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Outpatient treatments of patients with Borderline personality disorder

Studies of attrition, co-morbidity and effectiveness

Thesis for the degree of Philosophiae Doctor

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Norwegian University of Science and Technology
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Department of Psychology



NTNU – Trondheim
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List of papers

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- III. Nordahl, H. M. & Nysæter, T. E. (2005). Schema therapy for patients with Borderline Personality Disorder: a single case series. *Journal of Behaviour Therapy and Experimental Psychiatry*, *36*, 254-264.

- IV. Nysæter, T. E. & Nordahl, H. M. (2008). Principles and clinical application of schema therapy for patients with borderline personality disorder. *Nordic Psychology*, *60*, 249-263.

List of Abbreviations

BPD	-	Borderline Personality Disorder
CBT	-	Cognitive Behavioural Therapy
DBT	-	Dialectical behaviour therapy
DSM	-	Diagnostic and Statistical Manual of Mental Disorders
FU	-	Follow-up
GAF	-	Global Assessment of Functioning
GSI	-	Global Severity Index, SCL-90-R
IIP-64C	-	The Inventory of Interpersonal Problems- Circumplex
LOCF	-	The last observation carried forward
MDD	-	Major Depressive Disorder
MI	-	Multiple imputation models
MMRM	-	Mixed model for repeated measurements
NMSPOP	-	The Norwegian Multisite Study of Process and Outcome in Psychotherapy
OR	-	Odds Ratio
PD	-	Personality Disorder
PTSD	-	Post-Traumatic Stress Disorder
RCT	-	Randomised Controlled Trial
SCID-I	-	Structural Clinical Interview for the DSM-IV – Axis I
SCID-II	-	Structural Clinical Interview for the DSM-IV – Axis II
SCL-90R	-	Symptom Checklist 90- Revised
TAU	-	Treatment-as-usual

Summary

Psychotherapy is the recommended treatment-of-choice for borderline personality disorder (BPD), in spite of few contemporary studies on the effectiveness of outpatient psychotherapy in ordinary clinical care. The aims of the thesis were twofold; first, to investigate the effectiveness of non-manualized outpatient psychotherapy for patients with BPD using a naturalistic design (paper I and II), secondly, to investigate the clinical application and effectiveness of outpatient schema therapy for patients with BPD (paper III and IV) using a single-case series design. All clinical trials reported follow-up data. The thesis consists of four papers; paper I investigates the effect of non-manualized outpatient psychotherapy for BPD, paper II address the comorbidity of BPD with other personality disorders (PD), paper III investigates the effect of schema therapy for BPD, and paper IV describes the principles and clinical applications of schema therapy for BPD.

The thesis suggest that non-manualized psychotherapy may be a viable option for outpatients with BPD, as 66% of the patients reached remission of BPD at two year follow-up. Although, comorbid axis II disorders were significantly reduced from intake to two-year follow-up the combination of BPD with avoidant-, or obsessive-compulsive PD may be associated with slower remission of both the BPD and the comorbid PDs. Schema therapy was also reported to have promising effects on BPD, as three out of six patients reached remission of BPD and all patients were significantly better at follow-up. Patients reported that the schema mode conceptualization was easy to identify with and provided a helpful working model throughout the therapy.

The generalisation of the results was mainly limited by the low N (paper I-III), as well as a high rate of attrition (paper I and II). Nevertheless, the validity of the findings is strengthened by the overall consistency of the findings with the results from international clinical trials. In conclusion, the thesis highlights that schema therapy and non-manualized psychotherapy for outpatients with BPD in ordinary clinical care may produce favourable outcome, but comorbidity may require specific attention in treatment of patients with BPD to enhance the recovery.

1 Introduction

1.1 *Borderline personality disorder*

The prevalence of borderline personality disorder (BPD) in the community commonly varies between 0.2–3.9% (Crawford et al., 2005; Lenzenweger, Lane, Loranger, & Kessler, 2007; Lenzenweger, Loranger, Korfine, & Neff, 1997; Swartz, Blazer, George, & Winfield, 1990; Torgersen, Kringle, & Cramer, 2001). In Norway, community prevalence in the lower end has been reported, as a well-controlled study estimated a community prevalence of 0.7% for BPD (Torgersen, et al., 2001). In contrast to community prevalence estimates, BPD is counted among the most frequent single diagnoses in inpatient and outpatient clinics (Widiger & Frances, 1989). Prevalence estimates of BPD range from 8–11% among outpatients and 14–20% among inpatients (Bateman & Fonagy, 2004; Kraus & Reynolds, 2001; Lenzenweger, et al., 1997; Skodol, Gunderson, et al., 2002). No consensus has been established on the aetiology of BPD, but the developmental pathways are probably a complex composite of genetic, neurobiological and temperamental factors, in combination with psychosocial factors such as adverse childhood conditions (e.g. neglect and abuse) and attachment related disturbances (Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004; Paris, 2007; Skodol, Siever, et al., 2002; Zanarini & Frankenburg, 1997). However, childhood physical and/or sexual abuse are probably not necessary or sufficient factors by themselves for the development of BPD (Lieb, et al., 2004; Paris, 2007), but may be factors determining the severity of the BPD disorder (Zanarini & Frankenburg, 1997) or may function as significant antecedents of suicidal behaviour in general (Bebbington et al., 2009; Brezo et al., 2008).

The current DSM-IV-TR definition of borderline personality disorder (BPD) highlights the fact that BPD is a serious and complex mental disorder characterized by “*a pervasive pattern of instability of interpersonal relationships, self-image and affects, and marked impulsivity that begins by early adulthood and is presented in a variety of contexts*” (American Psychiatric Association, 2000, p. 706). The concept of BPD has been considerably revised over the last 40 years, during which a review by Gunderson and Singer (1975) was particularly instrumental in defining more concise criteria for BPD.

Prior to the DSM-III, the term “borderline” commonly implied patients who did not clearly fit into the diagnostic classification system that was mainly concerned with dividing psychoses from neuroses (Gunderson, 2001). Studies prior to DSM-III commonly included patients who would be classified today as having a schizotypal personality disorder (Gunderson, 2001), which could explain why early outcome studies on psychotherapy often indicated that psychotherapy or psychosocial interventions had little effect for “borderline patients”. The DSM-III definition of BPD relied heavily on the review article by Gunderson and Singer (1975), in which they emphasized the fact that the central features of BPD included social maladaptation, psychotic-like cognition, interpersonal difficulties, and difficulties in regulating affects and impulsive behaviour. The features highlighted by Gunderson and Singer, together with the concept of identity diffusion, as derived from Kernberg (1975), were instrumental in the development of the criteria set for BPD in the DSM-III (Gunderson, 2001). The criteria for BPD were modestly changed from DSM-III in DSM-IV, where, among others, impulsiveness was included as a new criterion for BPD (Gunderson, 2001). The DSM-IV-TR criteria are listed in Table 1.1.

Table 1.1 General diagnostic criteria for BPD according to the DSM-IV-TR

A pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity beginning by early adulthood and present in a variety of contexts, as indicated by five (or more) of the following:

1. Frantic efforts to avoid real or imagined abandonment. Note: Do not include suicidal or self-mutilating behaviour covered in Criterion 5.
2. A pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation.
3. Identity disturbance: markedly and persistently unstable self-image or sense of self.

4. Impulsivity in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating). Note: Do not include suicidal or self-mutilating behaviour covered in Criterion 5.
 5. Recurrent suicidal behaviour, gestures, or threats, or self-mutilating behaviour.
 6. Affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days).
 7. Chronic feelings of emptiness.
 8. Inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights).
 9. Transient, stress-related paranoid ideation or severe dissociative symptoms.
-

At least five of the nine criteria listed in Table 1.1 must be met in addition to the general criteria for personality disorder in order to be diagnosed with BPD. The nine criteria for BPD listed in Table 1.1 have been investigated in order to identify possible underlying dimensions of borderline phenomenology. Most studies identified three dimensions; these usually included dimensions of disturbed relational abilities, emotional dysregulation and impulsive and behavioural dyscontrol (Blais, Hilsenroth, & Castlebury, 1997; Clarkin, Hull, & Hurt, 1993).

1.2 Diagnostic stability and course of BPD

Several studies investigated the claim in the DSM that personality disorders (PD) and BPD can be defined as enduring and stable patterns of maladaptive traits and behaviours over time and situations (American Psychiatric Association, 1994, 2000). In general, a moderate diagnostic stability was reported (e.g. Grilo et al., 2004; Lenzenweger, Johnson, & Willett, 2004; McGlashan et al., 2005; Sanislow et al., 2009), and PD was shown to improve over time. In terms of the stability of the diagnostic criteria for BPD, the affective-related criteria (e.g. anger, affective instability) were found

to be less likely to remit with time compared to behavioural criteria (e.g. self-mutilation, unstable relationships) (Choi-Kain, Zanarini, Frankenburg, Fitzmaurice, & Reich, 2010; McGlashan, et al., 2005; Zanarini et al., 2007). In a 10-year follow up study by Zanarini et al. (2007), symptoms such as quasi-psychotic thoughts, self-mutilation, manipulative suicidal efforts and serious identity disturbance were found to have a remission rate of 60% at the 6-year follow-up and 85% or more at the 10 year follow-up. Symptoms such as chronic dysphoria, general impulsiveness, non-delusional paranoia, intolerance for aloneness and concerns of abandonment were relatively slow to remit with a remission rate commonly around 40% at the 6-year follow up and between 65–75% at the 10-year follow-up. This indicates that some symptoms of BPD are less stable than previously thought, which does not support the notion of BPD criteria reflecting enduring and stable patterns of a long duration.

In order to address the lack of stability in the definition of BPD, Zanarini et al. (2007; 2008) proposed a division of the symptoms of BPD into two groups: acute symptoms and temperamental symptoms. Acute symptoms include recurrent self-mutilation and suicidal behaviours, the tendency to have unstable relationships and problems in managing interpersonal relationships. Temperamental symptoms include affective instability and feelings of loneliness and emptiness, as well as abandonment and dependency concerns. The results reported by Zanarini et al. (2007) and Choi-Kain et al. (2010) indicate that acute symptoms over a 10-year period will remit more readily than temperamental symptoms. Dahl (2008) noted that an ultimate test of therapeutic effectiveness would therefore be to achieve changes in temperamental symptoms rather than acute symptoms. However, little is known about the mechanism of remission. Results of studies indicate that older individuals with BPD report less impulsivity and less suicidal behaviour, although symptoms of distress persist (e.g. Stepp & Pilkonis, 2008). This has led to the notion that an increase in age is linked with a decrease of behavioural dyscontrol for patients with BPD. In a study by Paris and Zweig-Frank (2001) with a 27-year follow-up of patients with BPD from an urban general hospital, patients were found to have improved by late middle-age, where only 8% of the patients still met the criteria for a BPD diagnosis. However, a recent study suggested that improvements in BPD are not age related (Shea et al., 2009). Patients in this latter prospective study of the natural course of BPD were mainly recruited at outpatient

clinics and received or had previously received treatment-as-usual (TAU) (Gunderson et al., 2000; Shea, et al., 2009). The patients show similar rates of improvement in borderline features regardless of age at six year follow-up, but older patients were found to be less likely to maintain or continue to improve at the follow-up period compared with younger patients. Although Shea and colleagues reported that improvements in borderline features are not specific to the late 30s and 40s, few data have been published on middle-aged or older patients with BPD (Lieb, et al., 2004).

