mentalization Based Treatment (Bateman & Fonagy, 2008) similarly focuses on the patient-therapist relationship to assist patients in becoming aware of their moment-to-moment state of mind (including enhanced emotion awareness) and collaboratively developing alternative ways of understanding themselves, others, and their relationships (which can be considered examples of increasing the capacity for emotion modulation). The present findings suggest that treatments such as these which address over- as well as under-regulation with patients diagnosed with BPD may particularly warrant testing when SoD or clinically significant somatoform symptoms also are present. Also, for BPD patients, especially those with comorbid SoD, who report 'emotional blindness' addressing the different facets of over-regulation (e.g. difficulty differentiating emotions, difficulty analyzing emotions and difficulty verbalizing emotions) by means of emotion recognition training (Ekman, 2003) or sensory motor therapy (Ogden, Minton, and Pain, 2006) could also contribute to the process of emotional awareness and emotional growth.

Clinically, these results indicate that there are distinct sub-groups with different types and degrees of affect dysregulation within the broad diagnostic cohorts defined by BPD and SoD and their combination. Although under-regulation was most associated with BPD and over-regulation with SoD, (a) one in five patients with BPD also reported substantial over-regulation, and one in six patients with SoD reported clinically significant under-regulation, and (b) under-regulation was most severe when BPD occurred in combination with SoD (almost one in four patients with SoD reported clinically significant under-regulation when BPD was also present). Therefore, patients with BPD should be assessed for over-regulation, particularly when SoD is comorbid. Similarly, patients with SoD should be assessed for under-regulation, particularly when BPD is comorbid.

We found that patients with SoD reported little affect dysregulation and if so, as expected, they tended to report over-regulation of affect unless BPD was comorbid. SoD patients tend to attribute burden to physical complaints as opposed to psychological distress. Moreover, in order to self-report symptoms of affect dysregulation, patients must be aware of psychological burden and be somewhat "psychologically minded." Patients with SoD are often described as bodily focused; they show little psychological mindedness, and their cognitive style has been described as "operative thinking" (Marty & M'Uzan; cited in Clayton, 2004).

Limitations

This study took place in a clinical environment (as opposed to a laboratory or an academic environment). Due to limitations considering the burden participants could be taken upon complementary clinical interviews e.g. Kernberg's structural interview for BPD (1984) or a structured alexithymia interview (TSIA; Bagby, Taylor, Parker, & Dickens, 2006), or the interview for complex PTSD/ DESNOS (SIDES; Pelcovitz,, Van der Kolk, Roth, Mandel, Kaplan, & Resick. (1997) had to be removed. The data were collected during an incorporated clinical assessment procedure (Van Dijke, 2008) in a "treatment-as-usual" program for patients with persistent BPD or SoD. The results served two goals: to help direct clinical diagnosis and therapy and to provide empirical data for long-term research projects.

This study explored the relatively new research area of affect regulation and dysregulation. We attempted to quantify clinical observations and theoretical aspects of affect dysregulation using empirical data. No standard instrument that assesses both under- and over-regulation of affect was available, therefore, independent instruments were used to assess each form of affect dysregulation. Affect dysregulation was considered to be different from affective instability: mood swings between neutral-anxious or neutral-angry or neutral-depressive.

Self-report measures were used to assess affect dysregulation. The severity of the psychopathology could have interfered with the validity of the self-assessment. This might be especially true for over-regulation of affect, because vague or diminished affective experience might be more difficult to report. This could a particular problem for patients with SoD patients, because they tend to attribute burden to physical complaints as opposed to psychological distress. Clinical observations or (semi) structured interviews that assess affect dysregulation could provide complementary information.

Future Directions

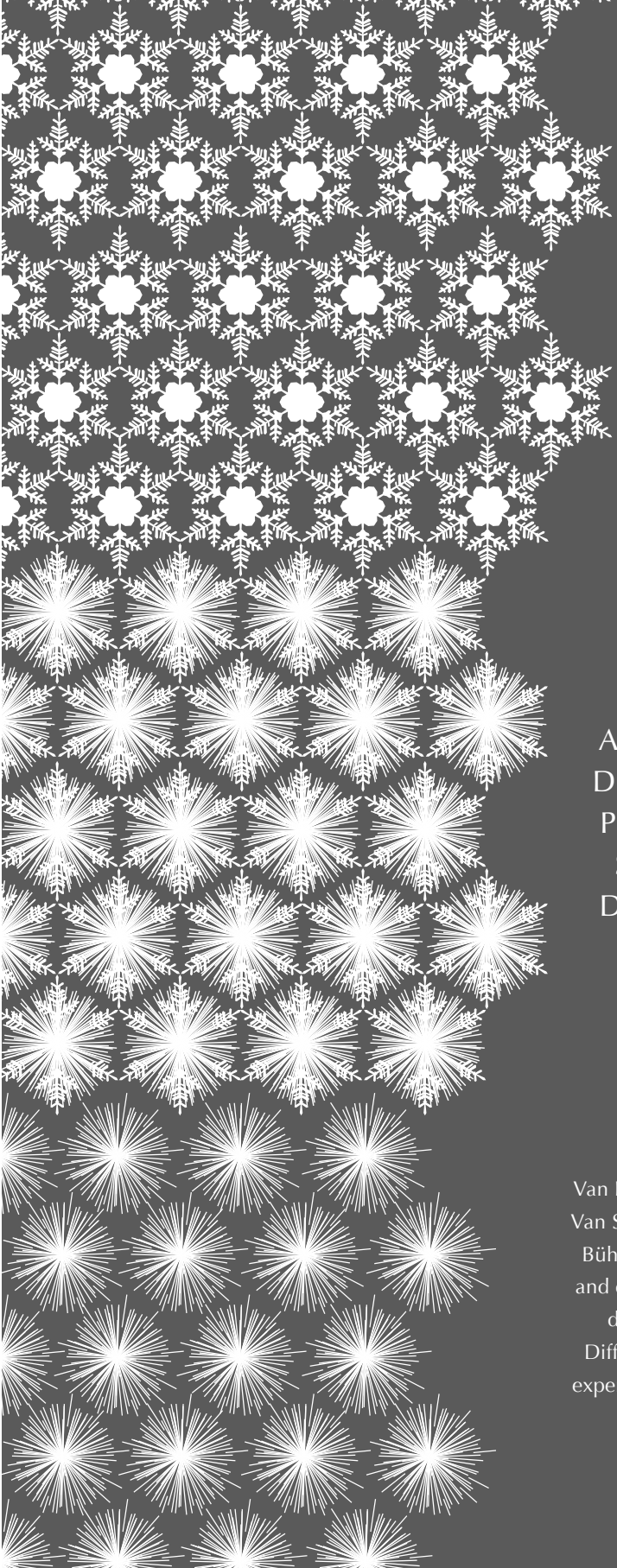
To overcome the limitations of using self-reports and two different measures to assess under-regulation and over-regulation of affect, one measure encompassing features of both forms of affect dysregulation should provide additional information. Moreover, the results from this study call for the development of a structured interview addressing affect dysregulation and associated phenomena. Various hypotheses about the etiology of affect dysregulation and associations with other phenomena have been described. Affect dysregulation has been

associated with psychological trauma and complex posttraumatic stress disorder (CPTSD) or disorders of extreme stress not otherwise specified (DESNOS) (Herman, 1992; McLean, Toner, Jackson, Desrocher, & Stuckless, 2006; Pelcovitz, Van der Kolk, Roth, Mandel, & Resick, 1997; Roth, Newman, Pelcovitz, Van der Kolk, & Mandel, 1997; Van der Kolk et al., 1996). Although emotional numbing is a hallmark symptom of PTSD (Litz, Kaloupek, Orsillo, & Weathers, 2000), most conceptual models of PTSD and CPTSD emphasize under-regulation as the primary form of affect dysregulation. Our findings are consistent with prior calls for more systematic attention to over-regulation in PTSD and CPTSD research, assessment, and treatment (Krystal et al., 2000). The interrelationships and characteristics of under- and over-regulation of affect in the traumatic stress disorders remain to be explored.

The ability to experience emotions while maintaining a sense of agency and mastery facilitates reflective function, and has been associated with affect- and self-regulation (Fonagy, Gergely, Jurist, & Target, 2002). Because some BPD and SoD patients experience significant difficulty with affect regulation, including a reduced ability to identify and verbalize feelings, it is important that future studies assess whether these impairments interfere with their reflective awareness abilities and with their broader information processing (Ford, 2005), social cognition (Lynch et al., 2006), and competencies critical to sociovocational functioning and independent living. Consistent with this possibility, BPD patients have been found to have altered brain development and function, specifically in the orbitofrontal cortex area that is associated with the processing of emotionally-valenced information (Berlin, Rolls, & Iversen, 2005; Donegan et al., 2003; Schore, 2001).

CONCLUSION

By differentiating affect dysregulation into under-regulation and over-regulation of affect, this study revealed three qualitatively different forms of affect dysregulation in patients with BPD and SoD: under-regulation, over-regulation and combined under- and over-regulation of affect. The results of this study suggest that considering BPD and SoD as disorders of affect regulation might be an oversimplification. Studying affect dysregulation in terms of under- and over-regulation can provide information about the mechanisms of dysregulation in these and other diagnostic cohorts of psychiatric patients. Our findings are consistent with treatment models that emphasize affect identification and modulation for patients diagnosed with BPD and facilitating emotional experiencing in patients with SoD.



Chapter three

Affect Dysregulation and Dissociation in Borderline Personality Disorder and Somatoform Disorder: Differentiating Inhibitory and Excitatory Experiencing States

Van Dijke, A.,Van der Hart, O., Ford, J.D., Van Son, M.J.M., Van der Heijden, P.G.M., Bühring, M. (2010). Affect dysregulation and dissociation in borderline personality disorder and somatoform disorder: Differentiating inhibitory and excitatory experiencing states. *Journal of Trauma and Dissociation, 11*, 424-443.

ABSTRACT

Introduction

Despite apparent similarities little is known about how dysfunctional affect regulation and dissociation interrelate. Therefor, in this study both under-regulation and over-regulation of affect and positive and negative somatoform and psychoform dissociative experiences were assessed in borderline personality disorder (BPD) and somatoform disorder (SoD).

Method

BPD and SoD diagnoses were confirmed or ruled out in 472 psychiatric inpatients using clinical interviews. Two forms of affect dysregulation and somatoform and psychoform dissociation were measured using self reports. Positive and negative dissociative symptoms were identified using expert opinions.

Results

Although both BPD and SoD can involve dissociation, there is a wide range of intensityof both somatoform and psychoform dissociative phenomena in patients with these diagnoses. SoD patients reported more often low levels of dissociative experiences and reported fewer psychoform (with or without somatoform) dissociative experiences than other groups. Compared to the other groups, patients with both BPD and SoD reported more psychoform (with or without somatoform) dissociative experiences. Evidence was found for the existence of three qualitatively different forms of experiencing states: inhibitory experiencing states (over-regulation of affect and negative psychoform dissociation), excitatory experiencing states (under-regulation of affect and positive psychoform dissociation), and combination of inhibitory and excitatory experiencing states commonly occurring in comorbid BPD+SoD.

Conclusion

Distinguishing inhibitory versus excitatory states of experiencing may help to clarify differences in dissociation and affect dysregulation between and within BPD and SoD patients.

INTRODUCTION

Despite apparent similarities between affect dysregulation and dissociation, surprisingly little is known about the specific interrelations between the two psychopathological phenomena (e.g., Briere, 2006). Both affect dysregulation and dissociation encapsulate (sets of) mental states representing inhibitory and excitatory experiencing (Clayton, 2004; Nijenhuis, 2004; Van Dijke, 2008). Mental states associated with inhibited experiencing are consistent with over-regulation of affect and with the negative symptoms of dissociation, including appearing emotionally constricted, expressionless, machine-like, frozen, and an inability to establish close ties with others. Mental states associated with excitatory experiencing are consistent with under-regulation of affect and with the positive symptoms of dissociation, including feeling overwhelmed, seizures, fugue states, hyper-alertness, self-harm, impulsivity, and difficulty handling intense emotion states.

Affect dysregulation in severe psychiatric disorders has been defined in two distinct ways (e.g., Van Dijke, 2008). In the borderline personality disorder (BPD) literature, affect dysregulation refers to "under-regulation": a deficiency in the capacity to modulate excitatory states of affect such that emotions become uncontrolled, expressed in intense and unmodified forms, and overwhelm reasoning (Koeningberg et al., 2002; Zittel Conklin, & Westen, 2005; Zittel Conklin, Bradley, & Westen, 2006). In literature on somatoform disorders (SoD), affect dysregulation has been referred to as alexithymia (Waller & Scheidt, 2004, 2006), that is, an inhibition of the ability to recognize and articulate affects that can be considered a form of "over-regulation" of emotion.

Dissociation involves two parallel types of manifestations. Positive symptoms of dissociation involve intrusion symptoms, e.g., stemming from dissociative parts re-experiencing trauma. Negative symptoms of dissociation refer to apparent losses--apparent because experiences that tends not to be available to one dissociative part of the personality may actually be available to another part (Van der Hart, Nijenhuis, Steele, & Brown, 2004; Van der Hart, Nijenhuis, & Steele, 2006). In line with Janet's original research, Nijenhuis and colleagues (Nijenhuis, 2004; Nijenhuis et al., 1996, 1998) further subdivided dissociative symptoms into somatoform and psychoform dissociation. Somatoform dissociation includes negative symptoms (e.g., anesthesia) and positive symptoms (e.g., pain; Nijenhuis, 2004; Van der Hart, Van Dijke, Van Son, & Steele, 2000; Van der Hart et al., 2006). Psychoform dissociation (Nijenhuis, 1999; Van der Hart et al., 2000, 2006) also involves negative (e.g., amnesia) and positive (e.g., intrusions) symptoms. Clinically, over-regulation of affect, negative somatoform or psychoform dissociative experiences appear to reflect inhibitory experiencing, while under-regulation of affect, positive somatoform or psychoform dissociative experiences appear to reflect excitatory experiencing. However, no study has systematically assessed the relationship of affect dysregulation—including both its excitatory

(under-regulated) and inhibitory (over-regulated)—and dissociation—including its positive and negative somatoform and psychoform features.

Both the under-regulated/excitatory and over-regulated/inhibitory distinction and the psychoform-somatoform distinction are particularly relevant to the two severe psychiatric disorders that are the focus of the present study. Conceptually and clinically, excitatory or under-regulated affect and psychoform dissociation appear to be prominent in BPD. Similarly, inhibitory or over-regulated affect and somatoform dissociation appear central to the symptom features of SoD. Research suggesting that these phenomena may help to characterize the psychopathology underlying BPD and SoD, and to distinguish the two disorders, is sparse and preliminary. Therefore, we investigated the presence and relationship between inhibitory and excitatory phenomena in patients with either BPD, SoD, comorbid BPD and SoD, or other psychiatric disorders.

In reviewing the literature, three studies provided quantitative information on the relationship between affect dysregulation and dissociation in patients with borderline personality disorder (BPD). Dissociation is rarely rigorously defined in the BPD literature and not systematically explored as a contributor to the instabilities thought to underlie BPD (Şar, Akyuz, Kugu, Öztürk, & Ertem-Vehid, 2006). Bohus et al. (2000) evaluated inpatient Dialectical-Behavioral Therapy for BPD and found that when patients developed skills for distress tolerance and under-regulation of affect they reported less psychoform dissociative phenomena. Kemperman, Russ, and Shearin (1997) studied self-injurious behavior and mood regulation in BPD patients and compared BPD patients who experienced pain during self-injury with those who did not. For both groups, mood elevation and decreased dissociation followed self-injury. The ratings of psychoform dissociation were found to be higher in the non-pain group than in the pain group. Stiglmayr et al. (2001) studied the experience of tension and dissociation in female BPD patients and found a strong correlation between duration and intensity of tension and experience of dissociative features, both somatoform and psychoform. Stiglmayr and colleagues concluded that aversive tension in BPD induces stress-related dissociative features. Overall, the results of these studies suggest a relationship between under-regulation of affect and dissociative phenomena. However, neither over-regulation of affect nor differentiating negative and positive dissociative experiences have been studied in relation to each other or in relation to under-regulated affect.

Two studies have quantified the relationship between affect dysregulation and dissociation with regard to somatoform disorders. McLean, Toner, Jackson, Desrocher, and Stukless (2006) studied the relationship between affect dysregulation and dissociation in patients with reported histories of childhood sexual abuse. Their results showed that under-and over-regulation of affect were correlated with psychoform dissociation and somatization. In the DSM-IV field trial for post-traumatic stress disorder (PTSD), Van der Kolk et al. (1996) found that under-regulation of affect, somatization, and psychoform dissociation were highly interrelated. This study also suggested a relationship between affect dysregulation

and dissociation, but this relationship was not directly addressed. One study has explored the interrelatedness of over-regulation and somatoform and psychoform dissociation in a non-clinical population (Clayton, 2004). The results suggested a tentative link between somatoform dissociation and over-regulation of affect.

In the present study, it is hypothesized that under-regulation of affect will be more associated with positive dissociative phenomena and over-regulation will be more associated with negative dissociative phenomena.

BPD and SoD have been found to be associated with affect dysregulation and dissociation (Ebner-Priemer et al., 2005; Brown, Schrag, & Trimble, 2005), although this has not been done specifically in relation to the positive as well as negative features of somatoform and psychoform dissociation. In the present study, it is hypothesized that positive and negative types of somatoform dissociation will be particularly prominent in SoD, while positive and negative forms of psychoform dissociation will be particularly prominent in BPD.

Taken together, this study hypotheses suggest that BPD will primarily involve under-regulation of affect and positive psychoform dissociation, while SoD will primarily involve over-regulation of affect and negative symptoms of somatoform dissociation. These questions were addressed in a large inpatient sample diagnosed with either BPD, SoD, comorbid BPD and SoD, or other psychiatric disorders.

METHODS

Participants and procedure

Study subjects were 472 consecutive admissions to two adult inpatient psychiatric treatment centers: Eikenboom Center for Psychosomatic Medicine, Utrecht (n = 117) and De Waard, clinic for personality disorders, Delta Psychiatric Center, Rotterdam (n = 355), who participated in the multi-centre project "Clinical Assessment of Trauma-Related Self and Affect Dysregulation" (Van Dijke, 2008). Next to intake according to the DSM-IV criteria, diagnosis of BPD and SoD (i.e., somatization disorder, undifferentiated somatoform disorder, severe conversion and pain disorder) were confirmed by clinical interviewers (e.g. general health psychologists and master students in clinical psychology who were trained and supervised by AvD, certified clinical psychologist/ psychotherapist). The diagnosis of SoD additionally was confirmed by a psychiatrist with somatic expertise, a specialist in internal medicine, or a general practitioner with psychiatric experience. Where possible, general practice and former hospital records were obtained (with patient's consent) and studied by the interviewer in addition to using the results of the structured interviews in order to ascertain diagnoses. All participants had a well-documented history of somatic and/or psychiatric symptoms. All had received previous inpatient or outpatient treatment at psychiatric or somatic hospitals and were referred for specialized treatment.

All patients in the Eikenboom group met criteria for SoD and 16 also met criteria for BPD. In the De Waard group, 120 patients met criteria for BPD only, 113 met criteria for both BPD and SoD, 58 met criteria for SoD only, and 64 did not meet criteria for BPD or SoD and were included as a psychiatric comparison group. Table 1 presents the demographic characteristics of the four study groups and the total sample. No significant effects were found for sex, and level of education on the dependent variables.

This study was approved by the local ethics committee. After complete description of the study and procedure, subjects provided written informed consent to participate, according to the Declaration of Helsinki.

Table 1 *Demographic Characteristics of the Study Groups and the Total Sample*

		BPD	SoD	BPD+SoD	PC	Total Sample
N =		120	159	129	64	472
Male		40	47	30	28	145
Female		80	112	99	36	327
Age M (SD)		29.9 (8.8)	38.3 (10.5)	33.6 (9.1)	36.8 (9.9)	34.7 (10.1)
Social	N	30.8 %	45.3 %	40.3 %	28.1%	37.9%
	T	60.8	41.5	47.3	56.3	50.0
	S	8.3	13.2	12.4	15.6	12.1
Educ	L	24.2 %	22.6 %	27.1 %	23.4%	24.4%
	M	35.8	45.9	37.2	46.9	41.1
	H	40	31.4	35.7	29.7	34.5

Note: BPD, borderline personality disorder; SoD, somatoform disorder; BPD+SoD, borderline personality disorder and somatoform disorder; PC, psychiatric coomparison group; Social, primary relationship status; N, no primary partner; T, living together; S, separated by death or divorce; Educ, highest level of education attained; L, primary and low-level secondary education; M, middle level secondary education; H, high-level secondary education.

Measures

The *Composite International Diagnostic Interview* (CIDI- section C; World Health Organization, WHO, 1990; Dutch version Smitten, Smeets, & Van den Brink1998) is a comprehensive, standardized instrument for assessing mental disorders according to the definitions and diagnostic criteria of DSM-IV and ICD-10. The CIDI has been shown to have good reliability and validity (Andrews, & Peters, 1998).

The BPDSI (*Borderline Personality Disorder Severity Index*; Weaver & Clum, 1993; Dutch version IV, Arntz, 1999) is a semi-structured interview that contains nine sections (abandonment, relationships, self-image, impulsivity, parasuicide, affect, emptiness, anger, and dissociation and paranoia) corresponding to the symptom clusters of BPD. Each section contains items asking about events, for example, “Did you, during the last three months, ever become desperate when you thought that someone you cared for was going to leave you?” The items are scored by the interviewer using a 10-point scale, indicating how often the event happened during the last three months. An average score was calculated for each

section, total scores were calculated by summing the section scores. The BPDSI has been shown to have good validity and reliability (Arntz et al., 2003); for inclusion a cut-off score of 20 was used (personal communication Arntz, October 2003).

In order to assess under-regulation of affect, each subject completed the self-report version of the *Structured Interview for Disorders of Extreme Stress Not Otherwise Specified-revised* (SIDES-Rev; Ford & Kidd, 1998; Dutch version Van Dijke & Van der Hart, 2002), an adaptation of the interview consisting of items formulating the sequelae of complex trauma, which include dysregulated affect, impulses, and bodily integrity, dissociation, somatization, and fundamentally altered self-perceptions, relationships, and sustaining beliefs (Ford & Kidd, 1998; Van der Kolk, 1996). Reliability analysis proved this instrument reliable for these populations (Cronbach's $\alpha = 0.91$). The criterion for the presence of pathological under-regulation of affect was adopted from the SIDES scoring manual (Ford & Kidd, 1998; from criterium I "affect and impulse dysregulation"; a: affect dysregulation 2 out of 3 items ≥ 2).

In order to assess over-regulation of affect, participants completed the *Bermond Vorst Alexithymia Questionnaire* (BVAQ; Vorst & Bermond, 2001). The BVAQ is a Dutch forty-item questionnaire with good psychometric qualities (Vorst & Bermond, 2001), encapsulating two distinct second order factor groupings: cognitive dimensions (difficulty verbalizing, identifying, and analyzing emotions) and affective dimensions (difficulty emotionalizing and fantasizing). High scores represent stronger alexithymic tendencies: "diminished ability to …" The reliability for the total scale and its subscales is good and varies between 0.75 and 0.85 (Vorst & Bermond, 2001). Reliability analysis proved the BVAQ reliable for these populations (Cronbach's $\alpha = 0.88$). Only the cognitive factor of the BVAQ was used to assess over-regulation in order to enable comparison with previous studies (Waller & Scheidt, 2006, 2004). The cognitive factor of the BVAQ is highly correlated with the Toronto Alexithymia Scale (TAS-20; Bagby, Parker, & Taylor, 1994; $r = 0.80$). The cut-off score for pathological alexithymia/ over-regulation of affect was adopted from the TAS-20 study (Taylor, et al., 1997) and applied to the BVAQ cognitive factor by Vorst (personal communication, September 2002).

Psychoform dissociation was measured with the *Dissociative Experiences Scale* (DES; Bernstein & Putnam, 1986; Dutch version, Ensink & Van Otterloo, 1989), a 28-item self-report questionnaire that surveys the frequency of various experiences of dissociative phenomena in the daily life of the respondents. Total scores were calculated by averaging the 28 item-scores. In order to differentiate clinically significant scores of psychoform dissociation from normal dissociative experiences, a cut-off score of 35 was used for inpatients. The DES is a widely used instrument with good reliability (Cronbach's $\alpha = 0.95$, test-retest reliability 0.79-0.96) and clinical validity (Ensink & Van Otterloo, 1989; Frischholz et al., 1990).

Somatoform dissociation was measured using the *Somatoform Dissociation Questionnaire* (SDQ-20; Dutch version, Nijenhuis et al., 1996), a 20-item self-report questionnaire using 5-point Likert scales to indicate the extent to which the statements are applicable.

Total scores are the sum of the 20 item-scores and range from 20 to 100. In order to differentiate clinically significant somatoform dissociation from normal dissociative experiences, we used a cut off score of 8, based on the SDQ-5 scores. The scale has high reliability (Cronbach's $\alpha = 0.96$) and good construct validity (Nijenhuis et al., 1996, 1998).