1.3 Comorbidity

Borderline personality disorder has often been reported to be comorbid with other axis I and axis II disorders (Critchfield, Clarkin, Levy, & Kernberg, 2008; Links, Heslegrave, & Van Reekum, 1998; Nurnberg et al., 1991; Oldham et al., 1995; Zanarini et al., 1998a, 1998b; Zanarini, Frankenburg, Hennen, Reich, & Silk, 2006; Zanarini et al., 2004). The most frequent axis I disorders associated with BPD are major depression, substance use disorders, and anxiety disorders such as panic disorder with agoraphobia, and social or specific phobias (Skodol, Gunderson, et al., 2002; Zanarini, et al., 1998a; Zimmerman & Mattia, 1999). In terms of treatment for axis I disorders, many previous studies have reported that the presence of personality disorders is linked to a poorer response to the treatment of axis I disorders (Skodol, Gunderson, et al., 2002).

As noted by Gunderson (2001), the rate of comorbid depression or any other axis I disorder, with the exception of eating disorders, is significantly higher in samples of patients with BPD compared with the rate of comorbid BPD in any other samples of axis I patients. An example is a study by Skodol et al. (1995), in which they reported that patients with BPD had 8.2 times higher odds than non-BPD patients of meeting the criteria for a current comorbid panic disorder. However, mood disorders seem to be the most common comorbid axis I disorder among patients with BPD, of which a current comorbid major depressive disorder (MDD) is most frequently reported. Of 240 patients with BPD, 31% had MDD, 16% had dysthymia, 9% were bipolar I, and 4% bipolar II (Skodol et al., 1999). Gunderson (2001) reported estimates, based on a review of thirteen articles, where 50% of patients with BPD had a current MDD, 70% had dysthymia, 10% were bipolar II, and 5% bipolar I. Differences in research designs may

explain some of the reported variations in the estimates of comorbid axis I disorders. In addition, overlapping diagnostic criteria may also account for some of the overlap of symptoms, as the criteria for BPD includes affective instability and recurrent suicidal ideation or behaviour, which overlap with the symptoms of MDD (Bateman & Fonagy, 2004; Gunderson, 2001; Skodol, Gunderson, et al., 2002). Other suggestions were that BPD and axis I disorders are unrelated but commonly found in patient populations where they tend to co-occur and influence each other in terms of course and symptom expression, or that these disorders have a set of common underlying aetiological factors that increase their co-occurrence (Skodol, Gunderson, et al., 2002). Although there are several possible explanations, which are not mutually exclusive, the data are not conclusive on the observed comorbidity (Skodol, Gunderson, et al., 2002).

In terms of comorbid axis II disorders in patients with BPD, it appears that comorbidity is somewhat linked with gender, age and clinical setting (inpatient or outpatient). In general, cluster A (odd, eccentric) and C (anxious, fearful) disorders have been reported to be significantly more frequent among adult patients with BPD in inpatient care compared with other axis II controls (Zanarini, et al., 1998b). Male patients with BPD in inpatient care seem to have significantly more comorbid paranoid, narcissistic, and antisocial personality disorders compared with females in inpatient care (Zanarini, et al., 1998b), and adolescent patients with BPD have been found to display a broader pattern of comorbidities compared with adults (Becker, Grilo, Edell, & McGlashan, 2000). In contrast, patients in outpatient care have been reported to typically have comorbid avoidant, paranoid and dependent PD (Conklin & Westen, 2005). In a recent study based on data from 90 patients included in a randomised controlled trial (RCT) in an outpatient setting, Critchfield et al. (2008) reported a weak association between cluster A or C comorbidity and specific criteria for BPD. Patients with a cluster A comorbidity were less likely to meet the criteria for abandonment, whereas patients with a cluster C comorbidity were less likely to meet the criteria for anger and impulsivity. However, due to methodological concerns (e.g. sample size, statistical power, possible selection bias due to the study design), this study should be replicated using larger and more naturalistic samples (Critchfield et al., 2008).

Although several studies have reported that BPD is frequently comorbid with other axis II disorders, only a handful studies reported the impact comorbidity has on the outcome of treatment. Several clinical trials have shown that comorbid personality disorders can affect the outcome of treatment for patients with a primary BPD (Links, et al., 1998; Zanarini, et al., 2006). Most clinical trials focused on severely disturbed inpatients receiving treatment-as-usual (TAU), including one study by Zanarini et al. (2006) in which they reported 10-year follow-up data for 290 inpatients. In general, a comorbid cluster C PD (especially avoidant and obsessive-compulsive PD) (Zanarini et al., 2006), paranoid PD features (Links et al., 1998), schizoid PD (Perroud, Uher, Dieben, Nicastro, & Hugulet, 2010), schizotypal PD (McGlasgan, 1986), and antisocial PD (Gunderson et al., 2006; Links, Mitton, & Steiner, 1990; Stone, 1993) were associated with a poor prognosis. Zanarini et al. (2006) proposed that temperamental features associated with some comorbid PDs (e.g. shyness, rigidity, paranoid ideation) may make it difficult for patients with BPD to enlist the help and support of others in order to overcome their ambivalence and fearfulness of close relationships. However, little is known about the impact of comorbid axis II disorder on the remission of BPD among patients in outpatient care.

1.4 Treatment utilization and drop-out by patients with BPD

Treatment utilization by patients with borderline personality disorder is substantial (Bender et al., 2001). Several studies have reported that patients with BPD have more frequent psychiatric hospitalizations, a more frequent use of outpatient treatment, and more visits to emergency rooms (Bender, et al., 2001; Bender et al., 2006; Zanarini, Frankenburg, Hennen, & Silk, 2004; Zanarini, Frankenburg, Khera, & Bleichmar, 2001). The high utilization level of psychiatric and somatic health care services imposes relatively high economic expenses for health care systems and society at large (Comtois et al., 2003). In outpatient clinics, patients with BPD receive greater amounts of psychosocial treatment compared with other PDs or patients with axis I disorders (Bender et al., 2001), and patients in inpatient care are commonly given intensive, long-term therapy in the form of psychotropic medications (Zanarini, Frankenburg, Hennen, et al., 2004). Patients with BPD generally seek out treatment, but they typically have an

erratic attendance with repeated patterns of dropping out, pervasive non-compliance to psychotherapy or medication plans, and frequent crises or suicidal or self-mutilating behaviours that disrupt treatment (Bongar, Peterson, Golann, & Hardiman, 1990; Clarke, Hafner, & Holme, 1995; Skodol, Buckley, & Charles, 1983; Zanarini & Frankenburg, 2001). The combination of help-seeking behaviour, erratic attendance and non-compliance to therapy, and high rates of suicidal, self-injuring, and self-destructive behaviours makes treating BPD a challenge for mental health care units (Black, Blum, Pfohl, & Hale, 2004; Soloff, Lynch, & Kelly, 2002). In addition, patients with BPD also require a lot of informal care (e.g. help from relatives, neighbours), which represents an important societal factor for the people around the patient and society at large (van Asselt et al., 2008). Although patients with BPD use more mental health services compared to patients with most of the other axis I disorders and PDs, questions remain about the adequacy of the general treatment received by patients with BPD (Bender, et al., 2006).

1.5 Psychosocial outpatient treatment for borderline personality disorder

Psychotherapy have long been the treatment of choice for personality disorders (e.g. NICE, 2003; Oldham et al., 2001), which is also supported by two meta-analyses (Leichsenring & Leibling, 2003; Perry, Baron, & Ianni, 1999) and several systematic reviews (e.g. Binks, Fenton, McCarthy, & et al., 2006; Brazier et al., 2006; Verheul & Herbrink, 2007). The meta-analysis by Perry et al (1999) indicated how psychotherapy for personality disorders was associated with a sevenfold faster rate of recovery compared with the natural course of the disorders, whereas Leichsenring and Leibling (2003) concluded that both psychodynamic and cognitive behaviour therapy are effective treatments for personality disorders. Although most studies on psychotherapy for personality disorders have focused on patients with BPD, the two meta-analysis as well as the systematic reviews highlight that common limitations of clinical trials for BPD seem to be the general use of small sample sizes, the frequent use of unspecified TAU, the lack of a standardized set of measures to assess outcome, and that few studies report the rate of recovery from BPD.

1.5.1 Randomised controlled trials of psychosocial outpatient treatment for BPD

Several RCTs have shown that psychosocial outpatient treatment are beneficial for patients with BPD, but the number of RCTs are few compared with other psychiatric disorders (Lieb, et al., 2004). Most RCTs on outpatient treatment of BPD have compared specific psychosocial treatment modalities with treatment-as-usual (e.g. Bateman & Fonagy, 1999; Davidson, Norrie, et al., 2006; Linehan, Armstrong, Suarez, Allmon, & Heard, 1991; Weinberg, Gunderson, Hennen, & et al., 2006), whereas few RCTs have compared specific treatment modalities with each other (e.g. Clarkin, Levy, Lenzenweger, & Kernberg, 2007; Giesen-Bloo et al., 2006). Treatment-as-usual have generally been found to be marginally effective for patients with BPD (Lieb, et al., 2004), but there are evidence for the efficacy of specific psychological therapies for BPD, such as mentalization-based treatment (Bateman & Fonagy, 1999, 2001), transference-focused psychotherapy (Clarkin, et al., 2007), schema therapy (Giesen-Bloo, et al., 2006), cognitive behaviour therapy (Davidson, Norrie, et al., 2006; Weinberg, et al., 2006) and dialectical behaviour therapy (DBT) (Koons et al., 2001; Linehan, et al., 1991; Linehan et al., 2006; Linehan et al., 2002; Turner, 2000; van den Bosch, Koeter, Stijnen, Verheul, & van den Brink, 2005; van den Bosch, Verheul, Schippers, & van den Brink, 2002; Verheul et al., 2003).

There are now substantial evidence to show that DBT is an effective treatment for patients with severe and life-threatening impulse disorders (e.g. high risk of suicidal, self-harm behaviour) compared with treatment-as-usual, but there are limited or no empirical evidence to show that DBT applied in the first year affects core pathologies associated with BPD (e.g. abandonment and unstable relationships, chronic emptiness, identity disorders) (Scheel, 2000). The RCTs based on mentalization-based treatment, transference-focused psychotherapy, schema therapy, and cognitive behaviour therapy show promising results, but so far the evidence are not as robust as for DBT. Thus, the evidence based on RCTs is currently not in favour of one specific treatment modality over other specific treatment modalities, but it appears that different treatment modalities could be beneficial for different sub-groups of patients (Dahl, 2008; Lieb, et al., 2004; Paris, 2008; Zanarini, 2009). However, a general weakness with several of the RCTs noted above, is that the clinical trials lack sufficient statistical power to detect possible differences in effect between the treatments modalities (Leichsenring, Leibing,

Kruse, New, & Leweke, 2011). In addition, long-term assessments of outcome in RCTs seem to be mainly restricted to a 1 or 2-year follow-up period, and most patients receive further treatment during the follow-up period. This dilutes the generalization of treatment effect. In addition, the patients in the clinical trials listed above constituted a heterogenic group in terms of severity and functional impairment. Furthermore, the majority of patients were women in their late twenties/early thirties. Therefore, little is known about the treatment effects on men or patients outside this age range. As most RCTs were conducted by highly trained and specialized therapists, more studies are needed on the effectiveness of psychotherapy in ordinary clinical care.

1.5.2 Uncontrolled outcome studies of psychosocial outpatient treatment for BPD

Previous studies on outpatient psychotherapy not classified as RCT are listed in Appendix I. Although there are several studies on outpatient psychotherapy for BPD, few have reported the rate of recovery from BPD or used the DSM-IV. As also noted for RCT studies on BPD, most uncontrolled studies lack sufficient statistical power due to low number of patients, which combined with a substantial degree of attrition limits the generalisation of the results. However, naturalistic studies tend to have longer follow-up compared with RCTs, especially studies published in the 80's and 90's.

Early studies on the natural course of BPD published in the late 70's and early 80's using pre-DSM or DSM-III suggest that patients with BPD can be expected to have negligible improvement over time, poor compliance to treatment, and a high degree of drop-out from any treatment (Carpenter & Gunderson, 1977; Carpenter, Gunderson, & Strauss, 1977; Gunderson, Carpenter, & Strauss, 1975; Paris, Brown, & Nowlis, 1987; Paris, Nowlis, & Brown, 1988; Perry, 1985, 1988; Perry & Cooper, 1985; Sheehy, Goldsmith, & Charles, 1980; Skodol, et al., 1983). However, few of the patients included in these early studies have actual received outpatient psychotherapy. An exception was a study by Waldinger and Gunderson (1984), which reported moderate to fair outcome of outpatient psychotherapy. This result was in line with later studies published during the 90's (see Appendix I). Studies published in the 90's used the DSM-III-R diagnostic system, and commonly reported moderate to fair level of improvement with moderate to low drop-out from psychotherapy. In addition, Stevenson and colleagues (1992,

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1999) also report recovery rates for BPD as well as cost-benefit analysis. The optimistic results on individual psychotherapy from the 90's have been to some degree elaborated during the last decade. However, there are few recent uncontrolled studies on individual outpatient psychotherapy using DSM-IV, as most contemporary studies on outpatient psychotherapy either are based on a RCT design or applying a mixture of other treatment modalities in addition to individual psychotherapy (e.g. group therapy, day treatment) (see Appendix I). Thus, more research is therefore needed on the effectiveness of individual psychotherapy in ordinary clinical care.

1.5.3 Implications of RCT for ordinary clinical practice

Randomized controlled trials (RCT) are in evidence-based medicine and psychology often referred to as the “gold-standard” of research on treatment effectiveness. This is evident in the widely accepted hierarchical system of evidence by the Centre for Evidence-Based Medicine (2009) where RCT is placed on top of the hierarchy. The use of RCT in clinical research is now common in research on the effectiveness and efficacy of psychotherapy (e.g. Leichsenring & Leibing, 2003; Leichsenring, Rabung, & Leibing, 2004; Perry, et al., 1999) and have been pivotal in the development of more effective treatments (Westen, Stirman, & DeRubeis, 2006). A goal of RCT is to increase internal validity by seeking to control for possible extrinsic factors that can contribute variability to the treatment effect, but this may affect the external validity or generalization of the results to ordinary clinical practice and patients seen there. Although the patients included in RCTs have been considered unrepresentative for patients seen in ordinary clinical practice due to the use of exclusion criteria (Depp & Lebowitz, 2007), the difference may not be as large as previously suggested (Westen, et al., 2006). However, as most RCTs have used restrictions on therapy time and/or adherence to specific psychotherapy manuals, questions have been raised if the results obtained from RCTs are representative for ordinary clinical practice. Full implementation of empirically supported treatment manuals is commonly not found in traditional clinical settings (Gratz & Gunderson, 2006) partly because of limited resources at clinics and limited availability of trained supervisors, although also because the treatment usually is adjusted in accordance with idiographic features of the patient (Depp & Lebowitz,

2007). In addition, RCT is rarely used to investigate long-term psychotherapy or psychotherapy delivered in ordinary clinical practice (De Maat, Dekker, Schoevers, & De Jonghe, 2007; Fonagy, Roth, & Higgitt, 2005), and it is therefore a lack of knowledge about the long-term effect of psychotherapy for BPD as it is practiced in ordinary clinical care at outpatient's clinics (Oldham, et al., 2001). Hence, there are concerns about the degree to which the results of the effect obtained in RCTs are transferable to clinical practice (Depp & Lebowitz, 2007; Oldham, et al., 2001; Westen, Morrison, & Thompson-Brenner, 2004).

1.5.4 Implications of naturalistic outcome studies for ordinary clinical practice

The use of RCT in psychotherapy research have been criticized based on an assumption that the external validity or generalization of the results to general clinical practice is limited (Roth & Parry, 1997). One can therefore argue that a naturalistic research design that seek to duplicate the clinical setting in which treatment is delivered, can be a useful addition for studying the effectiveness of psychotherapy. Naturalistic studies have also been highlighted as useful when assessing the findings of RCT, and for generating hypotheses, because naturalistic studies provide an opportunity to observe phenomena as experienced in clinical practice (Westen, et al., 2004). Low degree of internal validity is a methodological weakness associated with naturalistic designs, but the strength of the design is the ecological and external validity in terms of generalization of the results to ordinary clinical practice. A naturalistic approach to study the effects of psychotherapy as it is practiced in ordinary clinical care would therefore be a beneficial addition to RCTs and other outcome designs, as a naturalistic design could provide a context in which to interpret results obtained in RCTs (Westen, et al., 2004). This type of evaluation of psychotherapy may be even more important in the future when the various manualised treatments for BPD are at the stage of implementation research, as TAU does not necessary include psychotherapy or the assessment of the long-term effectiveness of psychotherapy at typical outpatient clinics. Thus, the primary rationale behind the present thesis is that we need to know more about the natural course and the long-term outcome of psychotherapy in ordinary clinical practice for outpatients with BPD.

2 Objective and outline of the thesis

The main objective for the thesis was to investigate the effectiveness of individual psychotherapy for patients with BPD in outpatient care using different samples and methods. The aims were twofold; first to investigate the effectiveness of outpatient psychotherapy for patients with BPD in ordinary clinical care using a naturalistic design, second, to investigate the effectiveness of schema therapy for patients with BPD using a single-case series design.

The thesis consists of four papers with the following objectives:

2.1 Paper I: *“A preliminary study of the naturalistic course of non-manualized psychotherapy for outpatients with Borderline Personality Disorder: patient characteristic, outcome and attrition.”*

Paper I investigates the effect of non-manualized psychotherapy in the NMSPOP sample which include 32 outpatients with a primary diagnosis of BPD. This is to estimate the effect of individual psychotherapy in ordinary clinical care using a naturalistic design.

2.2 Paper II: *“Comorbidity of borderline personality disorder with other personality disorders in psychiatric outpatients: How does it look at two year follow-up?”*

The second paper focuses on investigating the remission rates of comorbid personality disorders, and their association with the remission of BPD in the same sample as used in paper I. Here we especially targeted the long term effect on remission rate.

2.3 Paper III: *“Schema therapy for patients with Borderline Personality Disorder: a single case series.”*

The study reported in paper III investigated the effect of individual schema therapy in a single case series consisting of six patients with a primary diagnosis of BPD in a controlled outpatient setting. This was the first study ever conducted on the treatment effect of schema therapy for BPD.

2.4 Paper IV: "Principles and clinical application of schema therapy for patients with borderline personality disorder."

Paper IV presents and illustrates the principles and clinical applications of schema therapy for BPD, which is used in study III.

3 Material and Methods

3.1 Design

Two research designs were used for the papers in this thesis. Papers I and II are based on an open-ended prospective naturalistic design with a 24-month follow-up (Kazdin, 2003). Paper III is based on a single case series using an A-B design, with a 12-month follow-up (Barlow & Hersen, 1984).

3.2 Patient samples

This thesis is composed of two clinical samples of patients with a primary borderline personality disorder diagnosis in outpatient care.

Clinical sample 1 consisted of 32 patients, enrolled in the Norwegian Multisite Study of Process and Outcome in Psychotherapy (NMSPOP), with a DSM-IV (American Psychiatric Association, 1994) borderline personality disorder as their principal diagnosis. The NMSPOP is a naturalistic prospective study of non-manualized psychotherapy on patients from eight sites comprising 15 outpatient psychiatric clinics within the Norwegian Public Health System. A total of 374 patients were enrolled in the NMSPOP from 1995 to 1999, where 8.6% of the patients in the total sample had a principal BPD diagnosis. The inclusion criteria in the NMSPOP were liberal in order to ensure representativeness of the patient population receiving psychotherapy at the outpatient clinics, but a pre-defined selection criterion by the NMSPOP was that half of the patient sample should meet the criteria for a DSM-IV personality disorder diagnosis (American Psychiatric Association, 1994). The exclusion criteria used were psychosis, having

substance/alcohol abuse as the main problem, organic brain disorders, serious physical illness and acute need for hospitalization.

Most of the patients in sample 1 were women (81%), generally with some degree of education and work experience. The mean age of the patients was 28.9 (SD = 6.1; range 20–43). Most patients were working, students or on sick leave when enrolled in the NMSPOP database. The most frequent concurrent and lifetime DSM-IV axis I disorders were major depressive disorder and anxiety disorders, where 72% of patients met the diagnostic criteria for two or more axis I disorders. In addition, most patients (81%) also met the diagnostic criteria for one or more additional co-occurring DSM-IV axis II disorders, where paranoid personality disorder (50%), avoidant personality disorder (47%) and obsessive-compulsive personality disorder (31%) were the most common. Seven patients (22%) reported that they had received antidepressant medication at the start of treatment, and one patient had received sedative medication in addition to the antidepressant medication.

Clinical sample 2 consisted of six patients, all women, referred to therapy at the outpatient clinic in the Department of Clinical Psychology, NTNU. Data collection and treatment started in 1998 and ended in 2003. All patients fulfilled the criteria for a DSM-IV borderline personality disorder, which was set as the principal diagnosis in accordance with the DSM-IV guidelines (American Psychiatric Association, 1994). In terms of axis I diagnoses, recurrent major depression (67%) and anxiety disorders (50%) were most frequent. Four patients also had co-morbid diagnoses of other axis II disorders, i.e. avoidant (N = 2), dependent (N = 1) and histrionic (N = 1) personality disorders. The patients' ages ranged from 19 to 42 (mean = 25.6, SD = 8.4). Three of the patients were married, one lived with her partner, and two were single at the time of inclusion. Three of the patients had part-time jobs, one was unemployed and two were students. All patients had received psychological or psychotropic treatment previously (mean = 3.1 years). Three of the patients were being treated with psychotropic medication (SSRI, lamotrigine) at intake; this was discontinued before the start of treatment.

3.3 Instruments

3.3.1 Self-report instruments

Symptom Checklist 90-R (SCL-90R; Derogatis, 1992). The SCL-90R was used in papers I and III and consists of 90 items, which are rated on a five-point scale. The SCL-90R is extensively used for assessing a wide variety of self-reported psychiatric symptoms, and it consists of nine orthogonal symptom dimensions, i.e. Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychotism. The mean score of the SCL-90-R, i.e. the global severity index (GSI), was used in papers I and III as an indicator of current intensity and perceived symptomatic distress (Derogatis, 1992). The GSI has been extensively used and shown to be a reliable and valid measure of general symptomatic distress (Cyr, McKenna-Foley, & Peacock, 1985; Pedersen & Karterud, 2004; Rauter, Leonard, & Swett, 1996).

Inventory of Interpersonal Problems. The mean score on the Inventory of Interpersonal Problems—Circumplex (IIP-64C; Alden, Wiggins, & Pincus, 1990) or the Inventory of Interpersonal problems (IIP; Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988) were used as global scores of non-specific interpersonal distress (Alden et al., 1990; Horowitz et al., 1988) in papers I and III. The Inventory of Interpersonal Problems—Circumplex consists of 64 items and is a subset of the 127-item Inventory of Interpersonal problems. The IIP-C measures two main orthogonal dimensions: dominant versus submissive and hostility versus friendliness (Alden, et al., 1990; Gurtman, 1996; Nysæter, Langvik, Berthelsen, & Nordvik, 2009). The IIP-64C consists of two types of items; interpersonal behaviours that are hard to do (e.g., “It is hard for me to join in on groups”), and interpersonal behaviours that happen too often (e.g., “I fight with other people too much”) (Alden et al., 1990). Each item is rated on a five-point scale ranging from “not at all” to “extremely”, and is scored on eight octants that are arranged around the circumplex circle formed by the two main orthogonal dimensions: dominant-submissive and hostile-friendly. The eight octants are: Domineering, Vindictive, Cold, Socially Avoidant, Non-assertive, Exploitable, Overly Nurturant, and Intrusive (Alden et al., 1990). Only the mean sum of all items was used in this thesis. The reliability of the

Norwegian translation of the IIP-64C was acceptable and within the same vicinity as the original version (Monsen, Hagtvet, Havik, & Eilertsen, 2006).

Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The BDI was used in paper III and is a 21-item self-report inventory that measures a variety of depressive symptoms (e.g. Mood, Pessimism, Guilty Feelings, Suicidal Wishes, Irritability, Social Withdrawal, and Sleep Disturbance). Each item is rated on a four-point scale in terms of intensity, where the higher the score on BDI the greater the severity of depression. The BDI has been shown to be a reliable and valid measure of depression in both clinical and non-clinical samples (Beck, Steer, & Garbin, 1988).

Beck Anxiety Inventory (BAI; Beck & Steer, 1990). The BAI was used in paper III to measure the severity of a variety of self-reported symptoms of anxiety. The BAI was designed to differentiate between behavioural, emotional, and physiological symptoms of anxiety. The BAI consists of 21 items and each item or symptom is rated on a four-point scale where the higher the score is on BAI the greater the severity of anxiety. The BAI has been widely used to measure the severity of anxiety by self-report and was shown to be a reliable and valid measure of anxiety symptoms (Augustine, Beverly, Francisco, Joylene, & Tray, 1997; Leyfer, Ruberg, & Woodruff-Borden, 2006).

Young Schema Questionnaire (YSQ, second ed. long form; Young & Brown, 1994). The YSQ-L2 was used in paper III and consists of 205 items rated on a six-point Likert scale from “completely untrue of me” to “describes me perfectly”. The measure consists of a total of 16 maladaptive schemas, where only the most prominent schemas of patients with BPD were used in paper III (Young & Behary, 1998). The maladaptive schemas were measured as a composite of abandonment/instability (AB), mistrust/abuse (MA), emotional deprivation (ED), and defectiveness/shame (DS). Studies on the YSQ (long and short forms) have shown that the instrument has an adequate reliability and validity (Glaser, Campbell, Calhoun, Bates, & Petrocelli, 2002; Hoffart et al., 2005; Lee,

Taylor, & Dunn, 1999; Oei & Baranoff, 2007; Schmidt, Joiner, Young, & Telch, 1995; Waller, Meyer, & Ohanian, 2001; Welburn, Coristine, Dagg, Pontefract, & Jordan, 2002).

The Working Alliance Inventory (WAI; Horvath & Greenberg, 1989, 1994). The 12-item version of the WAI was used in paper I as a measure of a patient's general experience of alliance during the early stages of therapy. The WAI was developed to measure Bordin's three alliance components (i.e. goal, task, and bond), and the 12-item short version of the WAI used in paper I is the most commonly used version of the WAI (Horvath & Bedi, 2002). The items are rated on a seven-point Likert scale where higher the score the more positive rating of the working alliance. In terms of psychometric properties, the WAI has been shown to have good internal and test-retest reliability estimates and satisfactory support for content, internal and discriminate validities (Horvath & Greenberg, 1994).

3.3.2 *Clinical interviews*

The diagnostic assessments used in papers I, II and III comprised the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I; First, Spitzer, Gibbon, & Williams, 1996) and DSM-IV Axis II Personality Disorders (SCID-II; First, Gibbon, Spitzer, Williams, & Benjamin, 1997). In addition, the assessments in paper I and III also included the DSM-IV General Adaptive Functioning Scale (GAF: Axis V).

The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I; First et al., 1996) was developed to assess the axis I DSM-IV diagnoses most commonly seen in clinical practice. The SCID-I is divided into six modules (i.e. mood episodes, psychotic symptoms, psychotic disorders, mood disorders, substance use disorders, and anxiety, adjustment and other disorders). Each module contains the diagnostic criteria for the covered disorders with corresponding interview questions.

The Structured Clinical Interview for the DSM-IV Axis II Personality disorders (SCID-II; First et al., 1997) was developed to assess the 10 DSM-IV personality disorders in addition to two personality disorders suggested for research purposes (i.e. depressive personality disorders, and the negativistic personality disorder), and personality disorders not otherwise specified.

The DSM-IV General Adaptive Functioning Scale (GAF: Axis V; American Psychiatric Association, 1994). The GAF is rated on a scale from 0 to 100, where a high score represents better functioning. The GAF has been shown to be a reliable and valid indicator of the level of functioning associated with the severity of mental disorders (Hilsenroth et al., 2000).

In accordance with the DSM-IV, the principal diagnosis that was most likely to be responsible for the patient seeking treatment was selected as the principal diagnosis if the patient had more than one diagnosis on Axis I and II. The diagnostic interviews for DSM-IV axis I and II disorders in papers I and II were conducted by trained independent assessors. The trained independent evaluators performed the clinical assessments at intake, at discharge from therapy and at follow-up. During the training period, the evaluators made independent ratings of 20 randomly selected audiotapes of DSM-IV axis II interviews from the NMSPOP database. The intra-class correlation coefficient (ICC) (1, 2) for the presence, sub-threshold or absence of personality disorders covered by the SCID-II in the NMSPOP was 0.82 for a single rater, which is acceptable (see Hersoug, 2004 for details). Diagnostic interviews for axis I and II disorders in paper III were conducted by Professor Hans M. Nordahl at the start of treatment, and the BPD diagnosis was set by both the patient's physician (or previous therapist) and by Professor Nordahl.

3.4 Statistical analysis

3.4.1 Paper I

The statistical analyses used in paper I comprised paired-sample t-tests and chi-square tests with exact methods for analysing the outcome of therapy. Two analyses were performed for the primary and secondary outcome measures, one for only the patients who completed discharge and follow-up assessments, and one for the total sample using an intent-to-treat approach. For the intent-to-treat approach, the last recorded data were carried forward if data points were missing (LOCF analyses), which may give a more conservative estimate of treatment effect (Kazdin, 2003). Effect sizes (Cohen's *d*) were calculated using pooled standard deviations for admission, discharge and follow-up. The odds ratio (OR) was calculated for 2×2 contingency tables as an indication of the relative risk or effect size associated with the categorical variables, and Cramer's *V* was reported as an indication of the effect sizes for contingency tables larger than 2×2 (Field, 2005). The SPSS version 16.0 for Windows was used for all analyses.

3.4.2 Paper II

All analyses in paper II were performed using an intent-to-treat approach, where the last recorded data were carried forward if data points were missing (LOCF analyses) (Kazdin, 2003). McNemar's test with the exact method was used to test for differences between two related dichotomous variables, i.e. changes in diagnostic status from intake to follow-up. Independent t-tests and chi-square tests with exact methods were used when comparing remitted and non-remitted patients at the 2-year follow-up. Effect sizes (Cohen's *d*) were calculated using pooled standard deviations for admission and follow-up. Cramer's *V* was calculated for 2×2 contingency tables as an indication of the strength of an association or effect size associated with the categorical variables (Field, 2005). The SPSS version 17.0 for Windows was used for all analyses.

3.4.3 Paper III

The statistical analysis used in paper III was limited to effect size (ES), which was calculated on the mean change in individual test scores for pre- and post- or follow-up scores divided by the pooled standard deviation of the scores (Cohen, 1992). Cohen's *d* was used to estimate the size of changes in the group of six patients as a whole. A baseline was established for anxiety and depressive symptoms for all patients by measuring depressive and anxiety symptoms three times over a 10-week period before the start of treatment. The baseline scores of all patients with depressive or anxiety symptoms indicated that there was no evidence of spontaneous recovery over the 10-week period before the start of treatment.

3.5 Ethical considerations

All patients included in these studies gave their informed consent to participate in the trials. The research protocol for the NMSPOP study was approved by the Regional Committee for Medical Research Ethics for Eastern Norway.

4 Overview of the studies and the main results

4.1 Paper I

Several clinical trials have shown that psychotherapy is an effective treatment for borderline personality disorder, and most of these clinical trials were typically well-controlled and adhered to specific treatment manuals and/or restrictions on therapy time. However, the clinical practice in well-controlled trials is usually not in accordance with the typical clinical practice found at outpatient clinics. As a result, there is still little known about the long-term effectiveness of psychotherapy for patients with BPD conducted in a natural setting in outpatient clinics. The aim of the preliminary study presented in paper I was to investigate the long-term effects of non-manualized psychotherapy on an outpatient sample ($n = 32$) with a primary diagnosis of BPD. This study was based on an open-ended naturalistic design with a 2-year follow-up. Assessment at intake, discharge and follow-up comprised the structured clinical interview (SCID) for DSM-IV axis I and II, axis V (GAF), and the general level of self-

reported symptomatic (SCL-90R) and interpersonal distress (IIP-64C). The main result was that patients with BPD respond well to non-manualized psychotherapy as the intent-to-treat analyses estimated that 62% no longer met the DSM-IV criteria for a BPD diagnosis at discharge, which increased to 66% at the 2-year follow-up. In addition, significant improvements with large effect sizes were found for all outcome variables at both discharge and at follow-up. Attrition was associated with patient-therapist gender mismatch, low occupational status and the presence of post-traumatic stress disorder. Limitations of the study were linked to the naturalistic design of the study, as well as to the rate of attrition, and the small group of patients included in this study. The open-ended design meant that the therapists could end the treatment at a favourable point in the course of treatment, which could be linked to the large recovery rate in the discharge assessments. The therapies given were not controlled or subjected to adherence checks, and therefore little is known about the content of the psychotherapy applied. The strength of the study was the use of a multi-centre design, the use of independent assessors, and the relatively large number of therapists included. In conclusion, the overall results imply that the natural course of non-manualized psychotherapy may be beneficial for outpatients with BPD, and we believe that our study goes some way towards allaying concerns about the long-term effectiveness of psychotherapy in outpatient clinics for a common, but often difficult to treat, patient population found in the National Health Service. The patients showed considerable improvements over the course of 1-3 years, and these results are in accordance with recent outcome research on BPD which demonstrated that this personality disorder is treatable.

4.2 Paper II

Several clinical trials have shown that comorbid personality disorders can affect the outcome of treatment in patients with a primary borderline personality disorder (Links et al., 1998; Zanarini, Frankenburg, Vujanovic et al 2004; Zanarini et al., 2006). However, most of these clinical trials typically focused on severely disturbed inpatients who received treatment-as-usual (TAU). Treatment-as-usual does not necessarily include psychotherapy, as recommended in the treatment guidelines by the American Psychiatric Association (Oldham, et al., 2001). Therefore, little is known about the rate of

remission of comorbid personality disorders in patients with a primary BPD in outpatient clinics, or whether comorbidities are associated with the outcome of psychotherapy. The aim of paper II was to investigate the natural course of comorbid personality disorders in a sample of 32 patients with a primary BPD in outpatient care who received non-manualized open-ended psychotherapy. In contrast to previous research on this topic, the need for acute hospitalization was used as an exclusion criterion in this study. Thus, the patient population included in this study was probably less severely disturbed than the population in the study by Zanarini et al (2004; 2006).

In addition, paper II also explored the relationship between the lack of remission of BPD and comorbidity at the 2-year follow-up. The main result of the non-manualized psychotherapy for BPD was reported in paper I. Structured psychiatric interviews for DSM-IV PDs (SCID-II) were administered by independent assessors at intake, discharge and at the 2-year follow-up. Intent-to-treat analyses were used, where the last observation was carried forward with missing data (LOCF analyses). The main result was that the overall rate of comorbid axis II disorders was significantly reduced from intake to the 2-year follow-up. Patients with non-remitting BPD had significantly more PD diagnoses and symptomatic distress on all outcome measures at follow-up, where comorbid paranoid, avoidant and obsessive-compulsive personality disorders at two-year follow-up were associated with non-remitted BPD. However, the results of the current study suggest that especially BPD in combination with avoidant or obsessive-compulsive PD may reduce the probability of the remission of both BPD and the comorbid PDs. A proposed explanation of similar findings in inpatient samples by Links et al. (1998) and Zanarini et al. (2004; 2006) was that temperamental features associated with some comorbid PDs (e.g. shyness, rigidity, paranoid ideation) may make it difficult for patients with BPD to enlist the help and support of others in order to overcome their ambivalence and fearfulness of close relationships. In conclusion, comorbid personality disorders among outpatients with BPD can be expected to remit with time and with the remission of BPD. A possible clinical implication of these results is that comorbid avoidant and obsessive-compulsive personality disorders in particular may require specific attention in the treatment of patients with BPD.