To this date no measure is known to us that specifically assesses positive and negative dissociation. The items from the DES and SDQ-20 were evaluated by three experts in the positive and negative dissociative symptoms field (Onno van der Hart, Ellert Nijenhuis, and Annemiek van Dijke). Total positive dissociation were items DES: 7, 14, 15, 18, 22, 23, 27 and SDQ-20: 2, 4, 6, 7, 9, 10, 17. Reliability analysis proved a Cronbach's alpha of .76. Total negative dissociation were items DES: 3, 4, 5, 6, 8, 10, 11, 12, 13, 16, 17, 25, 26 and SDQ-20: 3, 5, 8, 11, 12, 13, 15, 16, 18, 19, 20. Reliability analysis proved a Cronbach's alpha of .88. Although both positive and negative symptoms generated reliable scales, we consider the research on positive and negative dissociative symptoms 'work-in-progress'.

Statistical Analyses

All statistical analyses were performed using SPSS, version 16 (SPSS Chicago). Due to non-normality of the dissociation variables, square root transformations were performed (Stevens, 2002). Associations between under-regulated and over-regulated forms of affect dysregulation (SIDES-rev; BVAQ) with positive and negative dissociation (DES; SDQ) were explored using Pearson correlations (two-tailed). Group means for the continuous dissociation scores were compared using multivariate analyses of variance (MANOVAs) with diagnosis as dependent variable. Sequential regression analyses were conducted. The following contrasts were tested: PC versus the rest, BPD versus SoD, BPD+SoD versus BPD, and BPD+SoD versus SoD, entering under-regulation and over-regulation (model 1), and model 1 plus positive and negative somatoform and psychoform scores (model 2). Finally, cross tabulations with Chi-square tests were used to determine whether the distinct forms of dissociation were represented differently among the diagnostic groups. Standard residuals are a way of contrast testing. Standard Residual Values (SRV) less than -2 or greater than 2 are statistically important. A negative value denoted "less frequent than expected"; a positive value denoted "more frequent than expected".

RESULTS

When considering the sample as a whole (BPD, SoD, BPD+SOD, & PC), under-regulation of affect was moderately to strongly related to psychoform ($r = 0.37$, $p < 0.000$) and somatoform ($r = 0.26$, $p < 0.001$) dissociation. Over-regulation was weakly related to psychoform ($r = 0.19$, $p < 0.001$) and somatoform ($r = 0.16$, $p < 0.002$) dissociation. Under-regulation and over-regulation were weakly related to each other ($r = 0.11$, $p < 0.017$). More specifically,

under-regulation was moderately to strongly related to positive psychoform ($r = 0.46$, $p < 0.001$) and negative psychoform dissociation ($r = 0.42$, $p < 0.001$). Over-regulation was weakly related to positive psychoform ($r = 0.15$, $p < 0.001$) and negative psychoform dissociation ($r = 0.15$, $p < 0.002$). Under- and over-regulation were unrelated ($p > 0.05$) to positive and negative somatoform dissociation. Table 2 shows the Pearson product moment correlations between negative and positive somatoform dissociative and psychoform dissociative phenomena, demonstrating that the positive and negative forms of both somatoform and psychoform dissociation were almost perfectly correlated (r = .82-.99) and that all forms of somatoform and psychoform dissociation were moderately interrelated across the two types of dissociation (r = .39-.52).

Table 2 *Pearson Correlations on Transformed Negative and Positive Dissociation Scores*

	Positive somatoform dissociation	Negative psychoform dissociation	Positive psychoform dissociation
Negative somatoform dissociation	0.99	0.52	0.42
Positive somatoform dissociation		0.43	0.39
Negative psychoform dissociation			0.82

Note: two-tailed Pearson correlations, all statistically significant $p < 0.001$; $N = 471$ for analyses with psychoform dissociation due to one case with missing data.

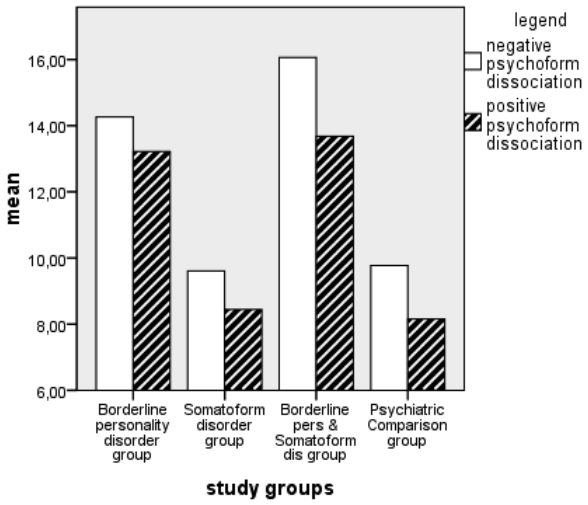


Figure 1a
Group differences for inhibitory and excitatory experiencing for psychoform dissociation

MANOVA was conducted to explore group differences in dimensions of inhibitory and excitatory experiencing (positive and negative dissociation and affect dysregulation). There was a statistically significant difference between all diagnostic groups: F (18, 1302) = 8.91; p = 0.001; Wilks' Lambda = 0.72; partial eta squared = 0.10. BPD participants (and especially those diagnosed with both BPD+SoD) were most likely to report inhibitory and excitatory states of experiencing as presented in figure 1. When the results for the independent variables were considered separately, between group differences were found for all forms of dissociation and affect dysregulation (Table 3), with large effect sizes for under-regulation of affect, and negative and positive psychoform dissociation. Table 4 displays the means of the continuous scores on the measures of positive and negative dissociation and affect dysregulation, DES, SDQ-20 and SDQ-5 for the BPD, SoD, BPD+SoD, and psychiatric comparison groups.

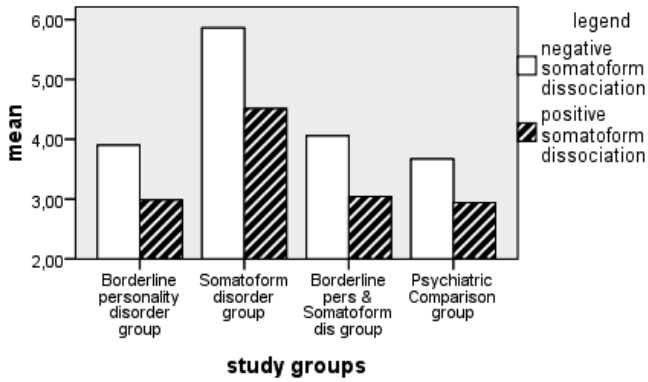


Figure 1b
Group differences for inhibitory and excitatory experiencing for somatoform dissociation

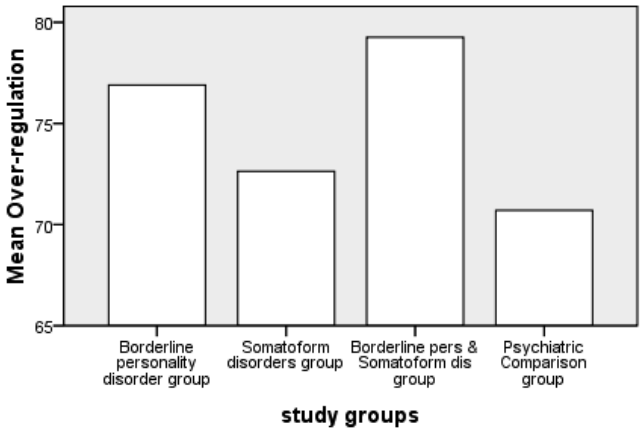


Figure 1c *Group differences for inhibitory experiencing for affect dysregulation*

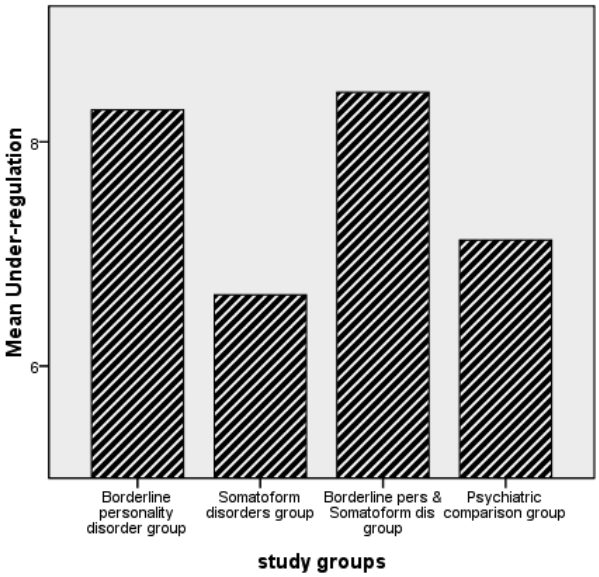


Figure 1d
Group differences for excitatory experiencing for affect dysregulation

Table 3 *Between group differences for dissociation and affect dysregulation*

	F(3, 465)	Partial eta-squared
Negative psychoform dissociation	24.3	.14
Negative somatoform dissociation	5.12	.03
Positive psychoform dissociation	33.43	.18
Positive somatoform dissociation	4.47	.03
Over-regulation of affect	4.9	.03
Under-regulation of affect	26.16	.14

Sequential regression analyses were performed using contrasts to assess the relative strength of inhibitory and excitatory experiencing phenomena with the presence of BPD, SoD, BPD+SOD, or other psychiatric disorders. The results are presented in Table 5. For all contrasts except for BPD versus BPD+SoD, the inclusion of all inhibitory and excitatory experiencing phenomena (model 2) improved the fit of the model significantly (PC↔the rest: $\chi^2 = 32.54$, $df = 6$, $p < 0.000$; BPD↔SoD: $\chi^2 = 75.78$, $df = 6$, $p < 0.000$; BPD↔BPD+SoD: $\chi^2 = 7.88$, $df = 6$, $p < 0.25$; SoD↔BPD+SoD: $\chi^2 = 96.81$, $df = 6$, $p < 0.000$).No significant differences were found for inhibitory and excitatory regulation strategies between the BPD groups and the BPD+SoD group. The Hosmer-Lemeshow test revealed that for all dependent variables model 2 fits the data well (PC↔the rest: $\chi^2 = 10.86$, $df = 8$, $p = 0.21$; BPD↔SoD: $\chi^2 = 8.72$, $df = 8$, $p = 0.37$; BPD↔BPD+SoD: $\chi^2 = 11.42$, $df = 8$, $p = 0.18$; SoD↔BPD+SoD: $\chi^2 = 17.23$, $df = 8$, $p = 0.03$).

Table 4 *Means and SD for Positive and Negative Dissociation and Affect Dysregulation and DES, SDQ-20 & SDQ-5 for study groups*

	Group	Negative psychoform dissociation	Negative somatoform dissociation	Positive psychoform dissociation	Positive somatoform dissociation	Over-regulation of affect	Under-regulation of affect	Psychoform dissociation DES	Somatoform dissociation SDQ-20	Somatoform dissociation SDQ-5
Mean (SD)	BPD N= 119	14.38 (1.16)	24.33 (9.41)	27.40 (1.54)	13.28 (8.57)	77.06 (17.89)	8.29 (1.84)	24,04 (15.71)	27,00 (8.62)	6.83 (2.68)
	SoD N= 158	7.38 (1.01)	1.37 (8.19)	13.49 (1.34)	10.32 (7.46)	72.77 (17.51)	6.64 (2.02)	10,79 (8.99)	24,82 (5.95)	6.10 (1.91)
	BPD+SoD N= 129	17.61 (1.12)	8.56 (9.04)	30.84 (1.48)	1.32 (8.23)	79.26 (17.90)	8.44 (1.83)	27,25 (14.74)	30,25 (10.11)	7.56 (3.25)
	PC N= 63	7.81 (1.60)	1.26 (5.94)	13.18 (2.12)	1.27 (11.77)	70.70 (19.55)	7.19 (2.30)	11,78 (11.37)	24,98 (8.22)	6.27 (2.86)

Note: numbers are not transformed; BPD, borderline personality disorder; SoD, somatoform disorder; BPD+SoD, borderline personality disorder and somatoform disorder; PC, psychiatric comparison group.

Table 5 *Sequential Regression Analyses for inhibitory and excitatory experiencing phenomena using contrast testing for model 2*

N=469	Odds Ratio	95.0 % C.I. For Odds Ratio	
		lower	upper
PC versus the rest			
Over-regulation of affect	.99	.97	1.00
Under-regulation of affect	1.05	.91	1.22
negative psychoform dissociation	1.02	.94	1.11
negative somatoform dissociation	*.42**	*.21*	*.86*
positive psychoform dissociation	*.87***	*.79*	*.96*
positive somatoform dissociation	*3.89***	*1.53*	*9.86*
BPD versus SoD			
Over-regulation of affect	1.01	.99	1.02
Under-regulation of affect	1.39***	1.181	1.63
negative psychoform dissociation	1.02	.95	1.10
negative somatoform dissociation	*.53**	*.29*	*.96*
positive psychoform dissociation	1.15**	1.052	1.25
positive somatoform dissociation	1.46	.56	3.77
BPD versus BPD+SoD			
Over-regulation of affect	.99	.98	1.01
Under-regulation of affect	.99	.85	1.15
negative psychoform dissociation	.93	.87	1.00
negative somatoform dissociation	.92	.56	1.49
positive psychoform dissociation	1.07	.98	1.17
positive somatoform dissociation	.97	.44	2.11
SoD versus BPD+SoD			
Over-regulation of affect	.99***	.97	1.00
Under-regulation of affect	*.71**	*.60*	*.83*
negative psychoform dissociation	*.91**	*.84*	*.98*
negative somatoform dissociation	1.74	1.00	3.03
positive psychoform dissociation	.94	.85	1.03
positive somatoform dissociation	.76	.30	1.90

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; BPD, borderline personality disorder; SoD, somatoform disorder; BPD+SoD, borderline personality disorder and somatoform disorder; PC, psychiatric comparison group, italic numbers indicate inverse relations.

Using the described cut-off scores, 9.7% of the total sample reported high levels of psychoform *and* somatoform dissociation, 16.3% reported somatoform dissociation only, 5.7% reported psychoform dissociation only, and 68.2% reported low levels of both psychoform or somatoform dissociation. Figure 2 presents the distribution of cases reporting psychoform and somatoform dissociation for the BPD, SoD, BPD+SoD, and psychiatric comparison groups. When comparing the groups significant differences were found ($\chi^2 = 57.16$, $df = 9$, $p < 0.001$). The SoD group was significantly more likely to report low levels of dissociation (standard risidual value; SRV = 2.3), less likely to report high levels of psychoform dissociation (SRV = -2.4), and less likely to report high levels of both psychoform and somatoform dissociation (SRV = -3.4) than were the BPD, BPD+SoD, and psychiatric comparison groups. Participants diagnosed with BPD+SoD were significantly less likely to report low levels of

dissociation (SRV = -2.5), and were more likely to report high levels of both psychoform and somatoform dissociation (SRV = 3.2), or high levels of psychoform dissociation only (SRV = 2.8) than were the other groups.

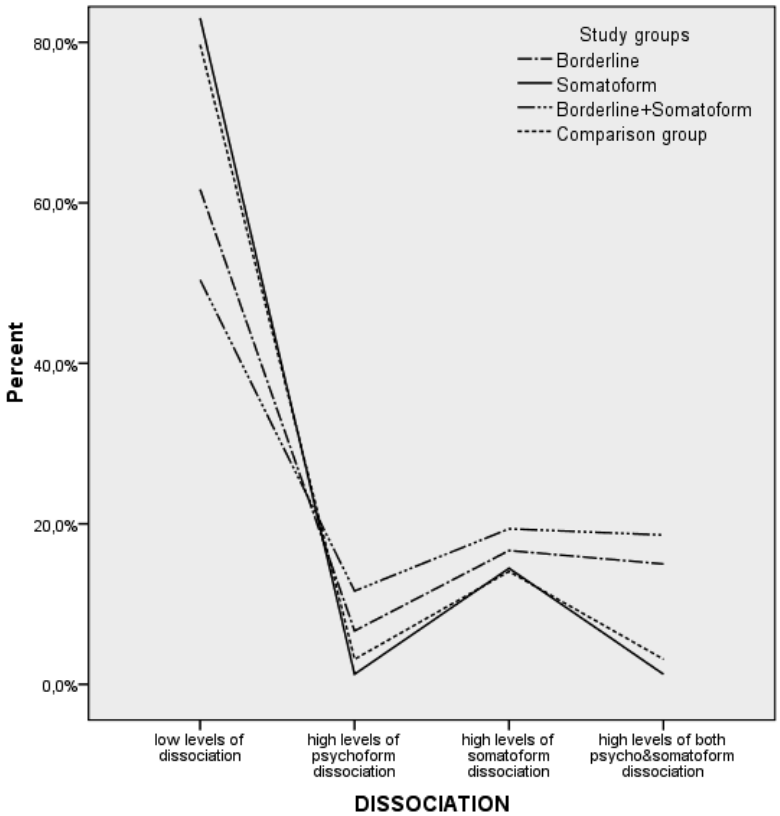


Figure 2.
Distribution of levels of psychoform and/ or somatoform dissociation for study groups

DISCUSSION

Complementary to previous studies and consistent with study hypotheses, BPD was found to involve substantial positive psychoform dissociation and under-regulation of affect (Zittel Conklin, & Westen, 2005, 2006). Thus, psychoform dissociation may play a greater role in BPD than represented in the DSM-IV's single feature of, "severe" but "transient, stress-related" dissociation linked to "paranoid ideation". While the chronicity and periodicity of dissociation were not assessed in the present study, the pathological levels of psychoform dissociation endorsed by patients with BPD suggest that psychoform dissociation may be more than transient.

For SoD, psychoform dissociation was uncommon and somatoform dissociation was more often reported, consistent with study hypotheses and prior research and clinical observations (Nijenhuis, 2004). However, it appears that only a sub-set of SoD patients, primarily those with comorbid BPD, report severe somatoform dissociation. Infrequent reports of dissociation by SoD patients may reflect under-reporting consistent with the clinical presentation of *la belle indifférence*. As SoD patients become more aware of their somatosensory and emotional experiences in psychotherapy they may become more able to report dissociative symptoms.

For comorbid BPD and SoD, psychoform *and* somatoform dissociation were frequently reported. Van Dijke and colleagues (in press) found that comorbid BPD and SoD also was associated with both over-regulation *and* under-regulation of affect. The constellation of somatoform dissociation and over-regulation of affect may be a feature of the more complex SoD-BPD comorbidity rather than a characteristic of SoD *per se*. As hypothesized, SoD in the absence of BPD was most strongly associated with negative somatoform dissociation and inversely with under-regulation of affect, suggesting that negative somatoform symptoms—and not positive somatoform symptoms, psychoform dissociation, or affect dysregulation—may be a hallmark of SoD distinct from the dysregulated states involved in BPD.

Positive somatoform dissociation best characterized psychiatric patients with neither BPD nor SoD. Physical health complaints consistent with positive somatoform dissociation are common co-occurrences in the presentation of psychiatric disorders, potentially reflecting either generalized distress or the adverse health impact associated with chronic poor mental health rather than specifically dissociative pathology.

Study findings suggest that two qualitatively different forms of psychoform and somatoform dissociation do exist (Nijenhuis et al., 2004; Van der Hart et al., 2000, 2004, 2006). Our data provide more support for the hypothesis that positive (excitatory) states of dissociation are associated with BPD, while both positive and negative (inhibitory) forms of dissociation were associated with BPD when comorbid with SoD.

Limitations

A primary limitation is that comorbid dissociative disorder and/or (complex) PTSD cannot be ruled out for the the BPD+SoD sub-group that reported both high levels of psychoform and somatoform dissociation, because interviews assessing PTSD and/or dissociative disorders were not included in order to minimize participant burden.

A second limitation was that self-report measures were used to assess affect dysregulation and dissociation. It is possible that the diminished capacity to self-reflect resulted in decreased scores on, and interrelations in, the inhibitory dimension (over-regulation and negative dissociative experiences). In particular, at the beginning of treatment patients with SoD patients are less able to self-reflect and they tend to attribute psychological burden

to physical complaints. Therefore, clinical observations or (semi) structured interviews that assess affect dysregulation and dissociation could provide complementary information.

Future Directions

Affect dysregulation and dissociation have been associated with psychological trauma and complex PTSD (Herman, 1992; McLean, Toner, Jackson, Desrocher, & Stuckless, 2006; Pelcovitz, Van der Kolk, Roth, Mandel, & Resick, 1997; Roth, Newman, Pelcovitz, Van der Kolk, & Mandel, 1997; Van der Kolk et al., 1996; Zlotnick et al., 1997). Our findings contribute to the growing body of research suggesting a need for more systematic differentiation between under-regulation and over-regulation of affect (Van Dijke, 2008) and more systematic differentiation between psychoform and somatoform dissociation (e.g., Nijenhuis et al., 2004; Van der Hart et al., 2006). The interrelations and characteristics of under-regulation and over-regulation of affect and psychoform and somatoform dissociation in traumatic stress related disorders (Scoboria, Ford, Frisman, & Lin, 2008) and DSM-IV dissociative disorders remain to be explored.

Dissociation is rarely rigorously defined in the BPD literature and not systematically explored as a contributor to the instabilities thought to underlie BPD. In the dissociative disorders literature, BPD traits in patients with severe dissociative disorders have been viewed either as a co-morbidity (Şar et al., 2006), or, alternatively, as a relatively non-specific set of instabilities that result from more, and more severe, exposure to psychological trauma or more activated dissociative symptoms (Ross, 1997). Therefore, assessing inhibitory and excitatory experiencing in relation trauma history among individuals with BPD, dissociative disorders, and PTSD, and their comorbid combinations, is a next critical next step.

CONCLUSION

We found evidence for the existence of three qualitatively different forms of dissociative dysregulation: inhibitory, excitatory, and combined inhibitory and excitatory states. Although both BPD and SoD can involve dissociation (Bohus et al., 2000; Stiglmayr et al., 2001), there is a wide range of intensity of both somatoform and psychoform dissociative phenomena in patients with these diagnoses. Over-regulation of affect and negative psychoform dissociation, commonly occurring in SoD, can be understood as inhibitory dissociative states. Under-regulation of affect and positive psychoform dissociation, commonly occurring in BPD, can be understood as excitatory dissociative states. The combination of inhibitory and excitatory dissociative states, commonly occurred in comorbid BPD+SoD. Thus, assessment of positive and negative somatoform and psychoform dissociation may have utility in characterizing clinical and phenomenological features of BPD and SoD.

Chapter four

Childhood Traumatization by Primary Caretaker and Affect Dysregulation in Patients with Borderline Personality Disorder and/or Somatoform Disorder

Van Dijke, A., Ford, J.D., Van der Hart, O., Van Son, M.J.M., Van der Heijden, P.G.M., & Bühring, M. (2011). Childhood traumatization by primary caretaker and affect dysregulation in patients with borderline personality disorder and/or somatoform disorder. *European Journal of Psychotraumatology, 2*, 5628 - DOI: 10.3402/ejpt.v2i0.5628

ABSTRACT

Introduction

Affect regulation is often compromised as a result of early life interpersonal traumatization and disruption in caregiving relationships like in situations where the caretaker is emotionally, sexually or physically abusing the child. Prior studies suggest a clear relationship between early childhood attachment-related psychological trauma and affect dysregulation.

Methods

We evaluated the relationship of retrospectively recalled childhood traumatization-by-primary-caretaker(s) (TPC) and affect dysregulation in 472 adult psychiatric patients diagnosed with borderline personality disorder (BPD), somatoform disorder (SoD), both BPD and SoD, or disorders other than BPD or SoD, using the Bermond-Vorst Alexithymia Questionnaire (BVAQ), the Dutch self-report version of the Structured Interview for Disorders of Extreme Stress (SIDES-rev-NL), the Self-Rating Inventory for Posttraumatic Stress Disorder (SRIP), and the Traumatic Experiences Checklist (TEC).

Results

Almost two-thirds of participants reported having experienced childhood TPC, ranging from approximately 50% of patients with SoD or other psychiatric disorders to more than 75% of patients with comorbid BPD+SoD. Under-regulation of affect was associated with emotional TPC and TPC occurring in developmental epoch 0-6 years old. Over-regulation of affect was associated with physical TPC.

Conclusion

Childhood trauma-by-primary-caretaker is prevalent among psychiatric patients, particularly those with BPD, and differentially associated with under- and over-regulation of affect depending on the type of traumatic exposure.