4.3 Paper III

The aim of paper III was to investigate the effectiveness of schema therapy for BPD in a single case series as a preliminary study. This preliminary study was a natural first step towards testing the validity and effect of schema therapy on BPD in later randomized controlled trials. As the purpose of paper III was to evaluate the effectiveness of Young's schema therapy with a limited number of patients with a primary diagnosis of BPD, an A-B direct replication series with follow-up assessments at 12 months was implemented. Six patients who all had a primary DSM-IV BPD diagnosis were included in this study, with measurements of baseline levels of symptoms and, subsequently, pre-, post- and follow-up levels of clinical changes in BPD criteria, clinical impairments, global symptomatic distress and interpersonal problems. The treatment approach was comprised of the core elements of schema therapy with an emphasis on schema mode work and limited re-parenting. Improvements were large from baseline to follow-up, as indicated by the large effect sizes, and the improvements were clinically meaningful for five out of the six patients included. Three out of the six patients no longer fulfilled the criteria for BPD by the end of the treatment. The gains from therapy were maintained during the follow-up period, and only one out of the six patients relapsed. The patients reported that the schema mode conceptualization was easy to identify with; the crucial elements seemed to address the emotional deprivation of the patients and a nurturing base was provided by the therapist through limited re-parenting combined with developing skills for coping with the schema modes. The experiential techniques, which are an important part of schema therapy, was found to be particularly suitable for helping the patient with his or her childhood traumas, and also for helping the patients to develop their own self-soothing capacity and impulse postponement behaviours. Although the overall schema therapy model was effective for patients with BPD, controlled dismantling studies should be conducted in order to identify which element of schema therapy is sufficient or necessary for optimizing outcome. The limitations of this study were linked to the problem of generalization, and the lack of independent assessments and adherence checks. Delivery of the schema therapy relied upon only one experienced schema therapist, and this therapist also conducted assessments of the patients' BPD diagnoses after treatment. However, the self-report measures and the therapist's assessments showed a similar decrease in psychopathology, which is at odds

with the interpretation that the therapist's assessments were biased. The results of this preliminary study indicate that schema therapy could be an effective approach for treating patients with BPD.

4.4 Paper IV

The aim of paper IV was to present the most recent development in the therapy for borderline personality disorder: schema therapy. Schema therapy is a highly promising approach regarding both the treatment and understanding of borderline personality disorder. In recent years, this approach has received increasing interest in Scandinavia, the Netherlands, UK, and the US. Although many approaches for the treatment of BPD have been proposed, no single treatment approach seems to be the treatment-of-choice. New approaches are emerging and only during the past ten years have several cognitive behaviour-oriented therapies been developed for the treatment of people with borderline personality disorder. This article presented some of the essential features of the most recent and integrative cognitive approach for patients with borderline personality disorder, schema therapy, which was developed by Jeffrey E. Young and colleagues. The presentation is illustrated by some practical clinical guidelines based on the authors' clinical work using schema therapy with BPD patients (i.e. paper III). In conclusion, schema therapy seems to have the qualities of an integrative approach, using a set of terms that the patient easily can relate to and providing a clinical understanding of the patient's problem using new innovative techniques that are both experiential and interpersonal. In addition, schema therapy provides a clinically valid conceptualization of BPD that integrates useful elements from cognitive, interpersonal, psychodynamic and gestalt therapies.

5 Discussion

5.1 *The effectiveness of naturalistic outpatient psychotherapy for BPD*

Papers I and II suggest that non-manualised psychotherapy in outpatient clinics is a viable option, but that the treatment duration may be long and there are many obstacles to overcome. Paper I concluded that over the course of 1-3 years, patients with BPD showed considerable improvements and the rate of remission was fair. The therapy applied was open-ended and mostly reported by the therapists as being psychodynamic oriented psychotherapy. In accordance with paper I and II, the uncontrolled studies listed in Appendix I highlight that time in treatment often is long, and that outcome of therapy generally spans from good to poor. Although the number of patients in paper I and II is low (N = 32), the sample size is in line with previous uncontrolled studies on BPD, and the rate of attrition reported in paper I (i.e. 56% at 2-year FU) is in the general vicinity of studies listed in Appendix I (i.e. mean at FU: 40%, range 0 – 80%).

The dominance of psychodynamic oriented psychotherapy in the therapist sample in paper I, are also in line with standard clinical practice where psychodynamic psychotherapy long has been recommended as treatment-of-choice for BPD. Much of the research on therapy for BPD, have focused on the effectiveness of psychodynamic therapy or DBT, which is evident not only by the studies listed in Appendix I and II, but also by several meta-analysis (e.g. Kliem, Kroger, & Kosfelder, 2010; Leichsenring & Leibing, 2003; Perry, et al., 1999), literature reviews (e.g. Binks, et al., 2006; Brazier, et al., 2006; Verheul & Herbrink, 2007), and clinical guidelines (e.g. NICE, 2003; Oldham, et al., 2001).

In terms of the effectiveness of outpatient treatment, studies in Appendix I indicate that psychodynamic and cognitive therapy produces fair to poor outcome (Brown, Newman, & Charlesworth, 2004; Clarkin et al., 2001; Davidson & Tyrer, 1996; Jørgensen & Kjølbye, 2007; Korner, Gerull, Meares, & Stevenson, 2006; Najavits & Gunderson, 1995; Stevenson & Meares, 1992; Stevenson, Meares, & D'Angelo, 2005). In general the outcome seem to be somewhat unpredictable, but structured psychodynamic or cognitive therapy seem to produce fair to moderate outcome in shorter time compared with unstructured psychotherapy. This is highlighted by the rate of remission after one year of psychodynamic or cognitive therapy (i.e. Brown, et al., 2004; Stevenson &

Meares, 1992, 1999; Stevenson, et al., 2005), which is in the vicinity of what is reported in paper I for 1-3 year of non-manualised psychotherapy.

Several studies on day-hospital treatment are also listed in Appendix I (Karterud et al., 2003; Karterud et al., 1992; Kvarstein, Karterud, & Pedersen, 2004; Mehlum et al., 1991; Vaglum et al., 1990; Wilberg et al., 1998a), which all report outcome of non-manualised psychodynamic psychotherapy for a mixed sample of patients with and without personality disorders. Patients with BPD received between 4–8 months of day hospital treatment, and had an attrition rate ranging from 12–76% at 1 – 5 year FU. In general, patients with BPD can be expected to have a modest reduction in symptomatic distress and modest to negligible level of improvement in terms of general functioning with day treatment (Karterud, et al., 2003; Karterud, et al., 1992; Vaglum, et al., 1990). The gain of treatment was kept or increased during follow-up (Karterud, et al., 2003; Kvarstein, et al., 2004; Mehlum, et al., 1991). However, outcome was heterogenic where Karterud and colleagues (2003; 2007) reported that low weekly treatment intensity was marginally more beneficial for patients with BPD. In addition, Wilberg and colleagues (1998a) found that adding long-term outpatient group treatment as a continuation treatment to the day treatment programme resulted in fewer rehospitalisations, less symptomatic distress and better functioning compared with those patients that did not attend the outpatient group therapy. Three studies in Appendix I address DBT (Brassington & Krawitz, 2006; McQuillan et al., 2005; Shearin & Linehan, 1992) and indicated that standard DBT and shortened version of DBT produced fair to moderate level of improvement in terms of reduced suicidal behaviours. This is in line with the relatively large body of evidence supporting its use when suicidality and self-harm is most prominent to address in therapy (Scheel, 2000).

In light of the results from paper I and studies listed in Appendix I, individual outpatient psychotherapy may be beneficial for patients with BPD that are able to comply with the frames and structure of outpatient treatment, whereas more severely disturbed patients may need day treatment, DBT or partial hospitalization as part of a short-term stabilisation phase with long-term outpatient psychotherapy as continuation therapy.

In Papers III and IV we concluded that schema therapy is a recent treatment modality with promising effects on BPD, and patients reported that the schema mode conceptualization was easy to identify with and to use as a working model throughout the therapy. Although the schema therapy is a promising treatment modality for patients with BPD, little is known about the effectiveness of this treatment modality in ordinary clinical practice. Three recent RCTs on schema therapy has been conducted since our study (Farrell, Shaw, & Webber, 2009; Giesen-Bloo, et al., 2006; Nadort et al., 2009) and all have replicated the results reported in paper III using much larger patient samples and highly trained therapists (see also Appendix II). The RCT by Giesen-Bloo et al (2006) indicate that three year of schema therapy produce a moderate level of improvement on all outcome measures, with a conservative remission rate of BPD of 46%. In addition, as stated in paper III and IV, schema therapy was reported to be well tolerated by the patients, which is in line with the study by Giesen-Bloo et al (2006) which reported an attrition rate of 27% and that the patients reported a gradually better working alliance throughout therapy (Spinhoven, Giesen-Bloo, van Dyck, Kooiman, & Arntz, 2007). The development of the therapeutic alliance was linked to fewer dropouts and better outcomes. In paper III we used a single case series with 10 week baseline serving as a control condition, where the RCT by Farrell et al. (2009) was the first RCT on schema therapy which also applied a control condition. Farrell et al (2009) investigated if 30 weekly group sessions of schema therapy over an eight month period as an addition to TAU were more effective than TAU alone. TAU consisted of weekly individual psychotherapy, primarily supportive and eclectic in nature, where adding group schema therapy produced fair level of improvement with high degree of remission and low attrition. However, an economic cost-benefit analysis highlighted that the schema therapy package may be a more costly treatment package due to the additional phone support and the frequency of sessions (van Asselt et al., 2008), where a RCT by Nadort et al. (2009) found no additional effect on outcome by having access to extra crisis phone support outside office hours. However, therapist availability outside office-hours was suggested to reduce the need for informal care (e.g. help from relatives) and overall health care utilisation (Nadort, et al., 2009; van Asselt, et al., 2008). This suggests that more dismantling studies and studies on the implementation of schema therapy in to ordinary clinical care are needed.

5.2 Comorbidity and drop-out from psychotherapy

We reported in paper I, II, and III that comorbid axis I and II disorders were common among patients with BPD, but paper II indicated that comorbid PD were significantly reduced from intake to 2-year follow-up. The overall pattern of comorbidity presented in paper I, II and III was in line with previous studies (see also section 1.4 of the thesis), where comorbidity reported in paper I and II was associated with both drop-out and reduced effectiveness of outpatient psychotherapy. Paper I reported that early drop-out from therapy was linked with low socio-economic status, therapist-patient gender mismatch and concurrent PTSD, whereas paper II reported that BPD in combination with avoidant or obsessive-compulsive PD was associated with lack of remission of both BPD and the comorbid PDs. In addition, paper III reported that one patient did not keep the gain of therapy, mainly due to intra-familial conflicts.

In terms of attrition, several relevant factors have been identified in previous studies. These factors includes demographic factors, e.g. young age (Smith, Koeningsberg, Yeomans, Clarkin, & Selzer, 1995; Thormahlen et al., 2003), being male, divorced, single or separated (Links, et al., 1990), or having low education or living on a disability pension (Perroud, et al., 2010). Diagnostic characteristics have also been associated with drop-out, such as axis I substance use disorder, number of lifetime inpatient days (Kelly et al., 1992), poor premorbid functioning (Links, et al., 1990), having a comorbid axis II paranoid or antisocial PD (Links, et al., 1998; Links, et al., 1990), or having a mixture of comorbid cluster A and C PDs (Webb & McMurrin, 2009). In addition, having narcissistic features such as excessive requirement of admiration (Hilsenroth, Holdwick, Castlebury, & Blais, 1998), high impulsiveness, aggression, hostility, mistrust or failure to regulate strong negative affects aroused during treatment (Barnicot, Katsakou, Marougka, & Priebe, 2011; Gunderson et al., 1989; Hummelen, Wilberg, & Karterud, 2007; Links, et al., 1990; Smith, et al., 1995; Waldinger & Gunderson, 1984) have also been associated with drop-out. Interpersonal aspects such as insufficient family support (Gunderson, et al., 1989), external motivation to seek treatment (Webb & McMurrin, 2009), discontinuation of therapeutic relationships (Hummelen, et al., 2007), interpersonal rigidity (Thormahlen, et al., 2003), the quality of the therapeutic alliance (Barnicot, et al., 2011) have also been reported to increase the probability for drop-out. Thus, a wide variety of factors may be linked to reasons why patients with BPD have

been reported to have a high level of attrition, as reported in paper I and II or Appendix I or II. Engaging patients with BPD in treatment is a key element, and determinants of attrition and retention is therefore of substantial interest for further research.

5.3 The main limitations of the studies

Papers I and II used the same data set, and the main limitation was rate of attrition and low number of patients included ($N = 32$). Due to attrition, only 14 patients fulfilled the 2-year follow-up assessment, and the last observation carried forward (LOCF) procedure was therefore used in paper I and II as an intent-to-treat approach. Although LOCF is widely used in clinical research, the LOCF approach have been criticised as it can lead to biased estimations of the treatment effect (Sterne et al., 2009). The LOCF analyses have long been thought to ensure a conservative estimate of the treatment effect, as completer analyses may overestimate the effect due to the drop out of non-responders (Kazdin, 2003; Lane, 2008). However, statistical simulation studies with data from large RCT's have also shown that the LOCF procedure can produce inflated Type 1 error rates depending on the mechanism of drop-out between the conditions, expected treatment response, and natural course of the disorder (Lane, 2008; Siddiqui, Hung, & O'Neill, 2009; Sterne, et al., 2009). Thus, the LOCF can over- or underestimate the results depending on the reasons why the data is missing and expected prognosis over time (Altman, 2009; Lane, 2008), where patients with BPD can be expected to improve somewhat with time and with adequate treatment (Bateman & Fonagy, 2000; Lieb, et al., 2004; Paris & Zweig-Frank, 2001; Zanarini, 2009; Zanarini, et al., 2006). In general, the results in paper I and II may therefore be biased due to the substantial number of patients lost to follow-up. Hence, as patients with BPD can be expected to improve somewhat with time, drop-out and the use of LOCF may underestimate treatment effect in paper I, and overestimate the differences between the remitted and non-remitted patients in paper II. Furthermore, in paper I attrition during treatment was associated with factors that can be assumed to be unrelated to the main outcome measure of the study (e.g. patient-therapist gender match, socio-economic status) and may therefore be missing at random (Lane, 2008; Sterne, et al., 2009).

Multiple imputation models (MI) or Mixed model for repeated measurements (MMRM) is generally recommended when data is assumed to be missing at random (Siddiqui, et al., 2009), but using MI or MMRM could be problematic and result in biased estimations due to a low number of patients (N = 32) and a total attrition rate from admission to follow-up of 56% (Lane, 2008; Sterne, et al., 2009). In addition, as not all of the data can be assumed to be missing at random, other missing mechanism could inflate Type 1 error rates when using MI or MMRM (Lane, 2008; Siddiqui, et al., 2009; Sterne, et al., 2009). As the risk of bias due to missing data depends on assumptions of why the data is missing, no definitive method for handling missing data exist (Shih, 2002; Siddiqui, et al., 2009). Thus, the results in paper I and II are limited by large attrition rate and the use of LOCF. The results in paper I may be somewhat underestimated whereas the results in paper II may be more overestimated.

In terms of statistical power for paper I and II, power analyses was done retrospectively using Stata/SE 12.0. In paper I was the primary outcome number of criteria for BPD assessed with the SCID II and the assumptions for the power analysis was based on the mean and SD listed in Table 3. The results show that paired continuous data with N = 5 yields more than 90% power to find a difference between admission and follow-up with alpha (two-tailed) = 0.05. Statistical power analysis in paper II was based on paired binary data where avoidant PD was chosen in order to calculate the N needed for obtaining 80% power. For avoidant PD, the anticipated proportion of discordant pairs (π_D) was assumed to be 0.3 and odds ratio (OR: ψ) was assumed to be 1.4. Assumptions were derived from the data in paper II, Table I, and the data reported by Zanarini and colleagues (2004) for 290 patients with BPD. The power analysis show that N = 937 is needed with 80% power to find a difference between admission and follow-up with alpha (two-tailed) = 0.05. Thus, the statistical power was adequate for the main outcome measure of paper I, but the statistical power of the paired binary data analysis in paper II was affected by an initially low number of patients. Although the main result in paper II is in line with other studies with larger patient samples (e.g. Zanarini et al 2004), power analysis indicate that also the study by Zanarini and colleagues (2004) was affected by low statistical power due to the small observed difference between

admission and follow-up in terms of avoidant PD. Caution should therefore be used in generalisation of these results.

The results in paper III have limitations in generalization as it is a single case series, as well as limitations due to the lack of independent assessors and adherence checks. Although the use of only one therapist could limit the generalization of the schema therapy model, the outcome is in line with several RCTs conducted later on (i.e. Farrell, et al., 2009; Giesen-Bloo, et al., 2006; Nadort, et al., 2009). As this reflects consistency in data across researchers and across settings, it seems unlikely that the result in paper III is primarily dependent only on the therapist that conducted the schema therapy.

In conclusion, the overall limitations of the included studies are small sample sizes, the use of LOCF, and the rate of attrition. However, low number of patients and a substantial rate of attrition are not uncommon for clinical trials on BPD, as patients with BPD often have an erratic attendance and low compliance with treatment and research protocols. Thus, patients with BPD have been known to be challenging to do research on, and this Norwegian sample is no exception.

5.4 Implications of the findings

The implications are several, but we will discuss only a few. Firstly, paper I underlines the fact that not all “treatment-as-usual” procedures produce poor outcomes, as patients with BPD in outpatient care who received one to three years of active psychotherapy showed considerable improvements. Secondly, paper III indicates that schema therapy seems to be a promising treatment for BPD; it conceptualizes the disorder in a way that seems to appeal to the patients. However, replication of outcome studies as well as dismantling studies on the principles and techniques of schema therapy are needed. Most clinical trials on schema therapy used individual therapy, but one recent RCT indicated that schema therapy can be as effective when delivered in a group setting. The benefits of group-delivered schema therapy need to be further explored with larger patient samples and using better controlled designs. Thirdly, axis I and II comorbidities may have an impact on attrition and the gain from therapy and should be carefully

addressed in treatment planning and in therapy in order to minimize the probability of dropout and to maximize the gains from therapy.

5.5 Conclusions

Schema therapy may be a promising new treatment of BPD as the findings in paper III has later been replicated by several RCTs. The results presented in papers I and III, indicate that outpatient psychotherapy may produce clinically significant changes in a wide variety of symptoms of BPD and co-occurring conditions, and that the gain from therapy was sustained for 1-2 years after therapy has ended. This is in accordance with studies presented in Appendix I and II, which also indicate that a variety of different psychotherapies and psychosocial treatment modalities seem to be beneficial for outpatients with BPD, whereas TAU in general seems to be marginally effective in the treatment of BPD. However, paper I and II suggest that non-manualized psychotherapy may be a more beneficial treatment than expected for patients with BPD, but time in treatment is often long compared with more active and structured outpatient psychotherapy modalities listed in Appendix I and II. Although non-manualized psychotherapy has an impact on BPD and axis II comorbidity, paper II indicates that specific PDs (paranoid, avoidant, obsessive-compulsive PD) combined with BPD may reduce the outcome of therapy. It is, however unknown, if this also is the case for manualised treatments, e.g. dialectical behaviour therapy, mentalization-based treatment, schema therapy or transference-focused psychotherapy, as more studies on comorbidity are warranted. To the best of the author's knowledge, only a handful of studies have been published on the outcome of outpatient individual psychotherapy in ordinary clinical care, and more studies are warranted in order to replicate the findings presented in this thesis.

Patient samples in the clinical trials reviewed in the thesis (Appendix I and II) indicate that patients with BPD are a heterogeneous group in terms of severity and functional impairment. As different treatment modalities seem to target somewhat different core features, i.e. suicidal and self-harming behaviours, self-esteem, perception of self,

amongst others, more studies are needed on which treatment modality is optimal for sub-groups of patients with BPD, and to investigate if a sequential combination of different treatment modalities could enhance recovery from BPD and, if possible, reduce the time-in-treatment.

Main points of the thesis

- Non-manualized psychotherapy may be beneficial for outpatients with a primary BPD. However, structured and active treatments for BPD produce better results compared with treatment-as-usual, which suggest that an implementation of structured treatment modalities may strengthen ordinary clinical care.
- Axis I and II comorbidity must be considered in the treatment of BPD as these are prognostic for dropout and gains of the treatment.
- Patients with a primary diagnosis of BPD have a substantial number of comorbid personality disorders, but one can expect significant remission with time and treatment. Comorbid avoidant and obsessive-compulsive personality disorder may require specific attention in treatment of patients with BPD to enhance the prognosis of recovery.
- The case series on schema therapy for six outpatients with BPD seem to be effective and the effect was kept at one year of follow-up. This finding was later replicated and verified in larger RCTs.

6 References

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7 Appendix I: An overview of uncontrolled studies of outpatient treatment of borderline personality disorder: duration, attrition, outcome and recovery rate

Study	Study Design; Treatment;	Patient Sample (N) ^a	Attrition ^b	Outcome variables	Main Outcome Results	Outcome time ^c	Recovery rate BPD
Waldinger & Gunderson (1984)	Retrospective Naturalistic; Unspecified psychotherapy; Average 3.4 sessions/week	BPD DSM-III (N = 54) & BPO (N = 24)	60%	BPD psychopathology; symptomatic distress; Multidimensional functioning	Modest to fair outcome on all measures; Outcome was associated with length of treatment and amount of prior treatment.	Average 4.4 years to discharge	N/A
Vaglum et al (1990); Mehlum et al (1991); Karterud et al (1992)	Prospective Naturalistic; Non-manualised Psychodynamic psychotherapy; Average 5.5 months of Day treatment (individual and group).	DSM-III-R (Mixed sample: BPD N = 34)	26% at FU (15% at discharge)	Symptomatic distress; Multidimensional functioning	Modest level of improvement in symptomatic distress; Negligible improvement in social functioning; Completer analysis.	Average of 2.8 year FU	N/A
Shearin & Linehan (1992)	Prospective, open process study; DBT	DSM-III-R/ DIB (N = 4)	0%	BPD psychopathology; functioning	Therapeutic relationship was associated with reduced suicidal behaviour	7 months	N/A
Davidson & Tyrer (1996)	Prospective Single case series; CBT with DBT principles	DSM-III-R (BPD N = 7)	57%	Symptomatic distress; functioning	Some reduction on all outcome measures; no statistical significant results; Completer analysis	Average 4 months to discharge	N/A

Stevenson et al (1992, 1999; 2005); Korer et al (2006); Gerull et al (2008)	Prospective Naturalistic; 12 months of structured psychodynamic psychotherapy & Replication study.	DSM-III-R/ DIB (N = 48) & DSM-III-R (N = 60)	38% at 1 year FU	BPD psychopathology; symptomatic distress; Multidimensional functioning	Fair level of improvement on all outcome variables; reduced utilization of health services; gain of treatment was maintained at 5 yr FU; Completer analysis. Study was replicated in 2006 with similar results.	2 and 5 year	40% at five year FU, 30% at 1 year FU & N/A
Najavits & Gunderson (1995); Sabo et al (1995)	Prospective Naturalistic; Average 2.7 year of unspecified individual psychotherapy.	DSM-III/DIB (N = 37)	46% at 3 year (38% at 2 year, 11% at 1 year)	BPD psychopathology; symptomatic distress; Multidimensional functioning	Fair level of Improvement on all outcome variables; reduced suicidal behaviour; negligible reduction in suicidal or self-harm ideation; Completer analysis.	3 and 5 year	N/A.
Wilberg et al (1998b)	Retrospect Naturalistic; Psychodynamic oriented day treatment with/without additional outpatient group psychotherapy.	DSM-III/ DSM-III-R (N = 49)	12% at FU	Symptomatic distress; functioning	Modest improvement on all outcome measures; outpatient treatment was a beneficial addition to day treatment; Completer analysis.	Average 2.8 year after discharge	N/A.