INTRODUCTION

Affect dysregulation has been defined in two distinct ways (Paivio & Laurent, 2001, Van Dijke, 2008; Van Dijke et al., 2010; Taylor, Bagby, & Parker, 1994). In the borderline personality disorder (BPD) literature, affect dysregulation refers to a deficiency in the capacity to modulate affect such that emotions become uncontrolled, expressed in intense and unmodified forms, and overwhelm reasoning (Koeningberg et al., 2002; Zittel Conklin & Westen, 2005; Zittel Conklin, Bradley, & Westen, 2006).These problems have been described as under-regulation of affect, and include extremely intense affective distress (e.g., overwhelming rage or fear) and affectively-driven behavioral disinhibition (e.g., impulsivity, aggression). Under-regulation of affect has been shown to be a common and potentially severe sequela of childhood sexual (Carey, Walker, Rossouw, Seedat, & Stein, 2008; Putnam, 2003), physical (Dodge, Lochman, Harnish, Bates, & Pettit, 1997; Ford et al., 2000), and emotional (Goldsmith & Freyd, 2005; Teicher, Samson, Polcari, & McGreenery, 2006) abuse.

In the somatoform disorder (SoD) literature, affect dysregulation has been referred to as alexithymia (Waller & Scheidt, 2006, 2004).Alexithymia, generally understood as 'no words for feelings,' encompasses: (a) difficulty identifying emotions; (b) difficulty describing emotions to others; (c) pensée opératoire; and (d) limited imaginal capacity (e.g., Sifneos, 1973). Alexithymia has also been shown to be associated with a history of childhood abuse (Bermond, Moormann, Albach, & Van Dijke, 2008; Greenberg, & Bolger, 2001; Moormann, Bermond, & Albach, 2004; Moormann, Bermond, Albach, & Van Dorp, 1997; Paivio, & Laurent, 2001). In addition to involving an inhibition of the cognitive capacity to differentiate and articulate affects, alexithymia also tends to involve a suppression or numbing of affect that may be considered a form of over-regulation of affect. Both in PTSD (Lanius et al., 2010; Lanius et al., 2011) and in SoD and BPD (Van Dijke, Ford, et al., 2010), over-regulation of affect may represent a sub-type that is associated with negative symptoms of somatoform and psychoform dissociation (e.g., Van Dijke, Van der Hart et al., 2010).

Affective disruptions, including under-regulation and over-regulation of affect, are at the heart of disturbances stemming from childhood victimization (Cook et al., 2005; Ford, 2005), especially when this involves a caretaker (Freyd, DePrince, & Gleaves, 2007; Paivio & Laurent, 2001). Adults who have experienced childhood victimization consistently are found to be at risk for problems with under-regulation of affect, but over-regulation of affect also may be a clinically important sequela of childhood interpersonal trauma. For example, Marx and Sloan (2002) found that among survivors of child sexual abuse, over-regulation and under-regulation of affect were significantly related to psychological distress. However, over-regulation (but not under-regulation) mediated the relationship between child sexual abuse status and distress, indicating that over-regulation also may be influential in the development of psychological symptoms in child sexual abuse survivors.

Childhood traumatization is known to be associated with psychiatric disorders such as BPD (Yen et al., 2002; Zanarini, Yonge, & Frankenburg, 2002) and SoD (Brown, Schrag, & Trimble, 2005; Teicher et al., 2006) and dissociative disorders (Şar, Akyuz, Kugu, Ozturk, & Ertem-Vehid, 2007, Nijenhuis, Van der Hart, Kruger, & Steele, 2004; Roelofs, Keijsers, Hoogduin, Näring, & Moene, 2002).

Although contemporary researchers consider the causal association between child abuse and psychiatric disorders to be an oversimplification (e.g., Van der Kolk, 1996), sexual, physical, and emotional abuse have been hypothesized to be important etiological contributors to BPD (Bradley et al., 2005) and SoD (Brown et al., 2005) and dissociative disorders (e.g., Sar & Ross, 2006; Roelofs, Keijsers, Hoogduin, Näring, & Moene, 2002). However, relatively little is known about how child abuse contributes to the etiology of these psychiatric disorders (Verdurmen et al., 2007). One possible factor contributing to the association of child abuse with subsequent BPD and SoD is affect dysregulation. Therefore, the present study investigated the relationship of childhood victimization and both forms of affect dysregulation in adults diagnosed with BPD, SoD, and comorbid BPD and SoD.

Childhood traumatization for which the primary caretaker was the agent has been hypothesized to have special importance in the etiology of severe psychiatric disorders (Allen, 2001). Caretaker-caused traumatic stressors are likely to occur in and contribute to result in a relational growth-inhibiting early environment in which caretakers not only play less with the infant but also evoke stress (in the case of an abusive caretaker) or fail to protect the child from post-traumatic states of enduring negative affect (Fonagy et al., 2002; Lieberman, 2007; Lieberman & Amaya-Jackson, 2005). In addition, the caretaker might provide insufficient protection against other potential abusers of the child (Lieberman, 2007). The caretaker also often is inaccessible and reacts unattuned and/or with rejection to the infants' expressions of emotions and stress. Therefore, the caretaker shows minimal or unpredictable participation in the various types of arousal regulating processes (Lyons-Ruth et al., 2006). Instead of modulating extreme levels of stimulation and arousal, the infant and caretaker tend to experience high levels of arousal episodically when abuse has occurred and/or low levels of arousal when neglect has occurred. If interactive repair from a caretaker is not available or responsive to the infant, intense negative states can persist and be experienced by the infant as unmanageable. Until these states subside, the infant must devote most or all of their available biological and affective resources to withstand this state of distress and dysregulation (Tronick & Weinberg, 1997). Thus, the combination of the psychobiological challenge posed by traumatic stressors and the absence of consistent and effective co-regulation by a responsive available caretaker might compromise the child's capacity to regulate excessive levels of high and/or low arousal negative affect; and, when this persists in early development, it may result in persistent problems with under- or over-regulation of affect in adulthood.

Although theory and research have emphasized the adverse impact of caretaker-related abuse that occurs in the earliest years of development, abuse or neglect by primary caretakers that occurs later in childhood or adolescence also may have detrimental effects. Prospective (Dodge, Pettit, Bates, & Valente, 1995) and retrospective (Teicher et al., 2006; Zinzow et al., 2009) studies of emotional, physical, and sexual abuse have found evidence of deleterious effects on functioning, mental health, and health in the aftermath of abuse in the school years and adolescence. However, studies that systematically examined the relationship between a history of exposure to traumatic stressors for which a primary caretaker is the agent *at differing developmental epochs* with psychiatric and psychosocial morbidity were not found. Therefore, in the present study, trauma by a primary caretaker is assessed in each of three developmental epochs, early childhood (ages 0-6 years old), middle childhood (ages 7-12 years old), and adolescence (ages 13-18 years old). We hypothesized that trauma by a primary caretaker would be associated with particularly severe under-regulation of affect in adults diagnosed with BPD and over-regulation of affect in adults diagnosed with SoD. We also hypothesized that these relationships would be strongest when trauma by a primary caretaker occurred during early childhood, compared to in middle-childhood or adolescence.

METHODS

Participants and procedure

Participants were 472 consecutive admissions to two adult treatment centers, Eikenboom Center for Psychosomatic Medicine, Altrecht Utrecht (N = 117) and De Waard, Centre for Personality Disorders, Delta Psychiatric Center, Rotterdam (N = 355) who participated in the multi-center project "Clinical Assessment of Trauma-Related Self and Affect Dysregulation" (Van Dijke, 2008).

According to the DSM-IV criteria (APA, 2000), diagnoses of BPD and SoD (i.e., somatization disorder, undifferentiated somatoform disorder, severe conversion and pain disorder) were confirmed by clinical interviewers (general health psychologists and master students in clinical psychology who were trained and supervised by the first author, a certified clinical psychologist/clinical neuropsychologist). The diagnosis of SoD additionally was confirmed by a psychiatrist with somatic experience, a specialist in internal medicine, or a general practitioner with psychiatric experience. Where possible, general practice and former hospital records were obtained (with patient's consent) and studied by the interviewer in addition to using the results of the structured interviews in order to ascertain diagnoses. All participants had a well-documented history of somatic and/or psychiatric symptoms. All had received previous inpatient or outpatient treatment at psychiatric or somatic hospitals and

were referred for specialized treatment. Next, self-report measures were administered under supervision of formerly described interviewers.

Table 1 presents the demographic characteristics of the four study groups and the total sample. No significant differences were found between the diagnostic sub-groups in the distribution of genders or levels of education.

This study was approved by the local ethics committee. After complete description of the study and procedure, participants provided written informed consent to participate, according to the Declaration of Helsinki.

Table 1 *Demographic Characteristics of the Study Groups and the Total Sample*

		BPD	SoD	BPD+SoD	PC	Total Sample
N =		120	159	129	64	472
	Male	40	47	30	28	145
	Female	80	112	99	36	327
Age M (SD)		29.9 (8.8)	38.3 (10.5)	33.6 (9.1)	36.8 (9.9)	34.7 (10.1)
Social	N	30.8 %	45.3 %	40.3 %	28.1%	37.9%
	T	60.8	41.5	47.3	56.3	50.0
	S	8.3	13.2	12.4	15.6	12.1
Educ	L	24.2 %	22.6 %	27.1 %	23.4%	24.4%
	M	35.8	45.9	37.2	46.9	41.1
	H	40	31.4	35.7	29.7	34.5

Note: BPD, borderline personality disorder; SoD, somatoform disorder; BPD+SoD, borderline personality disorder and somatoform disorder; PC, psychiatric coomparison group; Social, primary relationship status; N, no primary partner; T, living together; S, separated by death or divorce; Educ, highest level of education attained; L, primary and low-level secondary education; M, middle level secondary education; H, high-level secondary education.

Measures

The *Composite International Diagnostic Interview*, section C (CIDI; World Health Organization, WHO, 1990; Dutch version Smitten, Smeets, & Van den Brink, 1998) is a comprehensive, standardized instrument for assessing mental disorders according to the definitions and diagnostic criteria of DSM-IV and ICD-10. The CIDI has been shown to have good reliability and validity (Andrews & Peters, 1998).

The *Borderline Personality Disorder Severity Index* (BPDSI; Weaver & Clum, 1993; Dutch version IV, Arntz, 1999) is a semi-structured interview that contains nine sections and 70 items (Abandonment, 7 items; Relationships, 8 items; Self-image, 8 items; Impulsivity, 11 items; Parasuicide, 13 items; Affect, 5 items; Emptiness, 4 items; Anger, 6 items, and Dissociation / Paranoia, 8 items) corresponding to the symptom clusters of BPD. Each section contains items asking about events, for example, “Did you, during the last three months, ever become desperate when you thought that someone you cared for was going to leave you?” The items are scored by the interviewer using a 10-point scale, indicating how often the event happened during the last three months. An average score was calculated for each

section, total scores were calculated by summing the section scores. The BPDSI has been shown to have good validity and reliability (Arntz et al., 2003); for inclusion and categorical analyses a cut-off score of 20 was used.

In order to assess 'under-regulation of affect', each subject completed the Dutch self-report version of the *Structured Interview for Disorders of Extreme Stress Not Otherwise Specified, Revised* (SIDES-rev; Ford & Kidd, 1998), an adaptation of the interview which provides a sub-scale for dysregulated affect (Ford & Kidd, 1998; Dutch translation Van Dijke & Van der Hart, 2002). The SIDES-rev was translated into Dutch and retranslated by a near-native speaker (Cronbach's α = .75). The criterion for presence of pathological under-regulation of affect and categorical analyses was adopted from the SIDES scoring manual (Ford & Kidd, 1998; from criterion I.a. "affect dysregulation:" 2 out of 3 items rated with severity $\geq$ 2). The items include: (1) often getting "quite upset" over daily matters, (2) being unable to get over the upset for hours or not being able to stop thinking about it, and (3) having to "stop everything to calm down and it took all your energy" or "getting drunk, using drugs or harming yourself" to cope with emotional distress. Thus, the measure addresses the core components of under-regulation of affect, i.e., frequent/intense distress, inability to modulate or recover from distress, and use of self-defeating coping to deal with distress.

In order to assess 'over-regulation of affect', each subject completed the *Bermond Vorst Alexithymia Questionnaire* (BVAQ; Vorst & Bermond, 2001), which is a Dutch forty-item questionnaire with good psychometric qualities (Vorst & Bermond, 2001), encapsulating two distinct second order factor groupings: cognitive dimensions (diminished ability to verbalize, identify, and analyze emotions) and affective dimensions (diminished ability to emotionalize and fantasize). High scores represent stronger alexithymic tendencies. The reliability for the total scale and its subscales is good and varies between .75 and .85 (Vorst & Bermond, 2001). A reliability analysis was performed for the whole sample and the BVAQ proved to be reliable for our purposes (Cronbach's α = .88). The cognitive factor of the BVAQ was used to assess over-regulation in order to enable comparison with previous studies (Waller & Scheidt, 2006, 2004). The cognitive factor of the BVAQ is highly correlated with the *Toronto Alexithymia Scale* (TAS-20; Bagby, Parker, & Taylor, 1994; r = .80). The cut off score for pathological alexithymia/ over-regulation of affect of the BVAQ cognitive factor is in agreement with the cut off scores used in TAS-20 studies (Taylor, Bagby, & Parker, 1997) and were used for categorical analyses.

Reports of potentially traumatic events were collected using the *Traumatic Experiences Checklist* (TEC; Dutch version, Nijenhuis, Van der Hart, & Kruger, 2002), a retrospective self-report questionnaire concerning adverse experiences and potential traumatic events. Reports of traumatic experiences were confirmed by close relatives in a sub-sample of Delta Psychiatric Centre participants, with 100% agreement. Participants stated for each item at what age this first happened. Three specific developmental epochs were considered in the present study (age 0-6 years, age 7-12 years, and age 13-18 years) and only events that

directly involved a primary caretaker were used to identify the presence of three types (emotional, physical, and sexual) of potentially traumatizing events caused by a primary caretaker (TPC). For categorical assessment epochs in which the traumatic event first occurred was used in categorical analyses. The TEC has been shown to have good reliability and validity among psychiatric outpatients (Nijenhuis et al., 2002).

PTSD was assessed with a sub-sample of patients from the Delta PC study site (N=138) using Self-Rating Inventory for Post-traumatic Stress Disorder (SRIP; Hovens, Van der Ploeg, Bramsen, Klaarenbeek, & Rivero, 1994). This inventory has 22 items reflecting the 17 symptoms from DSM-IV. The sequence of the items does not follow DSM-IV but has been randomized. *All* items are scored on a 4-point rating scale with anchors of 1: not at all and 4: very much, indicating intensities. A total score is calculated by adding all scores. Scores for the subscales of Intrusion, Avoidance, and Hyper-arousal can be calculated by adding the scores on the relevant items. Further, a DSM – IV diagnosis can be calculated by using an algorithm (Hovens, Bramsen, & Van der Ploeg, 2000). This sub-sample did not differ significantly from the total sample on age, gender, and group.

Statistical Analyses

All analyses were performed using SPSS, version 16 (SPSS Chicago). Pearson product moment correlations were calculated for the whole sample in order to describe the bivariate relationships among affect dysregulation (under-regulation and over-regulation), TPC-types, and developmental epochs. For categorical analyses cut off scores computed as mentioned in the measures section were applied. To compare the likelihood of reporting TPC and under-regulation and over-regulation for each diagnostic cohort (BPD, SoD, BPD+SoD, and psychiatric controls), cross-tabulations with standard residuals were performed. A multivariate analysis of variance (MANOVA) was performed to identify diagnostic group differences on severity scores for TPC and the reporting of TPC in three developmental epochs (0-6, 7-12, and 13-18 years old). Finally, a multivariate analysis of covariance (MANCOVA) was conducted on scores for over-regulation and under-regulation of affect, with diagnostic group as the independent variable and severity of sexual, physical, and sexual TPC and the occurrence of TPC in early childhood (ages 0-6 years old) as covariates, in order to determine if differences between the diagnostic groups in affect regulation (Van Dijke, Ford, et al., 2010) could be accounted for by the severity or epoch of TPC.

RESULTS

Almost two-thirds (63.6%) of participants reported at least one instance of traumatization-by-a-primary-caretaker. Table 2 presents the bivariate correlations between the trauma history and under- and over-regulation of affect variables. The relationships generally were

not strong, with statistically significant correlations only between physical TPC and over-regulation of affect, and adolescent-epoch caretaker traumatization and emotional TPC and under-regulation of affect. For a subsample of the patients meeting DSM IV-TR criteria for PTSD, analyses were repeated. On a dimensional level only associations for under-regulation of affect with total SRIP proved significant ($r = .41$; $p < .000$), and for over-regulation with total SRIP ($r = .27$; $p < .001$) and over-regulation with developmental epoch 0-6 years ($r = .17$; $p < .05$). On a categorical level only the association between over-regulation and total SRIP ($r = .31$; $p < .01$) remained its significance but disappeared for developmental epoch 0-6 years and for under-regulation of affect with total SRIP.

Table 2. Correlations between affect dysregulation and TPC for total sample

N = 471	Over-regulation of affect	Under-regulation of affect
Developmental epoch 0-6 years	.05	.11*
Developmental epoch 7-12 years	.03	.02
Developmental epoch 13-18 years	.00	.08
Sexual TPC	.05	.02
Emotional TPC	.01	.14**
Physical TPC	.10*	.04

Note: * $p \leq .05$; ** $p \leq .01$

Table 3 presents the results from cross-tabulation analyses of the likelihood of reporting TPC for the BPD, SoD, BPD+SoD, and psychiatric control groups. Approximately 50% of the SoD and psychiatric control participants reported a history of TPC, compared to 70-80% of the BPD and BPD+SoD participants. The BPD+SoD group was significantly more likely than other groups to report TPC and the SoD group was significantly less likely to report TPC ($\chi^2 = 28.34$, $df = 3$, $p <.000$). Figure 1 presents the comparison of mean scores for TPC types, developmental epochs, and total TPC experiences for diagnostic study groups.

The MANOVA exploring group differences in the severity of each TPC-type, the developmental epochs at which TPC occurred in childhood, and the two types of affect dysregulation resulted in a statistically significant difference overall: F (24, 1326) = 5.62; $p <.000$; Wilks' Lambda = .76; partial eta squared = .09. When the results for the dependent variables were considered separately, between group differences were found for emotional- physical- and total TPC experiences, as well as for developmental epoch 0- 6 years, developmental epoch 7-12 years, developmental epoch 13-18 years, *but not* for sexual TPC. All effect sizes were small (see Table 4).

Results of the MANCOVA comparing the four diagnostic groups on the affect regulation scores while controlling for sexual, physical, and emotional TPC severity and early developmental TPC showed a significant overall between group effect: F (6, 920) = 13.13; $p <.001$; Wilks' Lambda = .85; partial eta squared = .08. Under-regulation levels differed between the diagnostic sub-groups after controlling for the effect of trauma history, with a large effect

size: F (3, 461) = 24.12; p <.001; partial eta squared = .14. Over-regulation of affect also differed between the diagnostic sub-groups after controlling for the effect of trauma history, although with a smaller effect size: F (3, 461) = 4.30; p =.005; partial eta squared = .03.

Table 3. Presence of Trauma-by-Primary-Caretaker for Diagnostic Groups

		No traumatic events by primary caretaker	Traumatic events by primary caretaker	Total
BPD	Frequency	34	85	119
	% group	28.6%	71.4%	100.0%
	Std. residual	-1.4	1.1	
SoD	Frequency	77	81	158
	% group	48.7%	51.3%	100.0%
	Std. residual	**2.6**	-1.9	
BPD+SoD	Frequency	29	100	129
	% group	22.5%	77.5%	100.0%
	Std. residual	**-2.6**	**2.0**	
PC	Frequency	31	33	64
	% group	48.4%	51.6%	100.0%
	Std. residual	1.6	-1.2	
Total	Total	171	229	470
	% group	36.4%	63.6%	100.0%

Note: BPD, borderline personality disorder; SoD, somatoform disorder; BPD+SoD, borderline personality disorder and somatoform disorder; PC, psychiatric comparison group; Std. Residual, standardized residual values. Cells with values less than -2 or greater than 2 are statistically significant and are identified in **bold** type. A negative value indicates "less frequent than expected" and a positive value indicates "more frequent than expected".

Table 4. Between group differences for TPC experiences, developmental epochs and affect dysregulation

	F(3, 464)	**Partial eta-squared**
Emotional TPC	6.79***	.04
Physical TPC	8.08***	.05
Sexual TPC	1.43	.01
Total TPC experiences	7.81***	.05
Developmental epoch 0-6	6.01***	.04
Developmental epoch 7-12	4.57**	.03
Developmental epoch 13-18	7.64***	.05
Under-regulation of affect	26.1***	.14
Over-regulation of affect	5.33***	.03

Note: ** $p \leq .01$; *** $p \leq .001$.

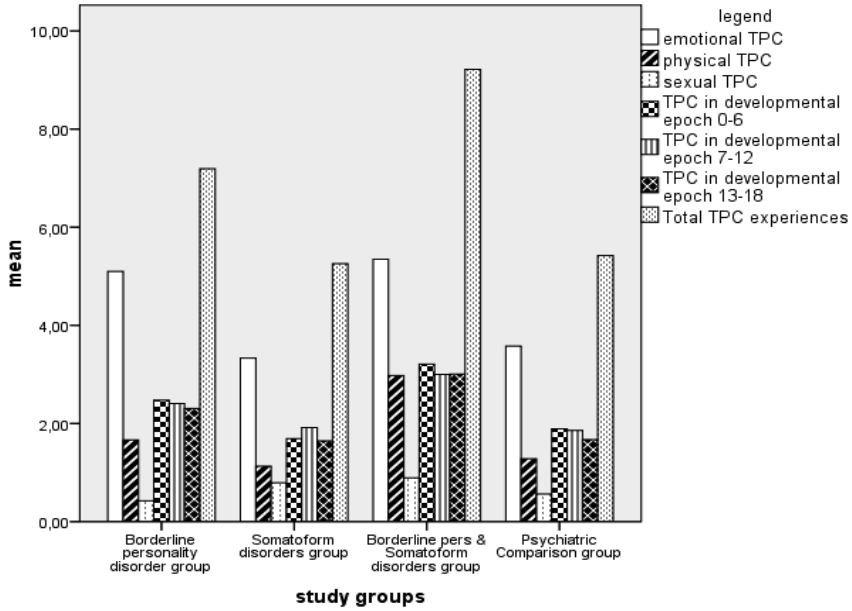


Figure 1. Comparison of TPC types, developmental epochs, and total TPC experiences for diagnostic study groups

Table 5. Means and SD for scores for TPC types, developmental epochs, and affect dysregulation

	Group	Emotional TPC	Physical TPC	Sexual TPC	epoch 0-6	epoch 7-12	epoch 13-18	Total TPC	Over-regulation of affect	Under-regulation of affect
Mean (SD)	BPD	5.11 (4.37)	1.61 (3.23)	.43 (1.61)	2.45 (2.89)	2.40 (2.47)	2.28 (2.39)	7.19 (7.21)	77.06 (17.89)	8.29 (1.84)
	SoD	3.35 (4.22)	3.80 (.61)	.79 (2.07)	1.70 (2.89)	1.93 (2.64)	1.66 (2.48)	5.26 (7.18)	72.77 (17.51)	6.64 (2.02)
	BPD+SoD	5.35 (4.43)	4.05 (.78)	.89 (2.19)	3.21 (3.42)	3.00 (2.76)	3.01 (2.81)	9.22 (8.26)	79.26 (17.90)	8.44 (1.83)
	PC	3.64 (4.40)	3.67 (.61)	.56 (1.90)	1.92 (3.36)	1.89 (2.74)	1.70 (2.33)	5.42 (7.63)	70.70 (19.55)	7.19 (2.30)

Note: BPD, borderline personality disorder; SoD, somatoform disorder; BPD+SoD, borderline personality disorder and somatoform disorder; PC, psychiatric comparison group; SD, standard deviation

Table 5 shows the means and SDs of TPC experiences, developmental epochs, and affect dysregulation for the BPD, SoD, BPD+SoD, and psychiatric control groups. Overall, the BPD+SoD group reported the most complex trauma histories, with significant more reports for severe physical- TPC across all three childhood developmental epochs Both the BPD+SoD and BPD groups reported more emotional TPC, under- and over-regulation of affect than did the SoD and psychiatric control groups.

DISCUSSION

BPD and SoD may be among the numerous final common pathways that occur when affect regulation is compromised as a result of early life interpersonal traumatization and disruption in (or unavailability of) caregiving relationships. Although the relationship of childhood sexual abuse to dissociative symptoms has been investigated in a small sample of adults with psychotic disorders (Offen, Waller, & Thomas, 2003), this is the first study to our knowledge that examined the potential differential relationship of several forms of trauma by a caretaker (TPC) within distinct epochs of childhood with affect dysregulation in a large sample of adults with well-defined severe psychiatric illnesses. Almost two-thirds of participants reported having experienced childhood TPC, ranging from approximately 50% of patients with SoD or other psychiatric disorders to more than 75% of patients with comorbid BPD+SoD. Consistent with our hypotheses, under-regulation of affect was associated with emotional TPC and TPC occurring in developmental epoch 0-6, particularly among adults with BPD. Over-regulation of affect was associated with physical TPC, although this was not limited to participants diagnosed with SoD but also included those diagnosed with BPD. Thus study findings suggest that childhood trauma by primary caretaker is prevalent among psychiatric patients, particularly those with BPD, and differentially associated with under- and over-regulation of affect depending on the type of traumatic exposure.

For a subsample of patients with comorbid PTSD interestingly no significant associations between affect dysregulation and developmental epochs or TPC were found, and *over-regulation* of affect (and not under-regulation) remained significantly related to PTSD severity across developmental epochs. In line with previous calls for the assessment of the nature of affect dysregulation and differentiating between inhibitory and excitatory regulation in BPD and SoD patients (Van Dijke, Ford, et al., 2010; Van Dijke, Van der Hart et al., 2010), also for PTSD patients difficulty with addressing and analyzing emotions or "mentalising emotions" (Fonagy, Gergely, Jurist, & Target, 2002) and inhibitory regulation seem to have been overlooked and may be of particular importance in the assessment and treatment of complex TPC-related pathology such as comorbid BPD+SoD or Complex PTSD (Ford, 2005). These findings are consistent with recent neuroimaging results (Lanius et al., 2010; 2011) and current proposals for DSM V (Şar, 2011) that suggest that there may be an over-regulated (dissociative) sub-type of PTSD.

The presence of a BPD diagnosis was more consistently associated with a history of emotional TPC and with both under- and over-regulation of affect than the presence of a SoD diagnosis. This finding is in accordance with previous findings that child abuse and neglect are associated with BPD (Yen et al., 2002; Zanarini et al., 2002) and affect dysregulation (Ford, 2005). However, whereas prior studies have emphasized the role of TPC in early childhood as a contributor to BPD and affect dysregulation, in this study BPD was associated with TPC that occurred in each of the three childhood developmental epochs.

This suggests that early life attachment-trauma might have adverse effects on affect regulation and interpersonal functioning as a result of cumulative (re)traumatization (Follette & Vijay, 2008) as well as (or instead of) due to its neurobiological and psychological effects on early childhood development *per se*. The findings also suggest that factors other than childhood traumatization by a primary caretaker are likely to account for subsequent affect dysregulation, particularly under-regulation of affect. This is consistent with prior evidence that BPD is not primarily a disorder related to childhood traumatic victimization (Golier et al., 2003), although the present study's results do not rule out a potential role for childhood traumatization by other adults in the under-regulation of affect characterizing BPD or in the weaker but still evident association between BPD and over-regulation of affect.

The finding that the comorbid diagnosis of BPD+SoD -even more so than BPD alone- was particularly associated with the severity of physical TPC and over-regulation of affect , suggest that there may be more extensive sequelae associated with violations of bodily integrity (which may include but does not specifically involve sexual violations) than are accounted for by the BPD diagnosis alone. This is consistent with a complex post-traumatic stress disorder (CPTSD) formulation (Ford, 2008) in which early childhood developmentally adverse interpersonal trauma (Ford, 2005) is associated with affect dysregulation and somatic dysregulation (as well as dissociation and significant changes in core beliefs).

The finding that emotional TPC was most consistently associated with BPD and with under-regulation of affect is consistent with the findings of Teicher and colleagues (2006) that emotional abuse was a more robust predictor of biological and psychological dysregulation than was physical or sexual abuse. Emotional abuse can often occur with physical or sexual abuse, especially in poly-victimized children (Finkelhor et al., 2007), and warrants attention as a less obvious but potentially pernicious source of affect dysregulation and personality pathology.

Future Directions

Study findings are consistent with prior calls for more systematic differentiation between under-regulation and over-regulation of affect (Van Dijke, 2008, Van Dijke et al., in press) in the study of the traumatic antecedents of affect dysregulation (Herman, 1992; McLean et al., 2006; Pelcovitz et al., 1997; Roth et al., 1997; Van der Kolk et al., 1996). The interrelationships between under-regulation or over-regulation of affect, different types and developmental epochs of exposure to psychological trauma and associated disruptions in attachment, and the range of psychiatric disorders remain to be explored. It would be interesting to assess reported attachment-trauma and over-regulation of affect relative to the revised CPTSD/DESNOS symptom set identified in a recent factor analytic study (Ford, 2009), because the differential roles of violations of bodily integrity relative to overregulation of affect and wounding of one's feelings or lack of appreciation of the self/ identity

relative to under-regulation of affect might be distinguished for patients with the CPTSD/ DESNOS symptom set.

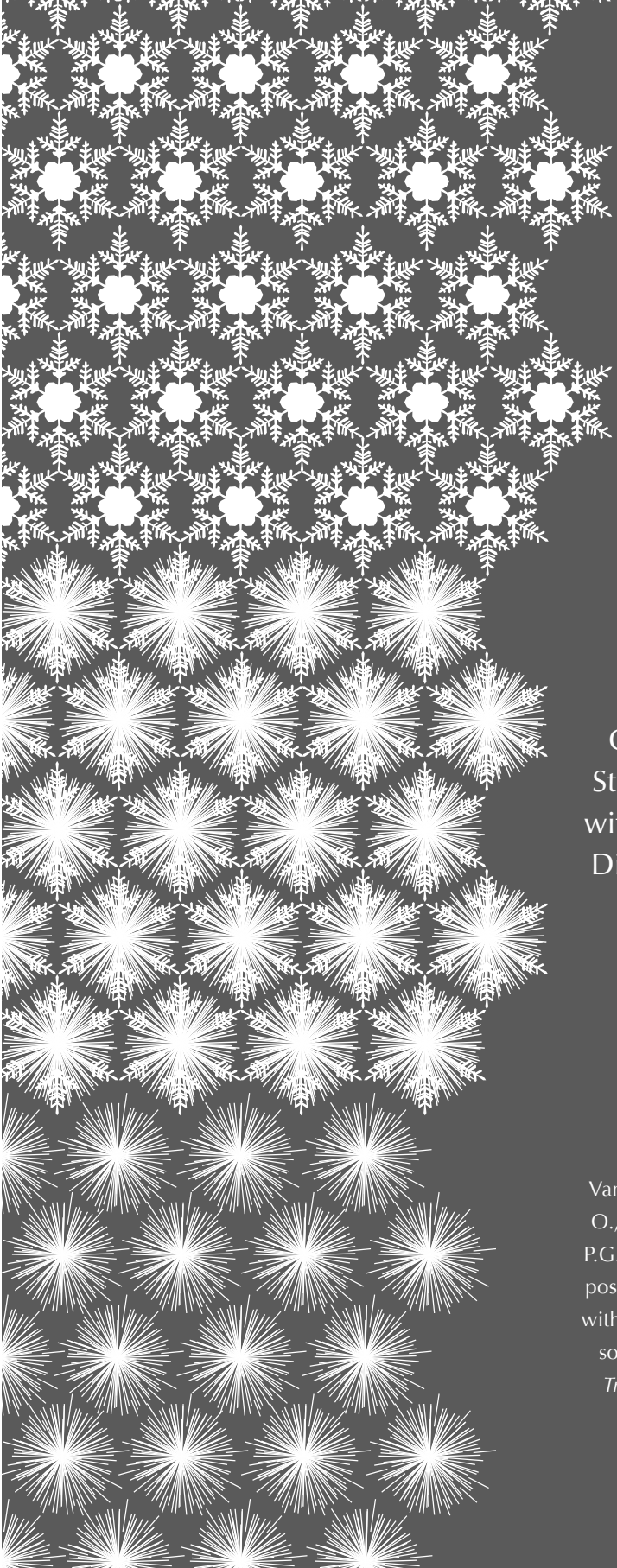
Limitations

This study explored the potential role of childhood traumatization caused by a primary caretaker occurring during discrete developmental epochs in the development of affect dysregulation. Data were obtained from a psychiatric population consisting of clinically admitted psychiatric patients with persistent psychopathology. Retrospectively self-reported types and times of exposure to psychological trauma may be inaccurate under these circumstances due to the potential influence of current PTSD symptom severity on trauma history reporting (Sutherland & Bryant, 2008)or may be hampered due to psychological defense against remembering *early* childhood TPC and holding on to a "belief in a just world" (Herman, 1992). Nevertheless, efforts were made (with patient consent) to confirm the reported traumatic events with close relatives following procedures described in the "Clinical Assessment of Trauma-Related Self and Affect dysregulation" (Van Dijke, 2008). Overall, the clinical observations is that participants who did report early TPC experiences found it difficult to do so; therefore, there might have been more under-reporting than over-reporting of these events due to the emotions that were evoked and the difficulty in handling these emotions and cognitions. Psychopathology does not necessarily equate with inaccuracy of trauma memory reporting. For instance, while showing evidence of "enhanced cognitive schemata" that may bias recall, schizophrenic patients were found to reliably report sexual trauma history over a one-year period (Klewchuk, McCusker, Mulholland, & Shannon, 2007). The finding that sexual abuse was infrequently reported also may have reduced the study's ability to detect relationships with this type of TPC. Infrequent reports of sexual abuse may also be related to the fact that participants were diagnosed with comorbid PTSD (*not* primarily diagnosed with PTSD). This may perhaps constrain the generalisability of the findings for PTSD-only populations.

CONCLUSION

This study assessed the relationship between self-reported childhood traumatization caused by a primary caretaker for specific childhood developmental epochs and affect dysregulation in BPD, SoD, BPD+SoD, and psychiatric control patients. When considering our sample population as a whole, under-regulation of affect was significantly related to emotional TPC and the 0-6 year old developmental epoch, while over-regulation of affect was related to physical TPC. However, the relationships were relatively weak, suggesting that heterogeneity within the samples may have diluted the findings. When diagnostic groups were examined separately, BPD was associated with emotional TPC across all developmental epochs of

childhood and emotional TPC was associated with under-regulation of affect. The BPD+SoD group was the most likely to report early TPC and both forms of affect dysregulation. Thus, our findings indicate the importance of examining the role of emotional abuse in severe psychiatric disorders, and the combination of affect under-regulation and over-regulation associated with early TPC especially in more complex disorders such as the combination of BPD and SoD.



Chapter five

Complex Posttraumatic Stress Disorder in Patients with Borderline Personality Disorder and Somatoform Disorders

Van Dijke, A., Ford, J.D., Van der Hart, O., Van Son, M.J.M., Van der Heijden, P.G.M., & Bühring, M. (2011). Complex posttraumatic stress disorder in patients with borderline personality disorder and somatoform disorders, *Psychological Trauma: Theory, Research, Practice, and Policy*

ABSTRACT

Introduction

Prior studies have reported an elevated risk of childhood trauma exposure or Complex PTSD symptoms. also known as Disorders of Extreme Stress Not Otherwise Specified (DESNOS). in persons diagnosed with borderline personality disorder (BPD) and somatoform disorders (SoD). However, Complex PTSD/ DESNOS, BPD and SoD were never assessed in unison.

Methods

Complex PTSD/ DESNOS symptoms and the full syndrome were assessed and compared in a sample (*N* = 472) of adult psychiatric patients with confirmed diagnoses of Borderline Personality Disorder (BPD), Somatoform Disorders (SoD), comorbid BPD+SoD, or Affective or Anxiety Disorders (Psychiatric Controls, PC).

Results

BPD+SoD patients had the most extensive childhood trauma histories and were most likely (38%) to meet Complex PTSD/ DESNOS criteria, followed by BPD (26%), PC (17%), and SoD (10%), The BPD+SoD and BPD-only groups reported significantly higher levels of complex PTSD/ DESNOS symptoms than the SoD or PC groups, and did not differ from each other except for greater severity of complex PTSD/ DESNOS somatic symptoms by the BPD+SoD group.

Conclusion

Complex PTSD/ DESNOS warrants further investigation with psychiatrically impaired adults as a potential independent syndrome or as a marker identifying a sub-group of affectively or both affectively and somatically dysregulated patients diagnosed with BPD who have childhood trauma histories.

INTRODUCTION

Sequelae of early life "neurodevelopmental injury" (Kaffman, 2009) have been described as epidemic and under-studied. Adults who were exposed to chronic interpersonal trauma often demonstrate complex psychological disturbances that are not fully captured by the posttraumatic stress disorder (PTSD) diagnosis (Ford, Stockton, Kaltman, & Green, 2006; Van der Kolk, 2005; Van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005). Increasing complexity of psychological trauma exposure has been shown to be strongly associated with corresponding increases in the extent, severity, and range of clinically-significant symptoms in childhood and adolescence (Cloitre et al., 2009; Elliott, Alexander, Pierce, Aspelmeier, & Richmond, 2009; Finkelhor, Ormrod, & Turner, 2007; Ford, Connor, & Hawke, 2009; Ford, Elhai, Connor, & Frueh, 2010; Holt, Finkelhor, & Kantor, 2007; Richmond, Elliott, Pierce, Aspelmeier, & Alexander, 2009) and in adulthood (Briere, Kaltman, & Green, 2008; Chapman et al., 2004; Edwards, Holden, Felitti, & Anda, 2003).In adulthood, these complex traumatic stress reactions may constitute a syndrome of Complex PTSD (Herman, 1992) or Disorders of Extreme Stress Not Otherwise Specified (DESNOS; Van der Kolk et al., 2005) that includes problems with affect dysregulation, dissociation, somatization, and shattered or altered basic beliefs.

Complex PTSD increasingly has been recognized as a potential prognostic factor (Ford, Hawke, Alessi, Ledgerwood, & Petry, 2007; Ford & Kidd, 1998), a consideration for treatment planning (Cook, Schnurr, & Foa, 2004; Courtois, Ford, & Cloitre, 2009; Ford, Cloitre, M., 2009; Ford, Courtois, Steele, Hart, & Nijenhuis, 2005), and a treatment outcome domain (Brand, Classen, McNary, & Zaveri, 2009; Cloitre, Koenen, Cohen, & Han, 2002; Cohen & Hien, 2006; Resick, Nishith, & Griffin, 2003) of relevance to clinical practice and research with survivors of psychological trauma.

However, Complex PTSD was not codified as a diagnosis in the fourth edition of the American Psychological Association's *Diagnostic and Statistical Manual* (APA, 2000). Although the DSM IV Subcommittee on PTSD favored the creation of a separate diagnosis to capture the psychiatric symptomatology related to chronic exposure to interpersonal trauma (Van der Kolk et al., 2005), the DSM IV lists the DESNOS symptoms not as a distinct diagnosis but under the rubric of "associated and descriptive features" of PTSD (APA, 1994, p. 425). Whereas_the PTSD diagnosis is likely to fit some of the psychiatric problems of many psychiatrically impaired traumatized individuals, focusing on PTSD symptoms and, at best, relegating other posttraumatic sequelae to "associated features" or "comorbidities" may interfere with a comprehensive and effective treatment approach (Courtois & Ford, 2009). For example, the first edition of the Treatment Guidelines of the International Society for Traumatic Stress Studies (Foa, Keane, & Friedman, 2000), while recognizing that over 80% of patients PTSD suffer from comorbid conditions, including depression, phobias, anxiety, dissociative with and somatoform disorders, refers readers to the "rich empirical

literature of these co-morbid conditions" (p. 375) for treatment guidance. However, there is no evidence that other treatment manuals are, in fact, applicable to these "co-morbid" conditions in patients with PTSD. In the recently updated ISTSS treatment guidelines for PTSD only two studies are cited that involve complex trauma populations and there was no mention of techniques to deal with the severe affect and somatic dysregulation, dissociative, and altered life schema problems represented by Complex PTSD (Busuttil, 2009).

Studies have reported an elevated risk of childhood trauma exposure or Complex PTSD symptoms in persons diagnosed with borderline personality disorder (BPD; e.g., Ford, 1999; McLean & Gallop, 2003; Zanarini, Yonge, & Frankenburg, 2002; Yen et al., 2002) and somatoform disorders (SoD; e.g., Brown, Schrag, & Trimble, 2005; Saxe et al., 1994; (Spitzer et al., 2009). However, only three of these studies assessed the full Complex PTSD criterion set, with small samples of entirely (McLean & Gallop, 2003) or predominantly (Spitzer et al., 2009) female or entirely male (Ford, 1999) psychiatric patients. None of these studies directly compared patients with BPD to those with SoD. In fact, no study has systematically examined the association of BPD and SoD, separately and comorbidly, with early childhood trauma exposure and complex PTSD symptom severity and syndromal prevalence. The present study therefore was designed to systematically assess Complex PTSD in a large adult psychiatric sample with four distinct sub-groups: BPD, SoD, comorbid BPD+SoD, and other psychiatric disorders.

METHODS

Participants and Procedure

Participants were 472 consecutive admissions to two adult inpatient psychiatric treatment centers, Eikenboom Center for Psychosomatic Medicine, Altrecht Utrecht (N = 117) and De Waard, Delta Psychiatric Center, Rotterdam (N = 355) who participated in the multicentre project "Clinical Assessment of Trauma-Related Self and Affect Dysregulation" (Van Dijke, 2008). Diagnoses of BPD and SoD were made during intake according to the DSM-IV criteria. Where possible, general practice and former hospital records were obtained (with patient's consent) and studied. BPD and SoD (i.e., somatization disorder, undifferentiated somatoform disorder, severe conversion and pain disorder) diagnoses were confirmed by trained clinicians using the BPDSI and the CIDI (see below). Table 1 presents the demographic characteristics of the four study groups and the total sample. No significant effects were found for sex, and level of education on the dependent variables. This study was approved by the local ethics committee and included written consent from all participants.

Table 1 *Demographic Characteristics of the Study Groups and the Total Sample*

		BPD	SoD	BPD+SoD	PC	Total Sample
N =		120	159	129	64	472
Male		40	47	30	28	145
Female		80	112	99	36	327
Age M (SD)		29.9 (8.8)	38.3 (10.5)	33.6 (9.1)	36.8 (9.9)	34.7 (10.1)
Social	N	30.8 %	45.3 %	40.3 %	28.1%	37.9%
	T	60.8	41.5	47.3	56.3	50.0
	S	8.3	13.2	12.4	15.6	12.1
Educ	L	24.2 %	22.6 %	27.1 %	23.4%	24.4%
	M	35.8	45.9	37.2	46.9	41.1
	H	40	31.4	35.7	29.7	34.5

Note: BPD, borderline personality disorder; SoD, somatoform disorder; BPD+SoD, borderline personality disorder and somatoform disorder; PC, psychiatric comparison group; Social, primary relationship status; N, no primary partner; T, living together; S, separated by death or divorce; Educ, highest level of education attained; L, primary and low-level secondary education; M, middle level secondary education; H, high-level secondary education.

Measures

The *Composite International Diagnostic Interview* (CIDI; World Health Organization, WHO, 1997; Dutch version, Ter Smitten et al., 1998) is a standardized interview for assessing mental disorders according to the definitions and diagnostic criteria of DSM-IV and ICD-10. CIDI diagnoses have acceptable reliability and validity (Andrews & Peters, 1998). SoD diagnoses were confirmed by independent review by a psychiatrist with somatic experience, a specialist in internal medicine, or a general practitioner with psychiatric experience.

The *Borderline Personality Disorder Severity Index* (BPDSI; Weaver & Clum, 1993; Dutch version IV, Arntz, et al., 2003) is a semi-structured interview that contains nine sections (abandonment, relationships, self-image, impulsivity, parasuicide, affect, emptiness, anger, and dissociation and paranoia) corresponding to the symptom clusters of BPD. The BPDSI has been shown to have good validity and reliability (Arntz et al., 2003); a cut-off score of 20 was used to diagnose BPD (personal communication, Arntz, October 2003).

The Dutch self-report version of the *Structured Interview for Disorders of Extreme Stress Not Otherwise Specified* (SIDES-rev; Ford & Kidd, 1998; Van Dijke & Van der Hart, 2002) was used to assess Complex PTSD. The SIDES-rev-NL total score showed evidence of internal consistency in this sample (Cronbach's $\alpha = 0.91$). Current rather than lifetime Complex PTSD was assessed in order to reduce reliance on retrospective reports. Partial (Ford & Smith, 2008) as well as full Complex PTSD was included, requiring the presence of at least two of the primary Complex PTSD features criteria (i.e., affect dysregulation, dissociation, somatization) and one of the three altered fundamental beliefs sub-scales (i.e., self, relationships, systems of meaning).

Self-report of potentially traumatic events was assessed with the *Traumatic Experiences Checklist* (TEC; Dutch version, Nijenhuis, Van der Hart, & Kruger, 2002), a retrospective

questionnaire. Delta Psychiatric Center site participants had reports of trauma confirmed by close relatives, with 100 % agreement. The TEC has been shown to have acceptable reliability and validity among psychiatric outpatients (Nijenhuis et al., 2002). Composite scores were calculated for the number of types of (a) emotional, (b) physical, and (c) sexual traumatic experiences reported, and for the number of traumatic experiences in each of three childhood developmental epochs: (a) 0-6 years, (b) 7-12 years, (c) 13-18 years.

PTSD was assessed with a sub-sample of patients from the Delta PC study site (N=133) using Self-Rating Inventory for Posttraumatic Stress Disorder (SIRP; Hovens, Bramsen, Klaarenbeek, Schreuder, & Rivero., 1994). This inventory has 22 items reflecting the 17 symptoms from DSM-IV. The sequence of the items does not follow DSM-IV but has been randomized. *All* items are scored on a 4-point rating scale with anchors of 1: not at all and 4: very much, indicating intensities. A total score is calculated by adding all scores. Scores for the subscales of Intrusion, Avoidance, and Hyperarousal can be calculated by adding the scores on the relevant items. Further, a DSM – IV diagnosis can be calculated by using an algorithm (Hovens, Bramsen, & Van der Ploeg, 2000). This sub-sample did not differ significantly from the total sample on age, gender, and diagnostic group representation.

Statistical Analyses

All statistical analyses were performed using SPSS, version 16 (SPSS Chicago). Group means for the composite traumatizing event and developmental epoch scores were compared using multivariate analysis of variance (MANOVAs). All patients classified as Complex PTSD (full or partial) were compared to those not meeting criteria for Complex PTSD on mean scores for each type and epoch of traumatic exposure with a MANOVA. Cross tabulations with Chi-square tests were used to determine whether Complex PTSD was differentially likely across the diagnostic groups, and the four diagnostic groups were compared on continuous SIDES subscale and total scores with a multivariate analysis of variance (MANOVA). In order to determine if the differences attributed to Complex PTSD were distinct from those due to PTSD, a MANCOVA was conducted including PTSD severity as the covariate. Finally, logistic regression analysis was done with Complex PTSD classification as the dependent categorical variable, and diagnostic groups *(*using psychiatric comparison participants as the reference category) as the independent variable, controlling for the effects of trauma history (i.e., TEQ scores), in order to determine if the relationship of the psychiatric disorders with Complex PTSD can be fully or partially accounted for by severity or epoch of trauma history.

RESULTS

Most patients (89%) reported experiencing at least one potential traumatizing event. The BPD and BPD+SoD groups more frequently than the SoD or PC groups reported each type of traumatizing stressor and exposure in each childhood epoch: F (15, 1281)= 4.36, p < .001; Wilks' Lambda = .87; partial eta squared = .05. Complex PTSD-positive participants more frequently than those who did not meet criteria for Complex PTSD reported all types of traumatizing stressors and exposure in all childhood epochs except for developmental epoch 7-12 years: F (5, 466)= 5.11, p < .001; Wilks' Lambda = .95; partial eta squared = .05.

Table 2 reports the likelihood of meeting current full/partial Complex PTSD criteria for each of the diagnosis groups. Most SoD and psychiatric comparison group members (83 – 90%) did *not* meet criteria for Complex PTSD, whereas more than one quarter of the BPD and almost 40% of the BPD+SoD participants met Complex PTSD criteria. The SoD group was significantly less likely than the BPD+SoD group to meet Complex PTSD criteria (χ^2 = 33.46, df = 3, p <.000, Cramer's V = .27, p < .001).

Table 2. Presence of Complex PTSD in Each Diagnostic Group

		No Complex PTSD	Complex PTSD	Total
BPD	Frequency	89	31	120
	% group	74.2%	25.8%	100.0%
	Std. residual	-.4	.7	
SoD	Frequency	143	16	159
	% group	89.9%	10.1%	100.0%
	Std. residual	1.8	**-3.3**	
BPD+SoD	Frequency	80	49	129
	% group	62.0%	38.0%	100.0%
	Std. residual	**-2.0**	**3.7**	
PC	Frequency	51	11	64
	% group	82.8%	17.2%	100.0%
	Std. residual	.5	-.9	
Total	Total	365	107	472
	% group	77.3%	22.7%	100.0%

Note: BPD, borderline personality disorder; SoD, somatoform disorder; BPD+SoD, borderline personality disorder and somatoform disorder; PC, psychiatric control group; Std. Residual, standard residual values. Cells with values less than -2 or greater than 2 are statistically significant and are identified in **bold** type. A negative value indicates "less frequent than expected" and a positive value indicates "more frequent than expected".