Clarlin et al (2001)	Prospective open clinical trial; 12 months Transference-focused psychotherapy	DSM-IV (N = 23)	26% at discharge	BPD psychopathology; Global functioning.	Negligible improvement in overall self-destructive behaviour; fewer hospitalizations and suicide attempts; Completer and intent-to-treat analysis.	12 month	N/A
Karterud et al (2003)	Prospective Naturalistic; Psychodynamic oriented day treatment (group therapy) for 4½ months and outpatient group therapy.	DSM-III-R /DSM-IV (Mixed PD sample: BPD N = 275 ^d)	31% at 1 year FU	Symptomatic and interpersonal distress; Multidimensional functioning	Modest level of improvement in all outcome variables except work function; Gain of treatment was maintained and improved during FU; Completer analysis.	16 ½ months	N/A
Kvarstein et al (2004)	Prospective Naturalistic; Psychodynamic oriented day treatment (group therapy) for 4½ months & outpatient group therapy.	DSM-III-R / DSM-IV: BPD N = 33 ^e)	46% at discharge (59% at 1 year FU, 76% at five year FU)	Symptomatic and interpersonal distress; Global functioning.	High drop-out, Some improvement in all outcome variables during day treatment; Negligible improvement during FU; Completer analysis.	5 year	N/A
Brown et al (2004)	Prospective open clinical trial; 12 months of CBT	DSM-IV (N = 32)	25% at 18 months FU	BPD psychopathology; symptomatic distress; maladaptive beliefs.	Modest level of improvement on all outcome measures; Little change in suicidal ideation; Gain of treatment was maintained during FU; Intent-to-treat and completer analysis.	18 months	28% at discharge / 55% at FU

McQuillan et al (2005)	Prospective Naturalistic; 3 weeks intensive version of DBT (individual and group therapy)	DSM-IV: IPDE Self-report, 94% with BPD (of N = 87)	18 %	Symptomatic distress; social functioning.	Moderate improvement in depression, little improvement in hopelessness and social functioning; Completer analysis.	3 weeks	N/A
Brassington et al (2006)	Prospective open clinical trial; 6 months of DBT	DSM-IV / IPDE (N = 10)	0%	Psychopathology; symptomatic distress; functioning.	Fair level of improvement on all outcome measures; fewer hospitalisations.	6 months	N/A
Jørgensen et al (2007)	Prospective Naturalistic; 24 months of structured individual and group psychoanalytical psychotherapy.	DSM-IV-TR (N = 19)	42% at 15 months of treatment (79% at 2 year, i.e. discharge)	Symptomatic distress; Global functioning.	High drop-out, negligible improvement in symptomatic distress, modest improvement in functioning. Completer analysis (at 15 months of treatment).	15 months and 2 ½ year	N/A

Notes: a) Number of patients with BPD at start of treatment; b) Attrition defined as any loss of patients eligible for treatment; c) Length of time patients are followed after admission to treatment; d) number of patients with BPD as main diagnosis; e) Subsample of severely disturbed patients derived from Karterud et al (2003).

Abbreviations: BPO = Borderline personality Organization; DIB = Diagnostic Interview for BPD; DBT = Dialectical Behaviour Therapy; FU = Follow-up; IPDE = International Personality Disorder Examination Screening; N/A = Not available; TAU = Treatment as usual.

8 Appendix II: An overview of RCT of outpatient treatment of borderline personality disorder from 2006 to 2010: duration, attrition, outcome and recovery rate

Study	Study Design; Treatment;	Patient Sample N ^a	Attrition ^b	Outcome variables	Main Outcome Results	Outcome time in months ^c	Recovery rate BPD
Giesen-Bloo et al (2006)	Two-arm RCT; ST vs. TFP; 36 months treatment with twice-a-week individual session	DSM-IV BPD N = 88 (ST = 44; TFP = 42)	ST 27%; TFP 51%	BPD psychopathology; Symptomatic and interpersonal distress; Multidimensional functioning	Modest level of improvement in all outcome variables for both treatment arms; ST had better outcome compared to TFP; high level of drop-out from TFP; intent-to-treat analysis	36 ^d	ST 46% TFP 24%
Davidson et al (2006a; 2006b)	Two-arm RCT; CBT+TAU vs. TAU; CBT: 30 individual sessions over a 12 month period; TAU (incl. a wide variety of hospital-, primary- and community services).	DSM-IV BPD N = 106 (CBT+TAU = 54; TAU = 52)	CBT+TAU 3% ^e ; TAU 17%	BPD psychopathology; suicidality and self-harm; Health care utilisation; Symptomatic distress; Multidimensional functioning	Adding CBT to TAU resulted in modest improvement in overall self-destructive behaviour, fewer hospitalizations and suicide attempts vs. TAU; No difference between treatment arms in terms of symptomatic distress or functioning; Intent-to-treat analysis.	24	N/A
Weinberg et al (2006)	Two-arm RCT; MACT+TAU vs. TAU; MACT consist of 6 individual sessions over a 2 month period; TAU (included individual and group therapy, medication, self-help groups, GP).	DSM-IV BPD N = 30 (MACT+TAU = 15; TAU = 15)	0%	Suicidality and self-harm; health care utilisation.	Adding MACT to TAU resulted in modest improvement in frequency of self-destructive behaviour, fewer hospitalizations and suicide attempts vs. TAU; No difference between treatments arms in	6	N/A

					terms of suicidal ideation or severity of self-harm.		
Linehan et al (2006)	Two-arm RCT; 12 month treatment; DBT vs. CTBE; DBT consisted of weekly individual and group session; CTBE was uncontrolled and mostly consisted of weekly individual psychodynamic oriented psychotherapy.	DSM-IV BPD N = 111 (DBT = 60; CTBE = 51)	DBT 19%; CTBE 43% ^f	Suicidal and self-harm acts; health service utilization; Symptomatic distress.	Modest to fair level of improvement in most outcome variables for both treatment arms; DBT had less health care utilization compared to CTBE; less drop-out in the DBT arm; Intent-to-treat analysis.	24	N/A
Clarkin et al (2007)	Three-arm RCT; 12 months treatment; TFP vs. DBT vs. SUPT; TFP: twice-a-week individual sessions; DBT: weekly individual and group session; SUPT: once-a-week individual sessions with additional sessions if needed.	DSM-IV BPD N = 90 (TFP = 30; DBT = 30; SUPT = 30)	TFP 23%; DBT 43%; SUPT 27%	BPD psychopathology; Symptomatic distress; Social functioning	Modest level of improvement in all outcome variables for all treatment arms; TFP and DBT had better outcome compared to SUPT; Intent-to-treat and completer analysis.	12	N/A
Blum et al (2008)	Two-arm RCT; STEPPS+TAU vs. TAU; STEPPS consisted of 20 weekly group sessions; TAU (including individual psychotherapy, medication, case management).	DSM-IV BPD N = 124 (STEPPS = 65; TAU = 59)	STEPPS 31% ^g ; TAU 14%	BPD psychopathology; Symptomatic distress; health care utilisation; Multidimensional functioning	Modest level of improvement for most outcome variables for the STEPPS+TAU arm vs. TAU; no differences between treatment arms in frequency of suicide attempts, self-harm acts or hospitalizations; Intent-to-treat analysis.	17	N/A
Gregory et al (2008; 2010)	Two-arm RCT; 12 month treatment; DDP vs. TAU; DDP consisted of individual weekly psychotherapy; TAU consisted mainly of unspecified outpatient	DSM-IV BPD N = 30 (DDP = 15; TAU = 15)	DDP 47%; TAU 47%	Suicidal and self-harm acts; health care utilization; alcohol misuse; symptomatic distress; BPD psychopathology	Moderate level of improvement for most measures for the DDP arm vs. TAU; no differences between treatment arms in terms of social support; gains of	30	N/A

treatment.		therapy was kept at follow-up; Intent-to-treat analysis.	
Nadort et al (2009)	Two-arm RCT; 18 months twice-a-week individual sessions treatment of ST with/without extra phone support outside office hours	DSM-IV BPD N = 62 (ST Phone = 32; ST = 30)	ST Phone 22%; ST 20%
		Reliable change in BPD psychopathology; Symptomatic and interpersonal distress; Multifidimensional functioning	Fair level of improvement in all outcome variables for both treatment arms; No differences in outcome with/without extra phone support outside office hours; intent-to-treat analysis.
			18 ^h ST Phone 42% ST 43%
Farrell et al (2009)	Two-arm RCT; ST+TAU vs. TAU; ST consisted of 30 session of ST group therapy over an 8 month period; TAU (included individual supportive psychotherapy, medication).	DSM-IV BPD N = 28 (ST+TAU = 16; TAU = 12)	ST+TAU 0%; TAU 25%
		BPD psychopathology; Symptomatic distress; Social functioning	Fair level of improvement in all outcome variables for the ST+TAU treatment arm vs. TAU; Intent-to-treat analysis.
			14 ⁱ ST+TAU 94%; TAU 16%
Cottraux et al (2008)	Two-arm RCT; 12 month of individual treatment; CBT vs. RST. The therapists were the same in both arms.	DSM-IV BPD N = 65 (CBT = 33; RST = 32)	CBT 70%; RST 66% ^j
		General psychopathology; Symptomatic distress; Self-harm; Functioning	No differences between treatment arms during treatment; Modest level of improvement in the CBT arm vs. RST at FU; Better rating of alliance for CBT vs. RST; Completer analysis.
			24 N/A
Bateman & Fonagy (2009a, 2009b)	Two-arm RCT; 18 month of treatment; MBT vs. SCM; MBT consist of weekly combined individual and group psychotherapy; SCM was counselling based and consisted of individual and group session once a week.	DSM-IV BPD N = 134 (MBT = 71; SCM = 63)	MBT 27%; SCM 25%
		Suicidality and self-harm behaviour; Utilization of health care; Symptomatic and interpersonal distress; Functioning.	Modest level of improvement in all outcome variables for both treatment arms; MBT had better outcome compared to SCM at 18 month; Intent-to-treat analysis.
			18 N/A