Using the SIDES-rev-NL total and sub-scale scores as dependent variables, an overall between-groups difference was found in a MANOVA (F (21, 1290) = 13.32; p< .001; Wilks' Lambda = .59; partial eta squared = .16), with large between group effect sizes for all

SIDES-rev-NL sub-scales and the total SIDES-rev-NL score (Table 3). The BPD and especially BPD+SoD groups reported higher Complex PTSD scores than the SoD and psychiatric control groups (Table 4). When severity of PTSD symptoms was included in the analysis (MANCOVA) as a covariate, for the smaller sample with whom PTSD was assessed (N= 133), overall group differences were no longer significant and the effect size was reduced (F (21, 350) = 1.37; p = .13; Wilks' Lambda = .80; partial eta squared = .07). The multivariate effect for PTSD was statistically significant (F (7, 122) = 13.22; p < .001; Wilks' Lambda = .57; partial eta squared = .43). However, the univariate effects for diagnostic group remained statistically significant for the total SIDES-rev-NL score and the affect dysregulation and dissociation sub-scores (F= 3.52-3.77; df = 3, p = .02; partial eta squared = .08).

Table 3. Between Group Differences for Complex PTSD Features

	F(3, 455)	Partial eta-squared
Total SIDES-rev-NL score	59.12***	.28
Dysregulation of affect and impulses	51.53***	.25
Dissociation	32.18***	.18
Alterations in self-perception	44.41***	.23
Distorted relations with others	44.48***	.23
Alterations in one's system of meaning	13.68***	.08
Total somatic complaints	18.40***	.11

Note:; *** p £ .001.

Table 4. Comparison of Diagnostic Groups on SIDES-rev-NL Scores

Group		Total SIDES Score	Dysregulation of affect and impulses	Dissociation	Alterations in self-perception	Distorted relations with others	Alterations in one's system of meaning	Total somatic complaints
BPD	Mean	69.18	30.73	3.49	12.60	10.72	9.73	5.27
N = 118	SD	(16.70)	(7.06)	(1.74)	(2.92)	(2.77)	(7.16)	(3.46)
SoD	Mean	51.34	23.29	2.35	9.23	7.82	6.66	6.57
N = 156	SD	(11.49)	(4.92)	(.89)	(3.04)	(2.43)	(2.20)	(3.77)
BPD+SoD	Mean	69.76	31.26	3.89	12.83	10.84	8.88	8.13
N = 127	SD	(13.41)	(6.86)	(1.77)	(2.96)	(2.67)	(2.44)	(4.00)
PC	Mean	56.48	25.24	2.55	10.31	8.64	7.97	4.40
N = 58	SD	(12.78)	(6.46)	(1.19)	(3.29)	(2.37)	(2.46)	(3.49)

Note: BPD, borderline personality disorder; SoD, somatoform disorder; BPD+SoD, borderline personality disorder and somatoform disorder; PC, psychiatric comparison group; SD, standard deviation.

In a logistic regression analysis, Complex PTSD was associated positively with BPD+SoD and inversely with SoD, but not with BPD alone nor with or any trauma history variable (Table 5). Inclusion of the ten independent variables improved the fit of the model significantly

(χ^2 = 53.37, *df* = 9, *p* <.001). The Hosmer-Lemeshow test revealed that for all dependent variables the model fits the data well (χ^2 = 6.44, *df* = 8, *p* = 0.60).

Table 5. Logistic Regression Analyses for Variables Associated with Complex PTSD Classification

N=472	**Odds Ratio**	**95.0 % C.I. For Odds Ratio**	
		lower	**Upper**
PC (reference group)			
BPD	1.56	.77	3.14
SoD	.39*	.18	.84
BPD+SoD	2.29*	1.14	4.59
Total emotional trauma	1.05	.96	1.17
Total physical trauma	.96	.89	1.03
Total sexual trauma	1.02	.95	1.09
Total developmental epoch 0-6 year	1.04	.63	1.73
Total developmental epoch 7-12	.82	.44	1.05
Total developmental epoch 13-18	1.24	.63	2.43

Note: * p < 0.05; BPD, borderline personality disorder; SoD, somatoform disorder; BPD+SoD, borderline personality disorder and somatoform disorder; PC, psychiatric comparison group.

DISCUSSION

Exposure to potentially traumatizing events was prevalent in a sample of psychiatric inpatients, particularly among those diagnosed with BPD alone or comorbid BPD+SoD. Complex PTSD was prevalent (i.e., present in 23% of the sample), particularly in the BPD+SoD sub-group, for whom Complex PTSD was significantly more likely than in the SoD sub-group. This is consistent with prior studies showing a relationship of BPD and Complex PTSD (Ford, 1999; McLean & Gallop, 2003), and extends those findings by showing that the relationship may be most likely for a sub-group of BPD patients who also meet criteria for SoD (Spitzer et al., 2009). In contrast to prior observational study findings, neither BPD alone (McLean & Gallop, 2003), SoD alone (Spitzer et al., 2009), nor psychiatric morbidity (Yen et al., 2002) were as strongly associated with risk of Complex PTSD as the combination of BPD+SoD.

These results are in line with prior findings that the long-term sequelae of childhood trauma do not seem to be encompassed by any single DSM-IV-TR disorder (Ford, 1999; Van der Kolk, 2005; Van der Kolk et al., 2005). Expectably, the somatization component of Complex PTSD appeared to be related to SoD, while the remaining Complex PTSD features were more related to BPD than SoD. General psychiatric impairment was associated with levels of severity of Complex PTSD and each of its features that were comparable to those of SoD and lower than those of the BPD sub-groups. However, specific tests of distinct psychiatric disorders other than BPD and SoD are warranted before concluding that the latter diagnoses are the principal psychiatric disorders associated with Complex PTSD features.

Complex PTSD usually (but not always; e.g., Ford, 1999) is observed to occur comorbidly with (rather than independently of PTSD).Whether Complex PTSD represents a complex variant or sub-type or comorbidity marker for PTSD (Briere & Jordan, 2009; Briere et al., 2008; Resick & Miller, 2009), or distinct posttraumatic syndrome, remains uncertain (Van der Kolk et al., 2005). In the present study, PTSD symptoms were found to account for most of the multivariate association of BPD and SoD with Complex PTSD, thus supporting the view of Complex PTSD as a complex variant of PTSD. However, the associations between BPD and SoD diagnostic groups and the severity of Complex PTSD and its affect dysregulation and dissociation features persisted after controlling for PTSD severity. Thus, certain features of Complex PTSD that are conceptually related to PTSD (i.e., arousal-related somatic dysregulation; altered personal schemas) may be largely accounted for by PTSD, but Complex PTSD features that are more clinically and conceptually distinct from PTSD (i.e., affect dysregulation, dissociation) appear to be empirically distinct from PTSD in this sample of adults with severe psychopathology. The prominent role of dissociation in Complex PTSD and BPD have led to the proposal that complex PTSD may be a dissociative disorder (Van der Hart, Nijenhuis, & Steele, 2005). Affect dysregulation also has been hypothesized to serve as the core feature of Complex PTSD (Ford, 2005). Further research thus is needed to clarify the relationship of PTSD, affect dysregulation, and dissociation in Complex PTSD in psychiatric and other samples in which trauma exposure is prevalent.

The full Complex PTSD syndrome is rare (i.e., <1% prevalence) in non-clinical populations, but Complex PTSD symptoms are common and are associated with childhood traumatic experiences (Ford, Kaltman, Stockton, & Green, 2006; (Scoboria, Ford, Lin, & Frisman, 2008). The present study's results indicate that a larger sub-group of psychiatric patients may meet criteria for the Complex PTSD syndrome (i.e., 10-38%), comparable to findings with a trauma-exposed substance abuse treatment sample (Ford & Smith, 2008). Although comorbid BPD+SoD was particularly related to risk of Complex PTSD, patients who qualified for Complex PTSD nevertheless were only a minority of the BPD+SoD sub-group. Further, meaningful sub-groups of patients with BPD (26%), SoD (10%), or other psychiatric disorders (17%) meet Complex PTSD criteria. Thus, it does not appear that Complex PTSD is simply synonymous with comorbid BPD+SoD nor with BPD. It may serve as a useful marker to identify psychiatrically impaired patients with particularly severe affect dysregulation, dissociation, somatization, and alienation from self and others, as well as providing specific continuous and categorical variables to track clinical outcomes.

Future Directions

In order to establish Complex PTSD as a syndrome with sufficient clinical utility to warrant a unique diagnosis, however, numerous additional tests of its usefulness to practicing clinicians and as a guide to incrementally enhanced treatment effectiveness are needed (First et al., 2004). For example, research might test whether treatment designed specifically to

address Complex PTSD features (e.g., Steele & Van der Hart, 2009) particularly enhances outcomes for BPD+SoD patients who meet criteria for Complex PTSD (versus for all BPD+SoD patients). Another clinical utility issue warranting investigation is whether the association of Complex PTSD with BPD+SoD can be accounted for by Axis I or II comorbidity, given evidence of substantial comorbidity in both SoD (Lieb, Meinlschmidt, & Arava, 2007) and BPD (Yen et al., 2002; Zanarini et al., 2002).

Limitations

Limitations of the study include the use of a self-report version of the SIDES, rather than the interviewer version validated by Ford and Kidd (1998), reliance on clinician rather than research ratings of the diagnostic variables, use of retrospective self-report to assess trauma history, and inclusion of only two specific psychiatric diagnoses and the general class of severe affective/anxiety disorders as a focus. However, the study's strengths include a large sample with precisely documented index diagnoses, detailed (and reliable, when collateral confirmation was possible) assessment of childhood trauma history, and use of the SIDES to assess all Complex PTSD features. Future studies are needed to replicate these findings with alternative methodologies and samples with a variety of specific diagnoses that may be related to traumatic stress and that involve affective and somatic dysregulation (e.g., major depression) in order to determine both the specificity and generalizability of the present study's preliminary findings of a relationship between severe psychopathology (specifically BPD and BPD+SoD) and Complex PTSD.

CONCLUSION

Exposure to potentially traumatizing events was prevalent among psychiatric patients, particularly among patients diagnosed with BPD alone or comorbid BPD+SoD. Also, the present study's results indicate that a larger sub-group of psychiatric patients may meet criteria for the Complex PTSD/ DESNOS syndrome than was previously accounted for (i.e., 10-38%), particularly in the BPD+SoD sub-group. By including BPD, SoD, comorbid BPD+SoS and other psychiatric disorders in this study, Complex PTSD/ DESNOS could successfully be distuinguished from BPD.

Chapter six

The clinical assessment and treatment of trauma-related self- and affect dysregulation

Van Dijke, A. (2008). The clinical assessment and treatment of trauma-related self-and affect dysregulation. In A. Vingerhoets, I. Nyklicek, & J. Denollet (Eds.), *Emotion regulation: Conceptual and clinical issues* (pp. 150-169). New York: Springer.

ABSTRACT

In this chapter the concept of affect dysregulation was redefined. The relevance of clinical assessment and treatment of Self dysregulation and affect dysregulation in a psychiatric hospital was discussed. Next to having outlined the theoretical background and the rationale of our assessment procedures and treatment program, some typical cases were presented. The approach is characterized by its multidisciplinary background. Therapists of different disciplines collaborate in inpatient therapy sessions in order to assess signs and symptoms associated with affect dysregulation, more specific under- regulation and over-regulation of affect and treatment possibilities. The assessment program has been proven to be successful and helpful in indicating patients for treatment and in assessing treatment progress and treatment effect. Finally, an integrative psychotherapy program encompassing a multidisciplinary therapy program in clinic, day-clinic and outpatient setting was outlined.

...traumatized people are frequently misdiagnosed and mistreated in the mental health system. Because of the number and complexity of their symptoms, their treatment is often fragmented and incomplete. Because of their characteristic difficulties with close relationships, they are vulnerable to become re-victimized by caregivers. They may become engaged in ongoing, destructive interactions, in which the medical…system replicates the behavior of the abusive family. - Herman (1992a, p. 123)

INTRODUCTION

Exposure to extreme stressors affects people in many ways. It may have a strong negative impact on all levels of functioning: emotional, cognitive, behavioral, somatic, and characterological (Allen, 2001; Van der Kolk, McFarlane, & Weisaeth, 1996).

Despite a vast amount of literature on the aftermath of trauma, the long term sequelae of attachment trauma and the complexity of adaptation to attachment trauma are still to be elaborated on. Moreover, Van der Kolk (1996) concluded that one-to-one notions about causal relationships between reported trauma features and the presence of psychiatric disorders in adulthood are an oversimplification of the problem.

The aim of this chapter is to discuss the nature and significance of affect-dysregulation[2] in complex and chronic psychiatric patients. In addition, an experimental assessment and treatment protocol for Self- and affect dysregulation will be described for patients suffering from a combination of trauma related psychiatric disorders (mood disorders, anxiety disorders, (psycho)somatic disorders, somatoform disorders and personality disorders) and PTSD associated symptoms. Affect dysregulation is considered a characteristic feature in complex trauma related psychopathology as defined in "PTSD associated symptoms" also known as complex PTSD or DESNOS (Disorders of Extreme Stress Not Otherwise Specified, Herman, 1992b; e.g. Schore, 2002; Zlotnick, & Pearlstein, 1997). Especially in complex psychopathology patients, standard psychiatric classification and assessment procedures seem to be inadequate and treatment-as-usual or diagnosis-specific-treatment protocols seem to be ineffective.

The presented assessment and treatment protocol is not intended to be a "gold standard" but should rather be considered as "work in progress". The assessment protocol and treatment protocol encompass lessons learned from working with traumatized patients suffering from affect dysregulation, elaborations on theoretical perspectives, and implementations of research findings in Mental Health Hospital Delta Psychiatric Centre "De Waard", clinic for inpatient psychotherapy treatment and Altrecht "Eikenboom", centre for psychosomatic medicine. Patients come in on Sunday nights and leave on Friday afternoons. Weekends are spent in their home environments to enhance and maintain (family) relations.

The Theoretical and Clinical Relevance of Affect Dysregulation

According to Zajonc (1984), the initial processing of stimuli implies the appraisal of the affective tone of a stimulus as 'positive or negative', or 'safe or threatening'. This implies that affects are most important signals because they carry information about one's own reactions to life experiences. Affects are facts in the way, that they give and content information about one's own reaction in relation to the outer world and one's inner world (Schore, 2001a).

2 Despite similarities and differences "affect" and "emotion" are used as synonyms

In this way, they give meaning to one's experiences (McCullough, Kuhn, Andrews, Kaplan, Wolf, & Hurley, 2003).

Given the importance of affect in human functioning, one would expect affect to have been at the center of attention in therapy development and therapy-effect studies. However, in recent decades, most therapies and therapy-effect studies have been focused on cognitions and behavior/ avoidance. The importance of affect for patients' therapeutic changes had moved to the background.

Recently affect seems to receive more appropriate attention due to new developments in theory, assessment, and therapy (McCullough, et al., 2003). Given the close interconnections with cognition, affects are fundamental forces in the development and changes of the Self. Mikulincer, Shaver, & Pereg, (2003) come to the conclusion that since the publication of Bowlby's trilogy, Attachment and Loss (Bowlby, 1982/ 1969, 1973, 1980), it has been established that attachment theory has become one of the most important conceptual frameworks for understanding the development of the Self, maintaining proximity to significant others and maintaining intimate relations, and the process of affect regulation and Self regulation. According to McCullough, et al. (2003), profound and early affective experiences need to be taken into account when indicating psychotherapy. Working with strictly cognitive-behavioral techniques will not suffice in cases of complex trauma related psychopathology.

Despite the increasing interest in affect the importance of fully experiencing emotions in more complex psychopathology psychiatric patients remains unclear. Experiencing emotions, without being overwhelmed with emotions or being numbed, influences present and future behavior. The role of experiencing emotions while maintaining a sense of agency is to give meaning (Fonagy, Gergely, Jurist, & Target, 2002). It is of fully experiencing emotions that one wonders why situations give rise to emotions and that one re-evaluates his situation. It is this emotion driven re-evaluation of cognitions, behaviors and interactions (and not just through logic without reference to non- or pre-verbal information), which results in changes in the therapeutic process (McCullough, et al., 2003).

To experience emotions while maintaining a sense of agency, one needs to be able to regulate affect in different situations (Fonagy et al., 2002).

Development and Affect

Our cognitive, emotional, behavioral, and social development occurs in an interpersonal context (Bowlby, 1982/ 1969, 1973, 1980; Gillath, Bunge, Shaver, Wendelken, and Mikulincer, 2005; Schore, 2001a; Siegel, 1999). The expression of emotions is important in the interaction with (significant) others and for establishing and maintaining (emotional) contact or relationships with them. The benefits of expressing emotions for our mental and somatic well-being have been investigated in various ways and in various populations (e.g. Nyklíček, Temoshok, & Vingerhoets, 2004). Nevertheless, despite a vast amount of research, the precise significance of the (non) expression of emotions for psychiatric patients remains unclear.

However, it has been established that there is a relation between early adverse experiences and the development of affect dysregulation or cognitive-emotional dysfunctioning and that affect dysregulation is involved in the etiology of psychiatric pathology (Bradley, 2000; Schore, 2001b, 2002).

In order to learn and develop strategies to express and experience emotions adequately one needs to interact from the beginning in an attuned way with significant Others. In humans, the main significant Other is normally one's caregiver. This early process of interaction is well-known as attachment and it encompasses the development of social and emotional functioning. Particularly the process of interaction with the caregiver is critical for the healthy development of emotion recognition and expression of emotions.

Attachment stimulates the brain and thereby seems to improve the quality of the functions of the brain (Bateman & Fonagy, 2004; Siegel, 1999). Positive early human interactions appear to be crucial for the development of neural connections and neural networks necessary for adequate emotional information processing. Moreover, during the first years of life, psychophysiological homeostasis and hormone balance are established and attachment may be a main stimulating factor. These early developmental processes of the brain underline the importance of attachment and attuned emotional relationships. The ability to fully experience emotions implies adequate affect regulation. But, what if something went wrong in one's early social emotional development? What, if there was not a secure holding environment available? What, if one failed to develop a secure attachment with caregivers? What, if human connections were poor and the development of emotional information processing was disturbed? What, if patients suffer from affect dysregulation? How do we go from there?

Nature of Affect Dysregulation and the Emotional Reflective Function[3]

The concept of affect dysregulation has never been well defined and little research has focused on the nature of affect regulation and dysregulation (e.g. Zittel Conklin, Bradley, & Westen, 2006; Koenigsberg, Harvey, Mitropoulou, Schmeidler, New, Goodman, Silverman, Serby, Schopick, and Siever, 2002; Gross 1998, 1999). For some theorists, affect regulation denotes a process wherein the object of regulation is the affect itself.

For attachment theorists and psychodynamic theorists, the object of regulation is more complex: the regulation of affects is strongly linked to the regulation of the Self and the capacity to mentalize (Fonagy et al., 2002). Self regulation encompasses regulation of affect, soma, cognition, behavior and interaction (Van der Kolk, 1996). Mentalization is not just a cognitive concept, but a concept of the reflective function which encompasses cognitions, affects and behavior as in affective reciprocity. It requires the capacity to envision mental

3 Emotional Reflective Function is also called "Affective Mentalization", Reflective Function and Mentalization are used as synonyms

states in Self and Others. Mentalized affectivity is a sophisticated kind of affect regulation that denotes how affects are experienced through the lens of emotional Self-reflexitivity and can be enhanced in psychotherapy (Fonagy et al., 2002).

In the present contribution affect dysregulation encompasses: (1) The incapacity to regulate and modulate affective experience; this may keep the person unaware of the affective experience as either being numb of overwhelmed; (2) The incapacity to experience all aspects of affect, due to lack of the specific orienting information associated with each emotion; (3) The inadequate communication of emotion (due to being overwhelmed) or the non-expression or -experiencing of affect (numbness) which increases the likelihood that one's needs will not be responded to by others and therefore increases the likelihood of social isolation and/ or a pattern of quickly changing and emotionally instable social contacts (Gross, 1999).

Paivio & Laurent (2001) describe two distinct manifestations of affect dysregulation that are of practical relevance for psychodiagnostic assessment and psychotherapy. They make a distinction between *under-regulation of affect,* on the one hand, and *over- regulation of affect* or over control, on the other hand.

Vignet:

Diana, aged 36 years, was admitted to a Mental Hospital with various complaints: (1) being off and on depressed for several years, (2) accident-proneness (several incidents involving a recent severe car crash), (3) enmeshed and bad relationships over the years e.g. "forced" to prostitution, and (4) impulse control problems such as eating problems (lost 40 pounds of overweight in 2 years). She had engaged in several psychotherapies that seemed to work out for her, but as soon as she quitted therapy, the benefits seemed to vanish. In daily life situations she easily became very emotional over small things; it could take her over 24 hours to get over things. She was not able to sooth herself and instead she had to get drunk and to vomit severely in order to deal with her emotions. At other times she got so mad over small issues that she was not able to do what she planned to do. When in such a state, she had the strong urge to hurt someone and it took almost everything in her not to give in to that impulse, but rather to yell at someone close instead. Sometimes she acted really dangerously and hoped she would get hurt or killed while doing it.

Under-Regulation of Affect

Under-regulation of affect could be operationalized as being over-aroused and overwhelmed by emotion and not being able to modulate these emotions.

Patients manifesting under-regulation of affect may be characterized by either of the following: (1) Being overwhelmed by emotions; (2) Being over-aroused; (3) Having difficulty handling aggression; (4) Having difficulty handling self-destructive impulses; (5) Suicidal pre-occupation; (6) Sexual provoking behavior.

The above symptoms of under-regulation are characteristic of patients with borderline personality disorder (Linehan, 1993), PTSD and complex PTSD or DESNOS (Van der Kolk, et al., 1996; Wolfsdorf & Zlotnick, 2001; Zlotnick, Zakriski, Shea, Costello, Begin, Pearlstein, & Simpson, 1996; Ford, & Kidd, 1998; Pelcovitz, Van der Kolk, Roth, Mandel, & Resick, 1997; Roth, Newman, Pelcovitz, Van der Kolk, & Mandel, 1997).

Vignet:

Miranda, 33 years old, admitted at the Waard with dysthymic complaints, physical pains, and interpersonal problems with her family and colleagues. A remarkable feature was her severe nail biting and her frequent up and down pacing. In dealing with everyday problems she did not have any clue about her emotions, but she had headaches instead. Emotional experiencing seemed lacking, only cognitions and physical pains appeared to play a role in her life. During group therapy she did `not know what to tell about herself to group members, and stuck to factual information of her experiences. She rarely talked about relations between her behavior and emotions and she found it extremely difficult to elaborate on emotions when explicitly asked for. She often did not understand why people got so angry at her: "I did not do anything, what did you want from me?" After several weeks, group members and staff became frustrated with her.

Over-Regulation of Affect

Over-regulation of affect can be described as being afraid to feel or experience emotions. Krystal (1988) referred to this "affect phobia" as "affect intolerance"; the inability to tolerate or experience emotions. In an attempt to ward off the emotions and to protect oneself, the emotional system becomes numb.

Patients suffering from over-regulation may be characterized by the following features: (1) Being numb or inhibited; (2) Suffering from impairments in insight into emotions; (3) Having difficulty verbalizing emotions; and (4) Having difficulty analyzing emotions. These features form the core of the alexithymia concept (Taylor et al., 1997) and have already been described in patients with medically unexplained physical complaints (Kooiman, Bolk, Brand, Trijsburg, Rooijmans, 2000), with somatization disorder, chronic pain disorder, conversion and undifferentiated somatoform disorder.

Vignet:

Ann, aged 46 years old, was presented to the clinical psychotherapy department by her partner. She was diagnosed with dysthymic disorder, and complained of physical pains. The partner reported also interpersonal problems, in particular enmeshed (family) relations. Ann suffered from emotional numbness, lacked the capacity of empathy and her recognition of emotional facial expressions was poor. She had several quickly changing relationships that usually ended with fierce arguments. During group therapy she was unable to attune emotionally to others and showed little empathy towards others in emotional situations. She failed to understand what other people experienced and seemed to stick to externally oriented thinking. Others considered her as being blunt and confronting. She risks becoming the scapegoat in groups.

Affective Reciprocity

Reciprocity requires a finely tuned give-and-take between individuals. Senders must adjust their messages to what they infer to be the receivers' level of comprehension, while receivers must be able to grasp the message that has been sent. Affective reciprocity requires attuned empathy, the process by which a person responds affectively to another as if he or she were experiencing the same affect (Baron-Cohen, 1988).

For many psychiatric patients, it is difficult to recognize others' facial affective expressions accompanying the emotional experiences (Baron-Cohen, 1991, 1995; Baron-Cohen, Leslie & Frith, 1985). In addition, patients suffering from affect dysregulation have difficulty to analyze other people's emotions or to elaborate on them, as the emotional signals keep them pre-occupied with their own experiences of inhibition or hyperarousal. This leads to a disturbed interpersonal emotional functioning and diminished empathic functioning. They seem to have a diminished emotional "mindsight," a reduced ability to understand the content and function of other peoples' emotional mental life.

Fonagy and Target (1996) use the term Theory of Mind to refer to the capacity to understand mental states in the Self and Others. This capacity is deficient in patients whose parents lacked empathy and emotional responsiveness. Infants view their physical and social environment in terms of the Self, a phenomenon called egocentrism. Gradually, however, the developing child is able to view the environment from the perspective of Others, to see the world through other people's eyes. This ability also includes perspective taking and is crucial for the ability to communicate and engage in reciprocal social interactions (Wenar & Kerig, 2000).

Attachment trauma related Self regulation strategies

The clinical need to diagnose patients' affective styles makes especially sense when treating patients who failed to respond to regular treatment protocols, dropped out of these kinds of treatments, or who suffered from complex and recurrent psychopathology that current treatment protocols do not apply for. In this contribution affect dysregulation is not only considered a factor in the development of psychopathology; it is also considered to be an important factor in pertaining -, recidivist - or chronic psychopathology.

Elaborating on Mikulincers' attachment based hyperactivating and de-activating affect regulation strategies (Mikulincer et al., 2003), two distinct insecure attachment based Self regulation strategies are proposed: (A) De-activating Self Regulation Strategies and (B) Hyper-activating Self Regulation Strategies.

De-activating Self Regulation Strategies encompass: over regulation of affect, negative psychoform dissociation, negative somatoform dissociation, and a dismissing adult attachment style characterized by interpersonal avoidant& dismissing or avoidant & fearful behaviour, which in turn conditions and upholds the insecure attachment representation. Consequently leading to an "Insecure cognitive emotional information processing and insecure attachment based De-activating Self regulation strategies" vicious circle.

Hyper-activating Self Regulation Strategies encompass: under regulation of affect, positive psychoform dissociation, positive somatoform dissociation, and an anxious & preoccupied adult attachment style characterized by interpersonal clinging behavior, which in turn conditions and upholds the insecure attachment representation. Consequently leading to an "Insecure cognitive emotional information processing and insecure attachment based Hyper-activating Self regulation strategies" vicious circle.

Moreover, when confronted with internal or external adverse events, insecurely regulated persons will never meet the sense of personal efficacy, resilience, and optimism (Mikulincer & Shaver, 2004).

These insecure attachment based Self regulation strategies are an important factor in the explanation (1) why psychopathology and psychiatric disorders can develop and may become chronic, and (2) why current treatment protocols seem ineffective as they do not consider the impact of insecure cognitive emotional information processing and insecure attachment based Self regulation strategies.

Assessment and treatment of affect dysregulation as usual

Specific well-validated instruments to measure affect dysregulation as a specific syndrome are currently lacking. Anamnesis and hetero-anamnesis are useful when attempting to assess (changed) emotional behavior, but patients do not report this information easily. Often these disturbed patterns of affect regulation c. q. affective styles have been established early in life and consequently often mistaken as temperament or personality traits.

Frequently applied instruments for the assessment of affective pathology such as the Symptom Checklist (SCL-90-R; Derogatis (1994)) or the Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, (1979)) or the Positive And Negative Affect Scale (PANAS, Watson, Clark, & Tellegen (1988)) or the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch & Lushene (1970)) all fail to capture the regulatory aspects of emotional experiencing.

The concept of alexithymia can be measured with a well-validated self-report instrument: the Toronto Alexithymia Scale (TAS; Bagby, Parker & Taylor et al., 1994). However, this instrument measures only the cognitive aspects of emotional dysfunctioning. The concept of alexithymia and emotional functioning can be more fully measured with the Bermond-Vorst Alexithymia Questionnaire (BVAQ, Vorst & Bermond, 2001) and the EMOtional development Questionnaire (EMOQ, Vorst & Bermond, unpublished paper). These instruments measure the cognitive aspects of emotional dysfunctioning (alexithymia or over-regulation) and the emotional factors (impairments in emotionality and impairments in fantasizing) and social aspects (impairments in insight into other's emotions and impairments in analyzing other's emotions) of emotional (dys)functioning. Although these instruments make it possible to differentiate between subtypes of alexithymia, neither of these instruments neither do assess affect dysregulation as a two dimensional mechanism.

Currently most affect-focused therapies focus on just one form of affect dysregulation, in particular: under-regulation of affect. Examples are the Skills Training for Treating Borderline Personality Disorder (Linehan, 1993); Managing Intense Emotions and Overcoming Self-Destructive habits (Bell, 2003); Affect Management group therapy for PTSD (Wolfsdorf & Zlotnick, 2001); Sensimotor Therapy for Processing Traumatic Memory (Ogden, 2000). These treatment approaches focus mainly on handling affect and managing emotional behavior.

The aspect of over- regulation of affect or alexithymia is often under diagnosed or neglected. Moreover, specific treatment protocols for the treatment of affect dysregulation are scarce (Greenberg & Borger, 2001).

PRELIMINARY EXPERIENCES WITH ASSESSING AFFECT DYSREGULATION

Given the lack of adequate instruments to assess the nature of affect dysregulation, we have introduced a clinical observation period. The pure individual and "intrapsychic" view on psychopathology and Self- and affect regulation has been criticized for its neglect of the importance of social and environmental factors in the etiology and maintenance of psychopathology (e.g. Teasdale & Barnard, 1993). Elaborating on that critic, we emphasize the observation of the quantity and quality of interactions with the staff and other group members. The advantages of a clinical monitoring system for assessing emotional functioning involve a prolonged monitoring of emotional behavior in interpersonal situations. During a six-week period, emotional functioning is observed and assessed by a multidisciplinary

clinical team. Each discipline has developed its own emotional functioning assessment instrument, focusing on their specific target of emotional dysfunction (see Table 1).

Table 1: Multi-disciplinary therapy indication forms

DISCIPLINE	INSTRUMENT
SOCIO THERAPISTS	SOCIAL FUNCTIONING OBSERVATION FORM
PSYCHOMOTOR THERAPIST	"EMOTIONAL BODY" scale
MUSIC THERAPIST	MUSIC THERAPY EMOTION SCALE
CREATIVE THERAPIST	COLOR EMOTION OBSERVATION SCALE
PSYCHOTHERAPIST	EMOTIONAL FUNCTIONING & GROUP-PSYCHOTHERAPY INDICATION FORM

To capture the nature and scope of affect dysregulation, recent insights in the fields of affective neuroscience, attachment theory, and mother-infant interaction were integrated in an assessment procedure (e.g. Cassidy & Shaver, 1999; Griffin & Bartholomew, 1994a/1994b; Schore, 1994, 2001a, 2001b, 2002; Siegel, 1999; Solomon & Siegel, 2003).

The assessment procedure encompasses (1) a psychodiagnostic therapy-oriented assessment procedure (quantitative assessment), consisting of clinical structured interviews, self reports, and computerized cognitive-emotional information processing tasks (e.g. facial affect recognition; Ekman (2003)) as well as (2) a pre-therapy observation procedure (qualitative assessment), applying specific observation rating scales for each discipline (see Table 1). These rating scales are an attempt to give a more objective description of what, until now, has been a clinical impression based on findings during pre-therapy observation sessions. These rating scales reflect the collective sense of the different professions and they were constructed by collaborative actions (Smeijsters, 2005).

In the pre-therapy observation period information about intrapsychic and interpersonal functioning is obtained on three aspects of affective functioning: recognition, expression and experiencing of affects. Within the experience of affects the following three dimensions can be discerned and assessed: (1) Validation of emotions, ranging from comfortable (positive) to indifference or unwanted (negative); (2) Interpersonal affective behavior, all interpersonal actions between withdrawal and approach; and (3) Arousability and control concerning expressed emotions, the capacity to find a balance between control over emotional behavior and arousal/ excitement accompanying emotions. Below we elaborate on these dimensions.

(1) Validation of emotions

During patient-staff-meetings the staff can observe emotional expression, interpersonal emotional behavior and verbalized "hot cognitions" (Teasdale & Barnard, 1993) representing mood congruent memory and context-specific encoding and retrieval of autobiographical

events which are involved in coping with current personal problems and dealing with emotions in relation to other group members. During psychomotor therapy the physical manifestations of emotions during interpersonal encounters and the (in) ability to "read" these manifestations (recognition of affect) are the main focus of attention (Taylor, et al., 1997). This part of the assessment focuses on the ability to regulate the arousal levels and the ability to physically recuperate from emotions.

In addition, the ability to recognize the physical manifestations of emotions are evaluated (Rothschild, 2000). Patients are invited to experience links between these physical cues and specific emotion and/ or accompanying cognitions. Often patients are afraid to experience these physical manifestations of emotions, because they may be overwhelming. Instead, psychological defense mechanisms (e.g. numbing) and attachment based maladaptive affect regulatory mechanisms (e.g. dissociation) are activated.

During creative therapy the capacity of identifying emotions, differentiating between emotions, analyzing emotions and the capacity to express oneself in form and color is observed and explored. Moreover, a color calendar is drawn every week and analyzed by means of a color evaluation system. Each color stands for a particular emotion. This way through non-verbal cues patient's capacity to reflect on their emotions and autobiographical situations is assessed, while at the same time the capacity to identify emotions and differentiate between emotional states (Smeijsters, 2005) is assessed.

During psychotherapy sessions, the patient's capacity to integrate experiences and to verbalize emotions in relation to other group members' and/or shared experiences is assessed. To stimulate the process of validation of emotions, the focus is on interpersonal similarities and differentiation in affect regulation (Linehan, 1993). This way the quality of the process of mentalized affectivity, emotional reciprocity, and emotional Self-reflexitivity while maintaining a sense of agency is assessed.

Emotional reciprocity involves listening to other people's stories and being able to react empathically toward group members' experiences or "emotional blind sight". In addition, it may encompass sharing stories while experiencing the accompanying feelings without being overwhelmed or being numb in interaction with other group members. Emotional Self-reflexitivity includes for example putting emotional experiences in a time-perspective, what preceded and/or what caused the situation or feeling, how does it manifest itself to you, how do others comprehend this situation, and how do they react to the situation and/or how do they feel, and how do they relate to others in the situation, what are the consequences of all these aspects for the near future, and so on (Fonagy, et al., 2002).

(2) Interpersonal affective behavior

Psychotherapists assess adult attachment style as described by Griffin and Bartholomew (1994a; 1994b) and Bowlby (1988) by interpreting patient's interpersonal behavior in terms of secure or insecure attachment behavior. Attachment clinging behavior and attachment

avoidant behavior are typical examples of insecure attachment. This insecure attachment behavior, in combination with the patient's positive or negative verbalizations about the Self in relation to the Other helps unraveling the patient's core beliefs if "help" or "harm" can be expected from the Other in times of distress or danger. Attachment avoidance behavior is typically accompanied by "fear of closeness" and a "desire for independence", whereas attachment clinging behavior is associated with "fear of abandonment". In both cases there is a "lack of interpersonal trust" (Griffin & Bartholomew, 1994b).

The (inter)personal emotional functioning, is described on the basis of observation of the patient's capacity of affective reflective function, emotional perspective taking, and empathy (Fonagy, et al., 2002).

Maladaptive affective behavior (such as the incapacity in an interpersonal context to modulate and regulate emotions) is explained in terms of attachment based affect regulation strategies. These strategies encompass hyperactivating strategies or deactivating strategies of affect regulation, resulting in interpersonal withdrawal (avoidance) or approach (clinging) (Mikulincer, et al., 2003).

Concerning the relationship with other group members, patients are asked to reflect on the different positions they take in Leary's Rose of Interpersonal Functioning (Leary, 1957). On top of this the patients were asked to reflect on questions as: where do they fit in? Which group member can be of help in overcoming their difficulties? Which group member can be an obstacle in meeting therapy goals? How to cope with that? Etcetera. This interpersonal position awareness embraces the function of reflection, and affective mentalizing.

(3) Arousability and control over expressed emotions

In music therapy attention is directed towards the (in) capacity or blockage of the expression of emotions in vocal sounds, and/or by means of musical instruments. First, patients are invited to choose an ego-matching instrument and play it or make sounds, as in a small orchestra. The instruction is to start at the same moment and after about twenty minutes again to stop simultaneously. Next, patients are invited to switch instruments and choose the instrument with opposite or incompatible characteristics. Again, patients are invited to play the instruments or make sounds, as in a small orchestra and the instruction is repeated. Often, this second invitation is a difficult task to perform. Emotional blockages and incapacity to make sounds are common reactions for these patients (Smeijsters, 2005). It is often observed that their emotional behavior is fixated in one way of expressing emotions: (1) under regulation: hyper-activation of affect and emotions or (2) overregulation: de-activation of affect and emotions (Mikulincer, et al., 2003).

Sociotherapists observe the patients' affect regulation related behavior in between therapy sessions and during their everyday activities. They have access to information concerning daily pathological and normal behavior and interactions. Between therapies, they can observe the way patients try to regulate emotions by interpersonal withdrawal or approach,

attachment based affect regulation strategies (Mikulincer, et al., 2003). It is often observed that several behaviors, e.g., skating, engagement in computer games, cigarette smoking, and automutilation are meant as affect regulation strategies or mood management.

Finally, the patient's motivation for treatment and engagement is challenged and assessed. In order to improve compliance to psychotherapy, patients are asked to prepare their personal evaluation of the "pre-therapy/ Observation and Orientation period" at the Waard. Patients orient themselves in the way that they think inpatient therapy at this particular ward will be "of use" to them. Moreover, the patients have to write a "motivation-for-treatment" paper in order to be admitted in the clinic or day-clinic. Consequently, the patient is asked to write down realistic therapy goals that will be focussed on during psychotherapy and that are objective enough to evaluate therapy success with.

The (1) Validation of emotions, ranging from comfortable (positive) to indifference or unwanted (negative); (2) Interpersonal affective behavior, all interpersonal actions between withdrawal and approach; and (3) Arousability and control concerning expressed emotions, the capacity to find a balance between control over emotional behavior and arousal/ excitement accompanying emotions are integrated in a psychotherapy-oriented assessment procedure at the department of (neuro)psychological assessment for therapy indication at our clinical psychotherapy ward.

The DSM-IV-TR disorders are assessed using standardized clinical interviews; the Structured Clinical Interview for DSM IV axis I disorders (SCID-I; First, Spitzer, Gibbon, & Williams, 1997), and the International Personality Disorder Examination (IPDE, World Health Organization, 1993) for DSM-IV-TR axis II disorder.

In addition, a number of self-report measures are administered tapping signs and symptoms of Self dysregulation. These include the following:

Affect dysregulation and interpersonal emotional functioning is assessed by using the EMOtional functioning Questionnaire - 56 items (EMOQ-56; Vorst and Bermond, 2002) measuring the cognitive, affective and social aspects of emotional functioning, and the Dutch self report version of the Structured Interview for Disorders of Extreme Stress (SIDES-r- nl, Van Dijke & Van der Hart, 2002).

The concept of somatoform dissociation was measured by using the Somatoform Dissociation Questionnaire (SDQ-20, Nijenhuis, Spinhoven, Van Dyck, Van der Hart & Van der Linden, 1999) and the concept of psychoform dissociation was measured using the Dissociative Experiences Scale (DES, Bernstein & Putnam, 1986).

Interaction style was based on adult attachment styles using the Relationship Styles Questionnaire (RSQ, Griffin & Bartholomew, 1994a).

Traumatic events and their impact on current functioning was assessed using the Traumatic Events Checklist (TEC, Nijenhuis, Van der Hart & Kruger, 2002).

PRELIMINARY EXPERIENCES WITH THE AFFECT DYSREGULATION TREATMENT PROGRAM

The focus of the treatment program is aimed at changing affect regulation styles and adult attachment styles which negatively influence interaction with significant others. Characteristic for these complex pathology patients are the very different disorders on DSM-IV-TR axis I and axis II. Characteristic are the malign interpersonal patterns on DSM-IV-TR axis IV.

In order to do so we designed an in-patient program, followed by a 4-daytime or 3-daytime program, resulting in an out-patient group therapy program. All therapists working at "the Waard" are part of multi-disciplinary team, consisting of a psychiatrist, a clinical psychologist, psychotherapists, a music creative therapist, a psychomotor therapist, a creative therapist, a social worker, and ward nurses.

Characteristic for the therapeutic environment the patients live in, are clear therapy goals and boundaries, reflecting a balance between structure and flexibility. To stimulate meta-cognitive processing, keeping notes from therapeutic impressions and progression, and evaluating therapy process are important instruments.

Intensive in-patient therapy in groups seems to be the best fitting setting to learn from own observations of other patients, and learn how one's (emotional) actions elicit reactions in the others and vice versa (social learning). Moreover, information is provided about other people's emotional perspectives.

Important therapeutic techniques are psycho-education on affect regulation styles, modelling, and affect mirroring, "passing the silver butler tray" (to give meaning to behaviour and to suggest alternative thoughts and feelings; "I could imagine that you would not only feel mad about this but also disappointed or even sad"?) to facilitate new insights in a gentle way. The reflective function is stimulated by inviting the patients to actively mentalize one's own and the others' state of Mind and by (emotional) perspective taking. In the beginning of therapy, the therapist reflects more actively the patients' perspective.

An important technique is also the stop-rule. Affect regulative interventions concern both over-regulation as in: "stop thinking …. and focus on the emotion and experience your emotion instead!" and under-regulation as in: "stop acting ….and focus on the emotion and experience your emotion instead!"

Another important aspect of interventions is pointing out interpersonal misinterpretations based on insecure attachment cognitive emotional information processing e.g. "You think you have everything under control, but your mind tricks you! The therapist is reaching out to you, lending you a hand to help you….. instead you interpret this reaching out as if she was reaching for you, raising her hand with a knife in it, pointing at you! Where "help" is offered, you expect "harm"!"

The psychotherapist's style can best be characterized as active and interactive; he is supportive and not neutral towards the patients in complex interpersonal conflicts. Transference

and counter- transference are exploited in the sense that the therapist interprets and explains these interpersonal dynamics in terms of interpersonal or dyadic affect regulatory phenomena to the patients and the accompanying cognitions.

Before entering the program, information about the patient is gathered by means of our intake procedure. Information about previous therapies and therapy-effect or dropout, as well as about the quality of the therapeutic relation from previous therapists is collected after signed informed consent.

In the program the following phases can be distinguished:

Phase 1: Patients engage in a six week "Observation and Orientation" (O&O) period at our ward. They also take part in an extended assessment procedure.
The multi-disciplinary team members motivate patients to formulate therapy goals in terms of affect dysregulation (Paivio & Laurent, 2001), adult attachment style (Griffin, et al., 1994) and consequences for current interaction patterns (Leary, 1957). Through psycho-education, the concept of affect dysregulation is explained. Moreover, signs and symptoms of affect dysregulation specified in under regulation of affect and over regulation affect are elaborated on. The concept of affect dysregulation is focussed on as a provoking and /or maintenance factor in chronic and complex anxiety and/ or affective and/ or somatization disorders. Patients learn that "affect dysregulation is not a way of life" (Chefetz, 2000), but a syndrome that can be treated. Behaviours such as drug abuse, alcohol abuse, automutilation, engaging in unsafe sex etc. are considered as signs of malign affect dysregulation (Linehan, 1993).

At the end of this O&O period, the multi-disciplinary team, the patient, and a family member/ partner evaluate their experiences and findings during this O&O period. Together with the patient a conclusion is reached: staying for treatment or referral to another facility. Both parties make up a therapy contract and sign it.

Phase 2: During this first "therapy" phase patients join in the therapy groups they are assigned to. They are invited to explain their symptoms from an interpersonal developmental perspective and to share their (new) treatment goals with the group. In other words: they are verbalizing and explaining their personal therapy rationale to the other group members. All other group members also present and explain their therapy goals and describe their therapeutic developmental process and therapy progress. Group interactions in the here and now are elaborated on in terms of affect dysregulation, attachment representation, and adult attachment style. The motto "attachment is the dyadic interactive regulation of emotions..." is held (Sroufe, 1996). The therapist and group members each have their contribution to the Interpersonal Interpretative Function of group therapy (Fonagy, et al., 2002).

Phase 3: The focus is on recognizing and discerning one's own dysregulation of affect styles in different situations. Subsequently, they are thought to distinguish over-regulation and under- regulation of affects in Self and Others. By emotional perspective taking and shared mentalized affectivity (Fonagy, et al., 2002), knowledge about one's emotions and cognitions

can be improved. In order to understand themselves, patients learn to relate affect dysregulation styles to early adverse interpersonal experiences e.g. attachment trauma. Early adverse interpersonal experiences might explain why the dyadic relation with the attachment figure is frustrated and the Interpersonal Interpretative Function is ill developed (Fonagy et al., 2002), which results in the development of maladaptive cognitive-emotional information processing and maladaptive emotion regulation strategies. In the here and now through the dyadic relation with the therapist and triadic relation with the therapy group and the psychotherapist, the Interpersonal Interpretative Function might be re-established, resulting in improved cognitive-emotional information processing and improved emotion regulation strategies. Mindfulness based techniques are useful to accept recurrent feelings of rage and anger, and "to let the anger come and go", followed by new more adequate Self regulation behaviour (take a walk, listen to calming or playful music, etc). Mourning about missed feelings of love and secure attachment relationships earlier in life is addressed and processed.

Phase 4: After the mourning has been processed adequately, the focus is on the here and now. New perspectives are visualized and verbalized as metaphors. A self-regulation training based on affect tolerance is the new focus for therapy. When affect regulation and Self-regulation has improved, an exposure program to potentially affect dysregulative situations in and around the clinic is carried out. The aim is to engage in these situations, while maintaining the reflective function. Affect regulation is a process of crafting mental states in accordance with a sense of agency (Fonagy, et al., 2002). At the end of this phase patients should have found a new balance in affect regulation and interaction; they understand that affect dysregulation is indeed not a way of life: there is another way of living!

Phase 5: At this point, an evaluation of therapy process and progress of the patient is drawn up by the multi-disciplinary team (now using the multi-disciplinary therapy scales to monitor therapy progress and effect) and the fellow group members. A therapy effect assessment and a therapy-session with partner or parents is added, in an attempt to measure and objectivate therapy results in terms of therapy process and therapy progress. If improvement and therapy progress is clear and significant the treatment program has been successful and a referral to our day-time clinic or outpatient therapy is appropriate. When there is no significant improvement and therapy progress, losses are counted and it is evaluated what went wrong. Consequently, either the patient is referred to another clinic or the patient and the therapist formulate new therapy goals and therapy process is continued and re-evaluated after a month.

Phase 6: During outpatient therapy the focus is on reintegration in the patient's home environment. This phase seems easy but is actually very difficult. The more the patient spends time at home the more the home environment provides cues to relapse into old habits. The family and social network are not familiar with the new representation of the patient's Self and interact with the patient and appeal to the patient as if changes in personality have never occurred. So in order to stick to the new representation of the patient's Self, there is attention

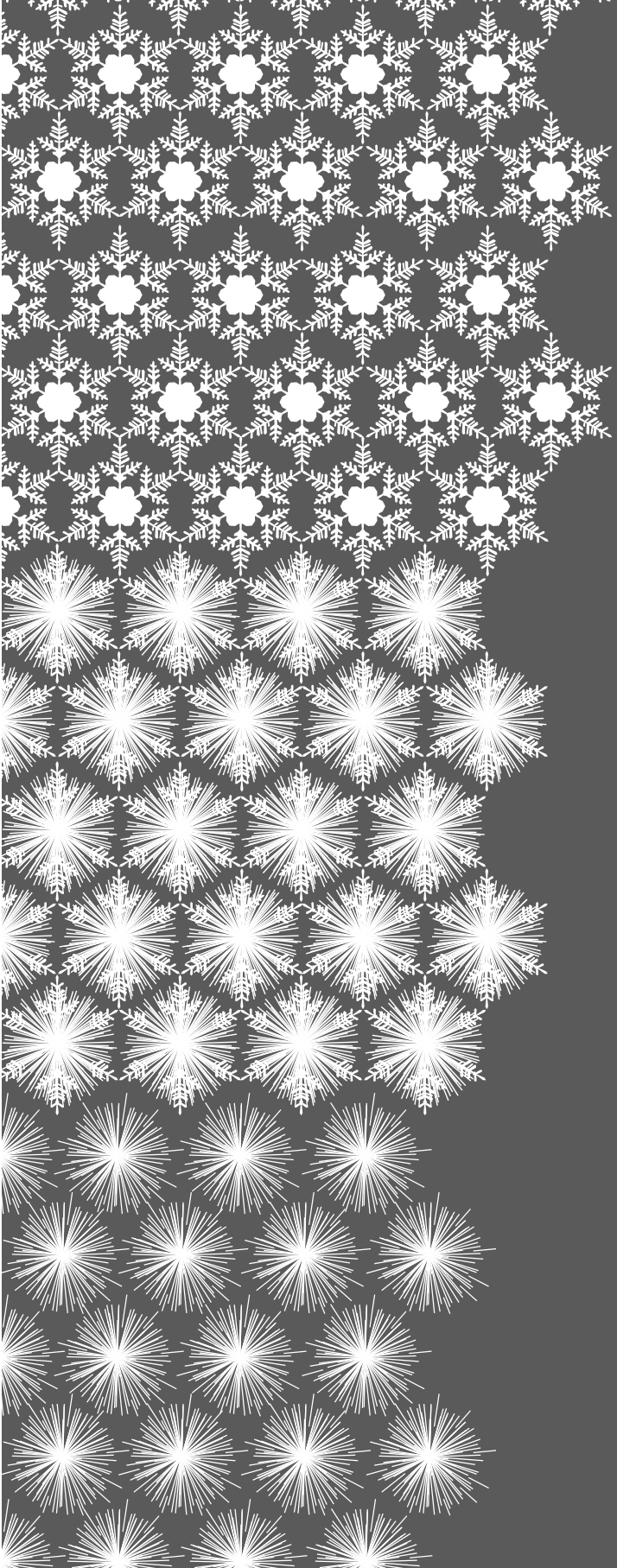
for the improvement of self-regulation by counter-conditioning old beliefs about the Self in relations to others. After new cognitions and new emotions have been integrated in the representation of the self, exposure therapy to potential affect dysregulative situations in the home environment takes place. The aim is to maintain the reflective function according to the new representation of the Self while experiencing a sense of agency. At the end of this phase, patients are supposed to be ready to "find a new way of life".

Phase 7: During this phase therapy process and progress is evaluated. A psychotherapy-effect-assessment takes place. Patients subsequently might be referred to either maintenance therapy or relapse prevention therapy. On top of that, patients are invited to maintain contact once a year to monitor affect regulation skills and to assess long term psychotherapy-effect.

CONCLUSION

In this contribution the concept of affect dysregulation was redefined. We discussed the relevance of clinical assessment and treatment of Self dysregulation and affect dysregulation in a psychiatric hospital. Next to having outlined the theoretical background and the rationale of our assessment procedures and treatment program, some typical cases were presented. Our approach is characterized by its multidisciplinary background. Therapists of different disciplines collaborate in inpatient therapy sessions in order to assess signs and symptoms associated with affect dysregulation, more specific under- regulation and over-regulation of affect and treatment possibilities. The assessment program has been proven to be successful and helpful in indicating patients for treatment and in assessing treatment progress and treatment effect. Finally, an integrative psychotherapy program encompassing a multidisciplinary therapy program in clinic, day-clinic and outpatient setting was outlined.[4]

4 The author wishes to acknowledge the multi-disciplinary team from "de Waard" centre for multi-disciplinary inpatient psychotherapy at Delta Psychiatric Hospital/ Poortugaal/ the Netherlands, in particular Annelies Plekker, M.Sc., Sandra Visser and "Eikenboom" centre for psychosomatic medicine at Altrecht Mental Health/ Zeist/ the Netherlands, in particular Martina Bühring, M.D. PhD., for their collaboration and contributions in the development of the presented assessment and treatment procedure and Prof. dr. Ad Vingerhoets, University of Tilburg/ Tilburg/ the Netherlands for reviewing a previous version of this contribution.



Chapter seven

Discussion

SUPPORT FOR DIFFERENTIATING DYSFUNCTIONAL UNDER- AND OVER-REGULATION

When combining the results from all the studies included in this thesis, several conclusions can be drawn. The first conclusion that can be drawn is that under- and over-regulation of affect proved related but largely different phenomena, as hypothesized. Moreover, three different forms of dysfunctional self and affect regulation can be empirically identified: dysfunctional Inhibitory, Excitatory, and combined Inhibitory & Excitatory (IE) regulation. However, the support for excitatory and combined IE-regulation is stronger than the support for inhibitory regulation. Secondly, there is a wide range of intensity of both positive and negative somatoform and psychoform dissociative phenomena (self-dysregulation) and of under- and over-regulation of affect, which were differentially distributed across diagnostic groups. While under-regulation is moderate to strongly related to positive and negative psychoform and somatoform dissociation, over-regulation is weakly related to positive and negative psychoform and somatoform dissociation. However, over-regulation of affect and negative psychoform dissociation, commonly occurring in somatoform disorder (SoD), can be understood as inhibitory regulation. And under-regulation of affect and positive psychoform dissociation, commonly occurring in borderline personality disorder (BPD), can be understood as excitatory regulation. Combined dysfunctional IE regulation, commonly occurred in comorbid BPD+SoD. Thus, assessment of positive and negative somatoform and psychoform dissociative symptoms and over-regulation and under-regulation of affect may have utility in characterizing clinical and phenomenological features of BPD, SoD, and other psychiatric disorders (PC; psychiatric comparisons).

Thirdly, although no disorder-specific form of dysfunctional affect regulation or dissociation was found, patients diagnosed with BPD and BPD+SoD reported more severely dysfunctional self and affect regulation when compared to SoD and PC patients. When SoD patients reported dysfunctional self and affect regulation, inhibitory regulation was prominently reported, but mostly at subclinical levels. Thus, while clinically significant under-regulation and combined dysfunctional IE-regulation were associated, respectively, with BPD and BPD+SoD as hypothesized, dysfunctional affect regulation (specifically over-regulation) may be less prominent as a clinical characteristic of SoD than prior studies have suggested.

THE ROLE OF CHILDHOOD TRAUMA-BY-PRIMARY CAREGIVER AND COMPLEX PTSD

The fourth conclusion based on the findings in these studies is that childhood trauma-by-primary-caretaker is highly prevalent among psychiatric patients, particularly those diagnosed

with BPD, and that childhood trauma-by-primary-caretaker is differentially associated with under- and over-regulation of affect depending on the type and developmental epoch of the traumatization. Trauma involving violations of bodily integrity was associated with more severe over-regulation of affect independently of in which developmental epoch this caregiver-caused trauma occurred. Emotional abuse or neglect by caregivers was associated with more severe under-regulation of affect when this caregiver-caused trauma occurred in early childhood (ages 0-6 years old). Thus, childhood traumatic experiences with primary caregivers may play a role in both over- and under-regulation of affect in psychiatrically-impaired adults.

The fifth conclusion that can be drawn is that CPTSD can be distinguished from BPD and/or SoD. Almost a quarter of all participating patients met criteria for CPTSD. Symptoms of CPTSD were significantly and differentially distributed across diagnostic groups. Patients diagnosed with comorbid BPD+SoD most frequently (almost 40%) met criteria for CPTSD, while also reporting the most extensive trauma histories. BPD and BPD+SoD patients reported similar CPTSD symptoms, except for subscale 'alterations in one's system of meaning,' where BPD patients report the highest mean score, and subscale 'total somatic complaints,' where BPD+SoD patients report the highest mean score. Thus, although a prior report with a smaller clinical sample of women diagnosed with BPD reported that CPTSD was present in all cases (McLean & Gallop, 2003), by including patients of both genders and other diagnoses as well as BPD, the present study demonstrated that CPTSD is not exclusively or always found with (and therefore not synonymous with) BPD.

For a subsample of patients meeting diagnostic criteria for comorbid PTSD, interestingly, *over-regulation* of affect was significantly related to PTSD-symptom severity, but no significant associations for under-regulation of affect, developmental epochs or trauma-by-primary-caretaker with PTSD-symptoms severity were found. Thus, based upon different patterns of affect dysregulation, it appears that CPTSD may be differentiated from PTSD, as well as from BPD and SoD.

Taken all together, the results of this study suggest that further clinical and research studies are needed in order to further the development of empirically-based clinical assessment and treatment protocols for trauma-related self and affect dysregulation in adults with a range of Axis I and II psychiatric disorders, as described in Chapter 6. Disorder-specific assessment and treatment methods and guidelines for SoD and severe affective, anxiety, and psychotic disorders, and for BPD thus may be enhanced by the addition of approaches focused on the types of dysfunctional affect- and self regulation that were identified and examined in the present studies.

STUDY LIMITATIONS

A primary limitation of the study is that dysfunctional affect regulation, dissociation, CPTSD, PTSD, and trauma history were all assessed using self-reports. Data were obtained from a psychiatric population consisting of clinically admitted psychiatric patients with persistent psychopathology. Self-reports, especially retrospectively self-reported types and times of exposure to potentially traumatizing events and CPTSD symptoms, may be inaccurate under these circumstances, due to the potential influence of current symptom severity. However, psychopathology does not necessarily equate with inaccuracy of trauma memory reporting (Klewchuk, McCusker, Mulholland, & Shannon, 2007). In this thesis, to overcome this limitation, trauma histories were checked with close-relatives with patients consent, but a longitudinal study following children with objectivated childhood trauma, could contribute to the furthering of our understanding and knowledge of developmental pathways to dysfunctional regulation and the development of mental disorders across the lifespan. Other data sources such as collateral (e.g., family member) reports, psycho-physiological measures, imaging methods, or biological markers may contribute to the furthering of understanding dysfunctional regulation in psychiatric patients.

When using self-report measures it may be that the diminished capacity to self-reflect (often observed in psychiatric patients) resulted in decreased scores on and interrelations within inhibitory regulation (over-regulation and negative dissociative experiences). In particular, at the beginning of treatment patients diagnosed with SoD or BPD+SoD often have impairments in self-reflection and tend to attribute psychological distress to physical complaints. Therefore, clinical observations, hetero-anamnesis/family reports, or (semi) structured interviews that assess all presentations of dysfunctional regulation (both affect dysregulation and dissociation) could provide complementary information on inhibitory regulation.

Trauma history self-reporting may be hampered due to a psychological defense against remembering *early* childhood trauma-by-a-primary-caretaker and holding on to a "belief in a just world" (e.g., Herman, 1992). Nevertheless, efforts were made (with patient consent) to confirm the reported traumatic events with close relatives. Overall, participants who did report early trauma-by-primary-caretaker experiences found it difficult to do so. There might have been more under-reporting than over-reporting of these events due to the emotions that were evoked and the difficulty in handling these emotions and cognitions.

Almost 20% of the BPD and BPD+SoD patients reported both clinically significant psychoform and somatoform dissociation and may have had a comorbid dissociative disorder (Nijenhuis, 2004). The addition of a structured clinical diagnostic interview for the DSM-IV dissociative disorders, which was not included in the study in order to minimize participant burden, could be informative for the BPD and BPD+SoD patients who reported both clinically significant psychoform and somatoform dissociation to objectivate whether these

patients have reports of dissociation that also meet criteria for a dissociative disorder. In the future, the option of assessing for dissociative disorders should be included in the protocol.

ADDITIONAL SUPPORT FOR DIFFERENTIATING DYSFUNCTIONAL REGULATION AND THE CLINICAL ASSESSMENT AND TREATMENT OF TRAUMA-RELATED SELF AND AFFECT DYSREGULATION PROTOCOL.

The scope of this thesis was restricted to the exploration of the interrelations between affective, cognitive, and somatic functioning for dysfunctional regulation. However, the main findings of the thesis may be supported by studies not included in this thesis that focused on the relationship of diagnostic status and affect dysregulation to facial affect labeling, adult attachment fears, and executive functioning (see Figure 1).

Internalized histories of chronic trauma-by-primary-caretaker during childhood (insecure attachment representations or working models) are hypothesized to (negatively) bias cognitive-emotional information processing (Van Harmelen, et al., 2010), especially in an interpersonal context. As a result, potentially neutral situations (see Figure 1: insecure cognitive-emotional-information processing) are evaluated as threatening. This negatively biased cognitive-emotional information processing was assessed by testing the ability to decode emotional information from facial expressions which plays an important role in conveying negative or positive feelings, and approach or avoidance action tendencies. Facial affect labeling, in contrast to affect matching or discrimination adds a verbal component and requires categorization by giving meaning to visual stimuli. This categorization enhances assessment of type of errors made for facial affect labeling accuracy for faces displaying a happy, angry, fearful or neutral expression. Preliminary results from ongoing research (Van Dijke, Van 't Wout, Ford, & Aleman, under review) suggest that the hypothesis of biased cognitive-emotional information processing, particularly in an interpersonal context may be accepted. In BPD patients facial affect labeling is more impaired than in SoD patients. Error pattern analyses showed that neutral faces were most often mislabeled as happy and least as fearful faces. However, BPD patients mistook neutral for fearful faces Results seem to support that BPD patients, more than SoD patients, give meaning to neutral faces by projection of insecure attachment-based negative affect. Difficulties facial affect labeling may be related to childhood adversities, and insecure attachment that interfered with normal cognitive-emotional development.

Also, internalized histories of chronic trauma-by-primary-caretaker during childhood (insecure attachment representations or working models) are hypothesized to not only negatively bias cognitive-emotional information processing, especially in an interpersonal context, but also activate dysfunctional regulation including interpersonal strategies related to fear of being close to someone, and fear of being abandoned by someone. Experiences

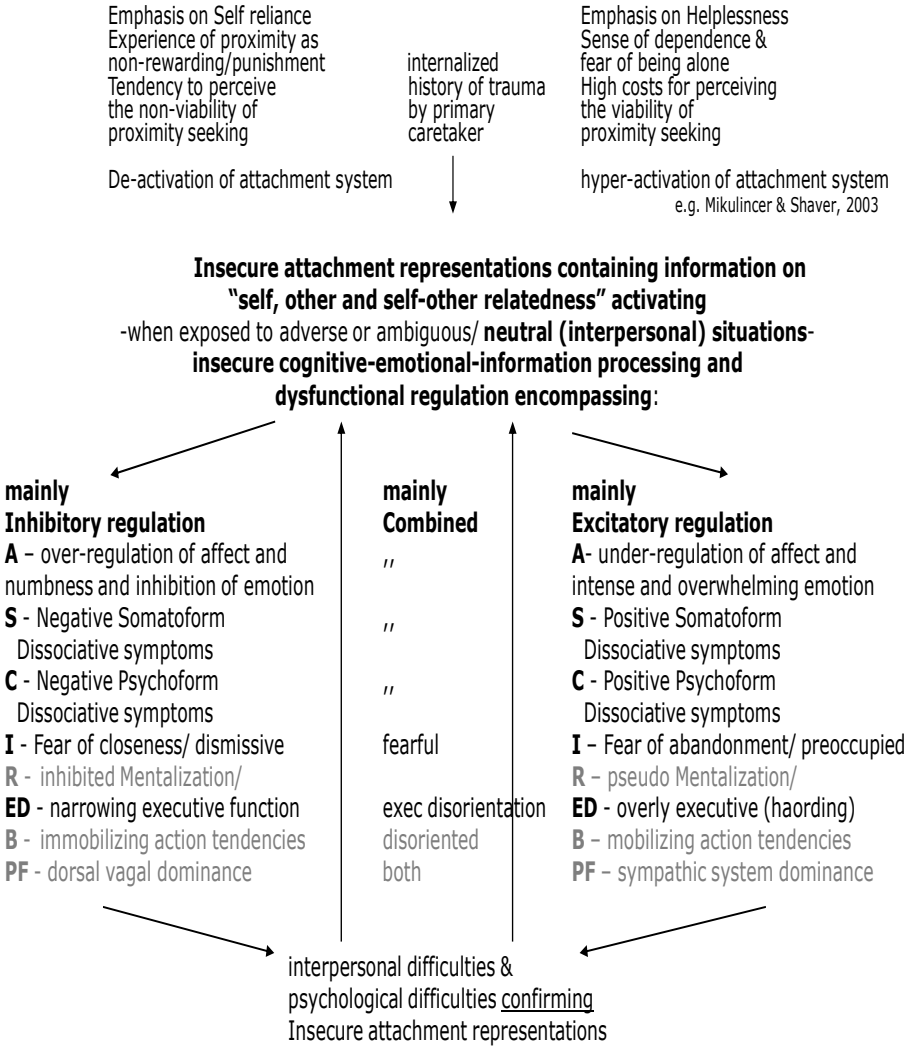


Figure 1. Dysfunctional Regulation Operating in Vicious Cycles
NB**: A**=affect; **S**=soma; **C**=cognition; **I**=interaction; **R**=reflective function; **ED**=exec dysfunction; **B**=behavior; **PF**= psycho-physiological; lines in lightprint are not included in the thesis

associated with proximity to the attachment figure as non-rewarding or punitive, are associated with a de-activation of the attachment system and fear of closeness in combination with inhibited affect (inhibitory regulation; see Figure 1) in the here and now, whereas experiences associated with sense of dependence and fear of being alone, are associated with hyper-activation of the attachment system and fear of abandonment and aroused affect (excitatory regulation; see Figure 1). Potentially leading to interpersonal difficulties that confirm and uphold insecure attachment representations/ working models and negative biased

cognitive-emotional information processing (vicious cycle; see Figure1). The preliminary results from this ongoing research (Van Dijke, Ford, Van der Hart, Van Son, Van der Heijden, & Bühring, under review) seem to support the main findings of this thesis: Under-regulation of affect was moderately related to fear of abandonment but weakly related to fear of closeness. While, over-regulation of affect was moderately related to fear of closeness but not to fear of abandonment. BPD was associated with under-regulation of affect and fear of abandonment. SoD was associated with inhibition or denial of fears of abandonment or closeness, and over-regulation of affect. Comorbid BPD+SoD was associated with under-regulation of affect, and *both* fear of abandonment and fear of closeness, that may reflect a pattern of disorganized/ disoriented adult attachment.

Chronic trauma-by-primary-caretaker makes children vulnerable for interference of normal neuro-developmental trajectories (e.g., Courtois & Ford, 2009; Lynch, et. Al., 2006; Minzenberg, Poole, & Vinogradov, 2008). Dysregulated information processing interferes with regular multisensory integration and interplay between remote but interconnected regions of the human brain (Driver, Blankenburg, Bestmann, & Ruff, 2010). Compromised executive dysfunction is understood to refer to a constellation of neurobehavioral deficits, arising from disruption to the higher-order cognitive processes required to initiate, plan, execute, and monitor complex goal-directed activities (Bennett, Ong, & Ponsford, 2005). Affect dysregulation (Barkley, 2001), dissociation (Aikins, & Ray, 2001; Amrhein, Hengmith, Maragkos, & Hennig-Fast, 2008), complex trauma (Gabowitz, Zucker, Cook, 2008), and insecure attachment (Ford, 2005) have been associated with compromised executive functioning (see Figure 1). The findings from ongoing research (Van Dijke, Ford, Egger, under review) focusing on interrelations between two forms of dysfunctional affect regulation, positive and negative psychoform and somatoform dissociation with inhibitory and excitatory symptoms of compromised executive functioning also seem to support the main findings of this thesis. Both inhibitory and excitatory symptoms of compromised executive functioning were moderately associated with positive and negative psychoform and somatoform dissociation, but only with over-regulation of affect. Inhibitory symptoms of compromised executive functioning were also moderately associated with fear of closeness, but weakly associated with under-regulation of affect and not to fear of abandonment. Excitatory symptoms of compromised executive functioning were also moderately associated with under-regulation of affect and fear of abandonment but not to fear of closeness.

IMPLICATIONS FOR CLINICAL PRACTICE

Although all patients reported some symptoms of dysfunctional regulation, clinical levels of under- and over-regulation of affect, psychoform and somatoform dissociation were not present in *all* BPD or SoD patients. Therefore, it is of practical relevance to assess presence,

nature and severity of dysfunctional affect and self-regulation in BPD and/or SoD patients. Fewer than one in three patients reports experiencing IE-regulation, suggesting that this form of dysfunctional regulation does occur but is not typical in patients with BPD and/ or SoD. However, in order to self-report symptoms of dysfunctional regulation such as inhibitory regulation, patients must be aware of their psychological burden and be somewhat "psychologically minded." When dysfunctional regulation is apparently not present, patients (e.g. SoD patients) may be mainly bodily focused or present with a cognitive style described as "operative thinking." Thus, clinicians and researchers should be alert for signs of the patient's unawareness of inhibitory regulation. Multi-informants reports, non-verbal assessment, or projective assessment techniques may be useful aids to assess inhibitory regulation.

Comorbid SoD in BPD patients or comorbid BPD in SoD patients seem to represent more complex symptom presentations than just comorbidity of two mental disorders. In addition to meeting diagnostic criteria for both mental disorders, these patients also reported more and differential dysfunctional regulation symptoms, more extensive trauma histories, and more often met criteria for CPTSD. Based on the main findings of this thesis, it seems warranted to thoroughly assess dysfunctional regulation, CPTSD-symptoms, and dissociative disorders when patients are characterized by BPD+SoD comorbidity. Also, as outlined in chapter 6, treatment guidelines are needed for the large sub-group of such individuals with severe comorbiditywho have experienced trauma-by-primary-caretaker and present with complex traumatic stress symptoms in addition to the symptoms of BPD and SoD (Courtois & Ford, 2009).

Although BPD, especially when comorbid with SoD, resembles CPTSD, the findings of this thesis warrant explicit assessment for CPTSD and the addition of a more trauma-focused approach. Also, for PTSD and CPTSD patients reporting difficulties with addressing and analyzing emotions or "mentalizing emotions" and negative dissociative symptoms (Fonagy, Gergely, Jurist, & Target, 2002), inhibitory regulation seem to have been overlooked and may be of particular importance in the assessment and treatment of chronic childhood trauma-related pathology such as comorbid BPD+SoD or Complex PTSD (Ford, 2005; Lanius et al., 2010).

Approaches to dysfunctional regulation have been developed for patients with severe mental disorders (adults; Wolfsdorf & Zlotnick, 2001; youth; Ford & Russo, 2006; Ford, et al., 2007), including Dialectical Behavior Therapy (Linehan et al., 2006), Transference Focused Psychotherapy (Levy et al., 2006), and Mentalization Based Treatment (Bateman & Fonagy, 2008). However, these treatments address under-regulation of affect more explicitly than over-regulation of affect. For BPD patients, especially when also diagnosed with comorbid SoD or clinically significant somatoform symptoms, as well as for PTSD, and CPTSD patients, the main findings of this thesis warrant additive assessment and treatment of over-regulation of affect and negative dissociative symptoms e.g., as was outlined chapter 6 of this thesis: The clinical assessment and treatment of trauma-related self and affect

dysregulation. For patients who report inhibitory regulation therapy forms like sensory-motor therapy (Ogden, Minton, & Pain, 2006), accelerated experiential-dynamic psychotherapy (Fosha, 2003; Fosha, Paivio, Gleiser, & Ford, 2009), emotion-focused therapy for trauma (Greenberg & Bolger, 2001;Paivio & Pascual-Leone, 2010), and Attachment, Self-Regulation and Competency (ARC; Kinniburgh, Blaustein, Spinazzola & van der Kolk 2005) could contribute to the experiential process of emotional awareness and emotional growth. Even a more technical-emotional approach, such as facial affect recognition skills training (Ekman, 2003), or virtual-reality social-emotional skills training and perspective taking (Blackmore, 2010), neurofeedback and (emotional) regulation exercises like yoga (Van der Kolk, 2006), could facilitate functional regulation and enhance therapy process and progress.

For patients with histories of trauma-by-primary-caretaker and mental disorders like CPTSD, Dissociative Disorder, Dissociative Disorder Not Otherwise Specified there seems to exist some clinical consensus that phase-oriented treatment is necessary for these patients. Phase-oriented therapy can be divided into three phases: phase 1, stabilization, symptom reduction, and skills training; phase 2: the integration (or processing) of traumatic memories; and phase 3: personality (re)integration and rehabilitation (e.g., Brown, Scheflin, & Hammond, 1998; Courtois & Ford, 2009; Herman, 1992; Van der Hart, Nijenhuis, & Steele, 2006). If emotion-addressing therapy and emotion–skills training are implemented in treatment phase 1 (stabilization, symptom reduction, and skills training), addressing inhibitory regulation may even facilitate trauma-focused therapy (treatment phase 2).

IMPLICATIONS FOR RESEARCH

Based on the main findings of the thesis, further research regarding the differentiation of dysfunctional regulation is warranted. However, no specific measure (e.g., interview, self- or hetero-report, task) is yet available that assess both inhibitory and excitatory regulation across several domains of functioning including affective, cognitive, somatic, relational, reflective, executive, behavioral, and psycho-physiological functioning. In future such a clinical intrument and/ or battery of associated neuro-psychological-tasks should be developed and validated.

Focusing on biological and psycho-physiological aspects of regulation and dysregulation was not included in the scope of the thesis but in future should embrace the differentiation of dysfunctional regulation (see Figure 1). Globally, it has been established that chronic childhood trauma often is polymorph, especially when this occurs in the first-family environment and/or when a caretaker is involved. And that chronic childhood trauma disrupts the normal developmental trajectories and has enduring effects on neurobiology. Also, that early developmental epochs are more vulnerable to the development of enduring dysfunctional affect regulation and dissociation compared to potentially traumatizing events later in

life. However, these studies did not systematically differentiate three forms of dysfunctional regulation, nor included multiple symptoms of dysfunctional regulation, and only Teicher's (2006) study differentiated developmental epochs vulnerable for the development of self- and affect regulation.

Lanius and colleagues (2010) in their recent neuro-imaging study found support for the presence of under-regulation and over-regulation in PTSD patients. However, in contrast to differentiating positive and negative psychoform and somatoform dissociative symptoms in this thesis, they did not and concluded that over-regulation was dissociative, thereby acknowledging only negative dissociative phenomena to be dissociative. Intrusive PTSD symptoms that some authors regard as positive dissociative symptoms (e.g., Van der Hart et al., 2006; also the DSM-IV speaks of "dissociative flashback episodes" as one of PTSD's symptoms; APA, 2004) were believed not to be dissociative but merely PTSD-criteria. Furthermore, they proposed the dissociative sub-type of PTSD. However, based on the main findings of this thesis, it may be concluded that although under- and over-regulation are related to psychoform and somatoform dissociative symptoms, they are largely different kinds/types of phenomena. Also, based on this thesis' main findings it may be concluded that dissociation does not just pertain to negative dissociative symptoms, but also to positive dissociative symptoms. It may well be that Lanius over-generalized the findings to be dissociative. Future imaging research should include differentiating dysfunctional regulation across several domains of functioning including affective, cognitive, somatic, relational, reflective, executive, behavioral, and psycho-physiological functioning.

The complex of dysfunctional self-regulation symptoms and associated scope of clinical presentations, that can vary across the lifespan, make patients vulnerable for being misdiagnosed (i.e., high co-morbidities on all DSM-axes), and mistreated or fragmented treatment in the mental health system. Longitudinal study of children with objectivated trauma-histories on the developmental pathways and differentiating dysfunctional regulation across several domains of functioning including affective, cognitive, somatic, relational, reflective, executive, behavioral, and psycho-physiological functioning could further increase our knowledge about trajectories of developmental injuries and differentially clinical presentations across the lifespan. This could particularly focus on parts of inhibitory and excitatory regulation that were not included in the scope of the thisis: the development of mentalizing capacities, the development of sensorimotor awareness and capacities, and the development of hormonal homeostasis and balancing.

Based on the main findings of this study, it may be concluded that three qualitatively different forms of dysfunctional regulation do exist. Patients are able to distinguish between under- and over-regulation of affect as well ass positive and negative psychoform and somatoform dissociative symptoms. However, neither the interview (SIDES) nor the self-report for CPTSD (SIDES-SR) incorporated this differentiation for inhibitory and excitatory regulation. Recently, an interview for Developmental Trauma Disorder (DTD; van der

Kolk, 2005) for children and adults has been developed (Ford, personal communication). Consistent with the findings of this study, this interview does incorporate symptoms that differentiate inhibitory and excitatory regulation as well as psychoform and somatoform dissociation. Therefore, future research should focus on tests of criterion and convergent and discriminant validity of the interview in relation to children's self-reported, and parent-, teacher-, and observer-rated inhibitory, excitatory, and combined IE regulation. Based on the results of those studies and the main findings from this thesis, adaptation of the adult CPTSD- interview and -self-report measures should be considered in order to systematically incorporate the assessment of the different forms of affect and self-regulation..

CONCLUSION

Finally, when returning to figure 1 and the aims of the thesis, we can conclude based upon the main findings of this thesis and related performed studies that support was found for the existence of inhibitory-, excitatory- and combined IE-regulation. Dysfunctional inhibitory, excitatory, and combined IE-regulation in patients diagnosed with BPD, SoD, comorbid BPD+SoD and PC was found across several domains of functioning i.e. affective, cognitive, somatic, relational, and executive functioning.

Dysfunctional regulation seems related to trauma-by-primary-caretaker: Inhibitory regulation is associated with physical trauma, and Excitatory regulation is associated with emotional trauma especially when first occurring in the developmental epoch 0-6 years. CPTSD is common in patients diagnosed with mental disorders, especially when diagnosed with BPD-alone or comorbid with SoD. CPTSD can be differentiated from BPD and BPD+SOD.

Thus, the development of a tailor-made assessment and treatment protocol is warranted for patients with treatment-as-usual-resistant complex symptom presentation reporting potentially traumatizing events by-primary-caregiver as outlined in chapter six: The clinical assessment and treatment of trauma-related self and affect dysregulation.

Summary

SUMMARY

The aim of the thesis was to provide a systematic exploration of the nature and distribution of dysfunctional affect regulation, its associated phenomena, and retrospectively reported potentially traumatizing events in patients diagnosed with borderline personality disorder (BPD), somatoform disorder (SoD), comorbid BPD+SoD, and a psychiatric comparison group (PC) to provide a baseline against which to compare the hypothesized elevations in dysfunctional self and affect regulation.

Despite a vast amount of research on the benefits of successfully regulating affect for our mental well-being, the role of dysfunctional affect regulation for psychiatric patients remains unclear. However, it has been established that affect dysregulation is involved in the etiology of psychopathology and that dysfunctional regulation is often described in patients with complex psychopathology and mental disorders.

Dysfunctional affect regulation typically seems to involve an interpersonal context and attachment theory has become a prominent conceptual framework for understanding the process of development of affect regulation and dysregulation. Whereas some patients react to adversities with inhibited experiencing and social withdrawal, others react hyper-emotionally and tend to cling to a significant other to alleviate stress and regulate to baseline. Van Dijke (2008) described dysfunctional self and affect regulation as operating in vicious cycles that approach the long-term sequelae of trauma-by-primary-caretaker from a developmental perspective. Dysfunctional regulation may present in patients in three qualitatively different forms: Inhibitory-, Excitatory-, and combined Inhibitory & Excitatory (IE)-regulation. Symptoms include disturbances in self-regulation across several domains of functioning including affective, cognitive, somatic, relational, reflective, executive, behavioral, and psycho-physiological functioning. Activation of dysfunctional regulation seems to follow trauma-by-primary-caretaker associated negatively biased cognitive-emotional information processing. However, when potentially neutral situations are processed and evaluated as threatening or potentially harmful, dysfunctional regulation is activated false positively. Consequently, this may result in interpersonal misunderstanding and disappointments, which in turn condition and uphold the insecure attachment representation/ working models eventually turning into dysfunctional regulation vicious circles.

The focus of the thesis will be on dysfunctional regulation domains affect, cognition and soma, the relations with potentially traumatizing events-by-the-primary-caretaker while differentiating developmental epochs, and the distribution of complex PTSD associated symptoms in our study groups.

Two mental disorders that have been associated with dysfunctional affect regulation are BPD and SoD. The BPD literature mainly considers dysfunctional affect regulation to be a deficiency in the capacity to modulate negative affect such that emotions become uncontrolled, expressed in intense and unmodified forms, and overwhelm reasoning:

under-regulation of affect. While, the SoD literature considers affect dysregulation to be an inhibition of emotional awareness, and diminished capacities to recognize and articulate affects: over-regulation of affect. Furthermore, despite apparent similarities between affect dysregulation and dissociation, surprisingly little is known about the specific interrelations between the two psychopathological phenomena. Both affect dysregulation and dissociation involve distinct mental states[5], representing inhibitory and excitatory experiencing. Mental states associated with inhibited experiencing are consistent with over-regulation of affect and with the negative psychoform and somatoform dissociative symptoms, including appearing emotionally constricted, expressionless, machine-like, and frozen. Mental states associated with excitatory experiencing are consistent with under-regulation of affect and with the positive psychoform and somatoform dissociative symptoms, including feeling overwhelmed, seizures, hyper-alertness, impulsivity, and difficulty handling intense emotion states.

As dysfunctional self- and affect regulation is considered a core component in BPD and SoD, -some authors have considered BPD and SoD to be disorders of affect regulation- it is of empirical and clinical relevance to differentiate forms of dysfunctional affect regulation. Three different forms of dysfunctional self and affect regulation can be identified: dysfunctional Inhibitory, Excitatory, and combined Inhibitory & Excitatory (IE) regulation. However, dysfunctional affect regulation is distributed differentially for BPD, SoD, BPD+SoD, and PC.

No disorder-specific form of dysfunctional affect regulation or dissociation was found. There is a wide range of intensity of both positive and negative somatoform and psychoform dissociative phenomena (self-dysregulation) and of under- and over-regulation of affect, which were differentially distributed across diagnostic groups. Thus, while clinically significant excitatory regulation and combined dysfunctional IE-regulation were associated, respectively, with BPD and BPD+SoD, dysfunctional regulation may be less prominent as a clinical characteristic of SoD than prior studies have suggested. However, when dysfunctional regulation was present in SoD specifically over-regulation of affect was most reported.

Childhood trauma-by-primary-caretaker has a special importance in the etiology of severe mental disorders such as BPD and SoD. Caretaker-related traumatic stressors are likely to occur in and contribute to a relational growth-inhibiting early environment, and may therefore adversely impact the development of affect regulation capacities in childhood. Infants of caretakers who are unresponsive or poorly affectively attuned are at risk for developing insecure attachment. Infants who additionally experience an abusive caretaker are at risk for developing post-traumatic states of enduring negative affect that may become disorganized attachment working models and chronic dysfunctional affect regulation patterns. Such sequelae of early life “neuro-developmental injury” have been described

5 In the literature, these subsystems have received various names, such as dissociative parts of the personality (Van der Hart et al., 2006).

as epidemic and under-studied (Kaffman, 2009). Adults who were exposed to potentially traumatizing events by primary caretaker during childhood often demonstrate complex psychological disturbances that are not fully captured by the Posttraumatic Stress Disorder (PTSD) diagnosis. In an attempt to capture the complex symptom presentation that includes not only posttraumatic stress symptoms, but also other symptoms reflecting disturbances predominantly in affective and interpersonal self-regulatory capacities, dissociation, somatization, and shattered or altered basic beliefs, Complex PTSD (CPTSD) was introduced as a clinical syndrome for adults. This disorder fundamentally involves the focus of this study: dysfunctional affect regulation and dissociation. Childhood trauma-primary-caretaker plays a role in both over- and under-regulation of affect depending on the type and developmental epoch of the traumatization in psychiatrically-impaired adults, specifically in BPD. Also, CPTSD can be distinguished from BPD and/or SoD. Although a prior report with a smaller clinical sample of women diagnosed with BPD reported that CPTSD was present in all cases, by including patients of both genders and other diagnoses as well as BPD, the present study demonstrated that CPTSD is not exclusively or always found with (and therefore not synonymous with) BPD. Moreover, based upon different patterns of affect dysregulation, it appears that CPTSD can be differentiated from PTSD, as well as from BPD and SoD.

The consequences for theory and clinical applications are discussed. The results of this thesis suggest that further clinical and research studies are needed in order to further the development of evidence-based clinical assessment and treatment protocols for trauma-related self and affect dysregulation in adults with a range of Axis I and II mental disorders. Disorder-specific assessment and treatment methods and guidelines for BPD, SoD and severe affective, and anxiety, may be enhanced by the addition of approaches focused on the types of dysfunctional affect- and self regulation that were identified and examined in the present studies. An example of the clinical applications for multi-disciplinary assessment and treatment is outlined.

Samenvatting

SAMENVATTING

Het doel van dit proefschrift was om een systematische exploratie weer te geven van de kenmerken en de verdeling van disfunctionele affect-regulatie, geassocieerde fenomenen en retrospectief gerapporteerde traumatiserende gebeurtenissen door patiënten gediagnosticeerd met borderline persoonlijkheidsstoornis (BPS), somatoforme stoornis (SomS), comorbide BPD+SomS, plus een psychiatrische vergelijkingsgroep (PG), waar de scores op het gebied van zelf- en affectregulatie mee vergeleken kunnen worden.

Hoewel door veel studies de voordelen van succesvol affect regulatie voor onze psychische gezondheid is aangetoond, blijft de rol van disfunctionele affect-regulatie voor psychiatrische patiënten vooralsnog onduidelijk. Het is wel bekend dat affect-disregulatie een rol speelt in de ontwikkeling van psychopathologie en dat disfunctionele regulatie veel voorkomt bij patiënten met complexe psychopathologie en psychische stoornissen.

Disfunctionele affect-regulatie komt in het bijzonder voor in een interpersoonlijke context. De gehechtheidtheorie is daardoor een belangrijk conceptueel denkkader geworden om het proces van de ontwikkeling van affect-regulatie en -disregulatie te begrijpen. Waar sommige patiënten op tegenslagen verstild reageren en zich sociaal terugtrekken, reageren anderen hyperemotioneel en hebben ze de neiging zich te klampen aan belangrijke anderen om zo stress te reduceren en weer naar een emotioneel basisniveau terug te kunnen keren. Van Dijke (2008) beschreef vanuit een ontwikkelingsperspectief vicieuze cirkels van disfunctionele zelf- en affect-regulatie en de lange-termijn gevolgen van trauma-door-een-primair-verzorgende. Disfunctionele regulatie kan in drie kwalitatief verschillende vormen voorkomen: Inhibitoire regulatie (I), Excitatoire regulatie (E), en een combinatie van Inhibitoire- en Excitatoire(IE) regulatie. Symptomen omvatten verstoringen in de zelf-regulatie in verschillende domeinen van functioneren, waaronder affectief, somatisch, relationeel, reflectief, executief, gedragsmatig, en psycho-fysiologisch functioneren. Activatie van disfunctionele regulatie lijkt te volgen op trauma-door-de-primair-verzorgende geassocieerde en negatief gekleurde cognitief-emotionele informatieverwerking. Echter, als neutrale situaties worden geïnterpreteerd en geëvalueerd als bedreiging of mogelijk schadelijk, wordt disfunctionele regulatie onnodig geactiveerd (vals-positief negatieve interpretatie en evaluatie). Dit kan leiden tot interpersoonlijke misverstanden en teleurstellingen, die vervolgens weer onveilige gehechtheidrepresentaties/ modellen conditioneren en bevestigen, uiteindelijk leidend tot vicieuze cirkels van disfunctionele regulatie.

De focus van dit proefschrift ligt op disfunctionele regulatie op het domein van het affect, de cognitie, het lichaam (soma), de relaties met potentieel traumatiserende gebeurtenissen door de primair-verzorgende. Hierbij wordt tegelijkertijd gedifferentieerd naar ontwikkelingstadia, en in welke mate complexe PTSS-geassocieerde symptomen voorkomen in de studiegroepen.

Twee psychische stoornissen die geassocieerd zijn met disfunctionele affect-regulatie zijn BPS en SomS. De BPS-literatuur beschouwt disfunctionele affect-regulatie als een tekort in het vermogen om negatief affect te moduleren; emoties worden ongecontroleerd en uitgedrukt op een intense, onaangepaste wijze, zodanig dat die het redeneren overweldigen: onder-regulatie van affect. In tegenstelling hiermee wordt in de SomS-literatuur affect-disregulatie beschouwd als een inhibitie van emotionele gewaarwording, en verminderd vermogen om emoties te herkennen en benoemen: over-regulatie van affect. Ondanks de ogenschijnlijke gelijkenis tussen dissociatie en affect-disregulatie, is er verbazingwekkend weinig bekend over de specifieke interrelaties tussen de twee psychopathologische fenomenen. Zowel affect-disregulatie als dissociatie heeft betrekking op verschillende mentale toestanden die inhibitoire- en excitatoire beleving representeren. Mentale toestanden geassocieerd met inhibitoire-beleven zijn consistent met over-regulatie van affect en met negatieve psycho-forme en somatoforme dissociatieve symptomen, zodat het lijkt alsof ze emotioneel verstild, uitdrukkingsloos, mechanisch, en bevroren/ijzig zijn. Mentale toestanden geassocieerd met excitatoire-beleven zijn consistent met onder-regulatie van affect en met positieve psycho-forme en somatoforme dissociatieve symptomen, waaronder het zich overweldigt voelen door emoties, pseudo-epileptische aanvallen, hyper-alertheid, impulsiviteit, and moeite intense emotionele toestanden aan te kunnen.

Omdat disfunctionele zelf- en affect-regulatie wordt beschouwd als kerncomponent van BPS en SomS –sommige auteurs beschouwen BPS en SomS zelfs als affect-regulatie stoornis-sen - is het van empirisch en klinisch belang om te differentiëren tussen verschillende vormen van disfunctionele affect-regulatie. Drie verschillende vormen van disfunctionele zelf- en affect-regulatie kunnen onderscheiden worden: Disfunctionele Inhibitoire (I), Excitatoire (E), en gecombineerde Inhibitoire en Excitatoire (IE) disregulatie. Disfunctionele affect-regulatie komt in verschillende mate voor in BPS, SomS, BPS+SomS, en PG.

Er is geen stoornis-specifieke vorm van disfunctionele affect-regulatie of dissociatie gevonden. Er bestaat een brede range van intensiteit voor zowel positieve als negatieve somatoforme and psychoforme dissociatieve fenomenen (zelf-disregulatie) als voor onder- en over-regulatie van affect, die op zich ook weer verschillend verdeeld waren over de diagnostische groepen. Hoewel klinisch significante excitatoire regulatie en gecombineerde IE-regulatie zijn geassocieerd met respectievelijk BPS en BPS+SomS, is disfunctionele regulatie voor SomS minder prominent aanwezig dan vorige studies hebben gesuggereerd. Indien disfunctionele regulatie aanwezig is in SomS, wordt over-regulatie van affect het meest gerapporteerd.

Trauma-door-de-primair-verzorgende in de kindertijd is van bijzonder belang in de ontwikkeling van ernstige psychische stoornissen zoals BPS en SomS. Primair-verzorgende-gerelateerde stressoren komen het meest waarschijnlijk voor in en dragen bij aan een relationele ontwikkelingsremmende vroege omgeving, en kunnen daardoor van negatieve invloed zijn op de ontwikkeling van affect-regulatie vaardigheden in de kindertijd. Kinderen

van verzorgenden die weinig responsief zijn of weinig emotioneel betrokken lopen het risico om onveilige gehechtheidrepresentaties te ontwikkelen. Kinderen die in aanvulling daarop een mishandelende verzorgende hebben, lopen het risico om een posttraumatische toestand te ontwikkelen. Deze toestand wordt gekenmerkt door chronisch negatief affect met bijbehorende gedesorganiseerde gehechtheidrepresentaties/ modellen and chronische disfunctionele affect-regulatie patronen. Zulke gevolgen van "neuro-ontwikkelingschade" in het vroege leven zijn beschreven als epidemisch terwijl zij tot dusver onderbelicht zijn gebleven (Kaffman, 2009). Volwassenen die zijn blootgesteld aan potentieel traumatiserende gebeurtenissen door de primair-verzorgende in de kindertijd laten vaak complexe psychische problemen zien die niet volledig omvat worden door de diagnose posttraumatische stress-stoornis (PTSS). In een poging om de complexe symptoom presentatie die niet alleen de symptomen van posttraumatische stress omvat, maar ook andere symptomen die voornamelijk betrekking hebben op problemen op het gebied van de affectieve en relationele vermogens, dissociatie, somatisatie en vervormde basis-veronderstellingen over zelf, de ander en de toekomst, werd de diagnostische categorie complexe PTSS (CPTSS) geïntroduceerd als klinisch syndroom voor volwassenen. Deze stoornis heeft fundamenteel betrekking op de focus van dit proefschrift: Disfunctionele affect-regulatie en dissociatie. Bij volwassenen met een psychische stoornis en in het bijzonder bij BPS speelt trauma-door-de-primair-verzorgende in de kindertijd een belangrijke rol in zowel over-regulatie als onderregulatie van affect, afhankelijk van het type trauma en het ontwikkelingstadium waarin de traumatisering voorkwam. Daarnaast kan CPTSS worden onderscheiden van BPS en/of SomS. Hoewel een eerdere studie met een kleinere groep vrouwelijke patiënten gediagnosticeerd met BPS rapporteerde dat CPTSS in alle gevallen aanwezig was, blijkt uit het huidige onderzoek dat door toevoeging van mannelijke patiënten en patiënten gediagnosticeerd met BPS zowel als andere stoornissen, CPTSS niet exclusief is of altijd aangetroffen wordt bij (en dus niet synoniem is aan) BPS. CPTSS kan op basis van verschillende patronen van affect-disregulatie niet alleen van BPS en SomS, maar ook van PTSS onderscheiden worden.

In de discussie volgt een uiteenzetting van de consequenties voor onderzoek en de klinische praktijk. De resultaten van dit proefschrift laten zien dat meer klinisch en empirisch onderzoek nodig is voor de ontwikkeling van evidence-based klinische diagnose- en behandelprotocollen voor trauma-gerelateerde zelf-en affect-regulatie bij volwassenen met een diversiteit aan as I en as II psychische stoornissen. Stoornis-specifieke diagnostiek en behandelmethoden en richtlijnen voor BPS, SomS, ernstige stemmings- en angststoornissen, kunnen verbeterd worden door de toevoeging van benaderingen die focussen op vormen van disfunctionele affect- en zelf-regulatie zoals geïdentificeerd and onderzocht in de huidige studies. Een voorbeeld van de consequenties voor de klinische praktijk in de vorm van multi-disciplinare diagnostiek en behandeling is beschreven.

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HOME IS WHERE WE START FROM (Winnicott, 1990). Emoties hebben altijd een rol gespeeld thuis, ook vanwege het feit dat ik een ouder zusje heb gehad dat maar een paar dagen heeft geleefd. Ik heb een lieve vader gehad die helaas te vroeg overleden is. Hij bracht me onder andere verantwoordelijkheidsgevoel, mildheid, doorzettingsvermogen en een zekere onverzettelijkheid bij. Mijn moeder heeft een groot hart. Menig verdrietige of gestrande scholier van allerlei pluimage bracht ik mee naar huis om zich bij ons te laven of te voeden. Mijn moeder heeft nooit iemand geweigerd te ontvangen. Geheel tegen haar zin

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Lieve Jasmijn, niets is zo helend en vertederend als jouw enthousiaste begroeting bij het weerzien en daarna jouw armen om mij heen. En je weet: Een kusje van jou, doet boosheid, angst en verdriet verdwijnen als sneeuw voor de zon. En een keertje ruzie is niet erg want wat er ook gebeurt: Wij horen bij elkaar!

Curriculum Vitae

CURRICULUM VITAE

Annemiek van Dijke was born on the 21st of July 1969 in Hulst, the Netherlands. After she graduated from S.G. Jansenius, she went studying Psychology at Leiden University. Between 1988 en 1994 she was trained in a master in "clinical and health psychology", and a master in "personality theories and assessment" and carried out several clinical and research internships in hospital and university settings. After her graduation she became a lecturer at the College for Higher Education in Social and Agogic Work (Hogeschool voor Social-Agogisch Onderwijs) in The Hague. In the same year she became an research-assistant for several research projects as well as education-assistant for the department of "Personality theories and Assessment" at Leiden University. From 1995 onward, she continued her education with specialized professional education in clinical psychology and psychotherapy (KP en PT opleiding Stichting PDO GGZ Leiden/ Utrecht). During this period she worked as a clinician for several Mental Health Institutions across the country (P.C. Bloemendaal, RIAGG Westhage, & RIAGG Gooi-en Vechtstreek), both in in-patient and out-patients facilities, and both with children and adults. In 1999 she became officially registered as a clinical psychologist and psychotherapist. Also, she specialized in cognitive-behavior therapy and became a full member of the Dutch Association for CBT. She was an assistant-professor at Utrecht University at the department of Clinical and Health Psychology (1998 to 2002) and coordinator of psychopathology- and psychological assessment-courses. She was awarded with the assistant-professor-of-the-year-prize in 2001/2002. From 1998 to current she is assistant-director of the post-master education Leiden/Rotterdam-area for general health psychologists (hoofddocent Gz-opleiding). She has been teaching on treatment of depression, assessment (neuropsychological and personality assessment), somatoform disorders, and assessment and treatment of complex trauma-related disorders for various post-master education institutions (RINO groep, PAO, Cure & Care, Benecke) and as a guest-lecturer for Tilburg University and Leiden University. As from 2002 onward she is head supervisor of the post-master education for behavioral sciences (P-opleider) at Delta Psychiatric Hospital (Poortugaal) and has trained several general health psychologists, clinical psychologists, and clinical neuropsychologists for Delta Psychiatric Center, and seconded for Forensic Psychiatric Center De Kijvelanden, Bouman Mental Health (addiction), and Breburg Mental Health. In 2009 she became also officially registered as a clinical neuropsychologist and a member of the curriculum committee. As from September 2010 to current she is part-time head of department of research and knowledge development of the Dutch Chronic Trauma Center (Landelijk Centrum Vroegkinderlijke chronische Traumatisering; LCVT). At various national and international conferences from 1995 onward she has been presenting her clinical work and research findings in clinically oriented workshops, paper presentations and poster presentations, chairing symposia and participating in discussion panels. From 2004 onward she has been a member of several bodies for the professional education of psychologists:

Supervisory Body for Advanced and Specialized Professional Education (FGzP-RSG: Registratie Commissie specialismen van de Gezondheidszorg psycholoog), Supervisory Body for the Professional Education of Health Care Psychologists (KGzP: Kamer Gezondheidszorg psycholoog), and the Regulatory Body for Advanced and Specialized Professional Education (CSG: College Specialismen Gezondheidszorg psycholoog).

As dysfunctional self- and affect regulation is considered a core component in BPD and SoD, -some authors have considered BPD and SoD to be disorders of affect regulation- it is of empirical and clinical relevance to differentiate forms of dysfunctional affect regulation.

Van Dijke described dysfunctional self and affect regulation as operating in vicious cycles that approach the long-term sequelae of trauma-by-primary-caretaker from a developmental perspective. Dysfunctional regulation may present in patients in three qualitatively different forms: Inhibitory-, Excitatory-, and combined Inhibitory & Excitatory (IE)-regulation. Symptoms include disturbances in self-regulation across several domains of functioning including affective, cognitive, somatic, relational, reflective, executive, behavioral, and psycho-physiological functioning.