Soler et al (2009)	Two-arm RCT; 3 month treatment; DBT skill training (DBT-ST) vs. SGT; DBT-ST consisted of structured skill training in a group setting; SGT was psychodynamic oriented group therapy.	DSM-IV BPD N = 59 (DBT-ST = 29; SGT = 30)	DBT-ST 36%; SGT 63%	BPD psychopathology; Symptomatic distress; Functioning; health care utilization	Modest improvement in measures of mood-emotion and general psychopathology for the DBT-ST; Negligible Improvement for SGT; Intent- to-treat analysis.	3	N/A
McMain et al (2009)	Two-arm RCT; 12 month treatment; DBT vs. GPM; GPM included a combination of psychodynamic oriented therapy and symptom-targeted medication.	DSM-IV BPD N = 180 (DBT = 90; GPM = 90)	DBT 39%; GPM 38%	Suicidality and self-harm; BPD psychopathology; Symptomatic and interpersonal distress; Functioning; Health care utilization	Modest to fair level of improvement in most outcome variables for both treatment arms; No difference between treatment arms were found; Completer and intent-to-treat analysis.	12	N/A
Bos et al (2010)	Two-arm RCT; STEPPS+TAU vs. TAU; STEPPS consisted of 18 weekly group sessions and 9 individual sessions; TAU (included individual therapy, medication, case management).	DSM-IV BPD and sub- syndromal BPD N = 79 (STEPPS+TAU = 43; TAU = 37)	STEPPS+ TAU 21%; TAU 11%	BPD psychopathology; Symptomatic distress; Functioning	Modest level of improvement for most outcome variables for the STEPPS+TAU arm vs. TAU; no differences between treatment arms in terms of impulsive and self-harm acts; Completer and intent-to-treat analysis.	10 ½	N/A

Notes: a) Number of patients at start of treatment; b) Attrition defined as any loss of patients eligible for treatment; c) Length of time patients are followed after admission to treatment; d) Patients still in treatment after three years: ST = 27, TPF = 19; e) Irregular attendance by the CBT patients: 51% attended more than 15 sessions, 26% attended more than 28 sessions over a year; f) Patients could choose reassignment to a new therapist within the same condition twice, % stated was for patients who dropped all study therapy, patients who dropped out from the first therapist was DBT: 25% vs. CTBE: 59%; g) % of patients who did not complete intervention per protocol; h) 79% of the patients were still in treatment after 18 months; i) Inclusion criteria was that the patient had to have stayed in individual psychotherapy (i.e. TAU) for at least 6-months prior to study start; j) attrition at 1 year was CBT: 40% vs. RST: 44%.

Abbreviations: CBT = Cognitive Behaviour Therapy; CTBE = Community treatment by experts; DBT = Dialectical Behaviour Therapy; DBT-ST = Dialectical behavior therapy skills training; DPP = Dynamic deconstructive psychotherapy; FU = Follow-up; GP = General practitioner; GPM = General psychiatric management; MACT = Manual assisted cognitive treatment; MBT = Mentalization-based treatment; N/A = Not available; RST = Rogerian Supportive Therapy, SCM = Structured clinical management; SGT = Standard group therapy; ST = Schema Therapy; STEPPS = System training for emotional predictability and problem solving; SUPT = Supportive Treatment; TAU = Treatment as usual; TFP = Transference-Focused Psychotherapy.

9 Appendix III: Papers I – IV

- I. Nysæter, T. E., Nordahl, H. M., & Havik, O. E. (2010). A preliminary study of the naturalistic course of non-manualized psychotherapy for outpatients with Borderline Personality Disorder: patient characteristic, outcome and attrition. *Nordic Journal of Psychiatry*, *64*, 87-93.

- II. Nysæter, T. E., & Nordahl, H. M. (2012). Comorbidity of borderline personality disorder with other personality disorders in psychiatric outpatients: How does it look at two year follow-up? *Nordic Journal of Psychiatry*, *66*, 209-214.

- III. Nordahl, H. M. & Nysæter, T. E. (2005). Schema therapy for patients with Borderline Personality Disorder: a single case series. *Journal of Behaviour Therapy and Experimental Psychiatry*, *36*, 254-264.

- IV. Nysæter, T. E. & Nordahl, H. M. (2008). Principles and clinical application of schema therapy for patients with borderline personality disorder. *Nordic Psychology*, *60*, 249-263.

Paper I

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Paper II

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Paper III



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Schema therapy for patients with borderline personality disorder: a single case series

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Abstract

The effectiveness of schema therapy for patients with borderline personality disorder (BPD) developed by Young was investigated using a single case series trial of six patients who all had primarily a DSM-IV BPD diagnosis. The treatment approach comprised the core elements of schema therapy with an emphasis on schema mode work and limited re-parenting. An A–B direct replication series with follow-up assessments at 12 months was implemented. From baseline to follow-up improvement was large, as indicated by large effect sizes, and improvement was clinically meaningful for five of the six patients included. Three of the six patients did not any longer fulfill the criteria for BPD by the end of the treatment.

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Keywords: Borderline personality disorder; Schema therapy; Single case series

1. Introduction

Borderline personality disorder (BPD) is one of the most prevalent personality disorders in both in- and out-patient clinics (Maier, Lichtermann, Klingler, Heun, & Hallmayer, 1992; Maier et al., 1992; Moldin, Rice, Erlenmeyer-Kimling, & Squires-Wheeler, 1994). Many approaches for treatment are proposed for BPD, but there is

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no single treatment approach that seems to be the treatment of choice, although therapy in the form of psychodynamic psychotherapy or dialectical behavior therapy (DBT) is suggested (Oldham et al., 2001).

New approaches are emerging and during the last decade several cognitively oriented approaches have been developed for treating patients with BPD. Among these are cognitive therapy (Beck, Freeman, & Associates, 1990; Layden, Newman, Freeman, & Byers Morse, 1993; Freeman & Fusco, 2003), rational emotive therapy (Ellis, 2001), cognitive coping therapy (Sharoff, 2002), cognitive evolutionary therapy (Liotti, 2002) and schema therapy (Young, 1996; Young & Behari, 1998; Young, Klosko, & Weishaar, 2003; Arntz, 2004).

Schema therapy is based on a cognitive–integrative conceptualization of personality disorders using a broader and more eclectic approach than the usual cognitive therapy approaches, integrating various theoretical formulations (Young, 1994; Arntz, 1994; Young, Klosko, & Weishaar, 2003). Schema therapy targets the establishment of a working relationship through emphasizing the patient's emotions and bonding issues. By specific interventions such as limited re-parenting combined with experiential techniques on adverse childhood interpersonal experiences the patient learns to contain and endure the negative effects of abandonment and despair. In the therapeutic model, the schema mode change is emphasized, where the patient learns to deal with his or her various modes (abandoned child, angry child, punitive parent and detached protector) through experiential techniques and the therapy relationship. By working with a modification of schema modes and maladaptive coping styles the patients are treated for periods of 1–4 years (Young & Behari, 1998; Young, Klosko, & Weishaar, 2003). Schema therapy has rapidly developed into a therapy of wide interest, particularly in the United Kingdom, Scandinavia and the Netherlands. However, schema therapy is not yet a comprehensive and fully empirically-validated theory and therapy of personality pathology in general or of BPD in particular. The concepts used in schema therapy, such as early maladaptive schemas or schema modes, were not developed to correspond directly to any specific personality disorder, but are supposed to define core structures of personality pathology (Young & Gluhoski, 1996). Validation of the role of early maladaptive schemas and schema modes, and relationship to the various personality disorders are now published in several recent studies (Petrocelli et al., 2001; Jovev & Jackson, 2004; Rijkeboer, van den Bergh, & van den Bout, 2005; Nordahl, Holthe, & Haugum, 2005; Arntz, Klokman, & Sieswerda, 2005; Lobbstaël, Arntz, & Sieserda, 2005), and the findings are consistent in showing the strong sensitivity of personality pathology.

There is, to our knowledge, no published randomized and controlled study of the efficacy of schema therapy for BPD or for any other specific personality disorder. However, there is one unpublished study conducted by Giesen-Bloo, Arntz, van Dijck, Spinhoven, & van Tilburg (2004), comparing schema therapy with transference focused psychotherapy (TFP). In a multi-site trial, 88 patients were randomized either to schema therapy or to TFP, and they were all treated for a maximum of 3 years. By comparing the treatments on cost-effectiveness, changes in borderline criteria and quality of life, the authors found that schema therapy was

superior to TFP. In addition, the dropout rate was significantly lower in the schema therapy condition (Giesen-Bloo et al., 2004).

Due to the great efforts needed to test the validity and effect of schema therapy of BPD in a randomized controlled trial, a natural first step was to do a preliminary study of the effectiveness of schema therapy of BPD in a single case series. Thus, the purpose of the present study was to evaluate the effectiveness of Young's schema therapy with a limited number of patients with primarily a diagnosis of BPD. In order to do so we set up a study measuring baseline levels of symptoms, and subsequently the pre-, post- and follow-up levels of clinical changes in BPD criteria, clinical impairment, global symptomatic distress and interpersonal problems.

2. Method

2.1. Design

A single case series using an A–B design, with 12 months follow-up was implemented (Barlow & Hersen, 1984). All patients were measured pre-treatment three times, over a 10 weeks period, with symptom measures on anxiety and depression as a baseline control measure. In addition the patients were assessed pre-treatment on clinical interviews, and the SCID-I and II. The battery of measures was administered at pre-treatment, at 20th session, at 40th session, at post-treatment (65–120 sessions) and by follow-up (12–16 months after termination). The pre-treatment consultations were brief and did not involve any treatment or interventions.

2.2. Subjects

There were six patients, all women, who were referred to therapy for their BPD at our outpatient clinic, Department of Clinical Psychology. They were consecutively treated as they were referred, starting with the first patient in 1998 and all patients had completed treatment by the end of 2003. All patients satisfied the DSM-IV criteria for BPD (American Psychiatric Association (APA), 1994). Four patients had a co-morbid diagnosis of recurrent major depression, two patients were dysthymic, two patients had an eating disorder diagnosis (Bulimia Nervosa), and three patients had anxiety diagnoses, such as social phobias or obsessive compulsive disorder. One patient had a diagnosis of substance abuse (alcohol) and two patients had unspecific somatoform disorder (pain). The patients had also co-morbid diagnoses of other axis II disorders: two patients had avoidant, one had dependent and one had histrionic personality disorder. However, their main diagnosis based on the clinical assessment was BPD with moderate to severe impairment. The patients' age ranged from 19 to 42, and three of them were married, one lived together with her partner, and two were single at the time of inclusion. Three of them had part-time jobs, one was unemployed and two were students. All of them had received psychological or psychotropic treatment before ($M = 3.1$ years). Three of the patients were treated

with psychotropic medication (SSRI, lamotrigin) at the start of the study, but none of them was taking the medications on a regular basis, so they were asked to stop using them during the trial. A short presentation of the patients follows:

Patient 1: A 26-year old married female with two children. She worked part time as a waitress in a café. She was repeatedly on sick leave and was referred to treatment by her physician for anxiety and depression. She had on a previous occasion been treated with both psychotherapy and psychotropic medications. Her husband was reported to have been abusive with her, and she had suicidal ideas and one episode of a suicidal attempt.

Patient 2: A 19-year old female with a boyfriend and no children. She had left school in her mid-teens and had since then been supported by the social welfare care, by boyfriends or by her parents. She was severely depressed at the time of referral and had self-mutilated by burning herself with cigarettes. The patient had been treated with various forms of therapies and medications, but she had a history of treatment non-compliance and drop-outs. She had been sexually abused as a child and has also been exposed to sexual assault in adult life. No suicidal attempts were reported, but she had outbursts of anger towards family members that she was unable to control.

Patient 3: A 24-year old, single, female student with a history of recurrent major depression, and eating disorder (bulimia). She was referred to treatment by her physician due to social anxiety, suicidal ideas, and abuse of pills and alcohol. She has been treated with psychotropic medication in periods over the last 3 years, but did not receive any psychotropic treatment by referral. Her impulsive behavior was related to casual sexual relationships and substance abuse, and by the time of referral she was about to drop-out from her studies.

Patient 4: A 22-year old married housewife with a 2-year old child. Her husband was a salesman and was traveling frequently on business trips. She suffered from recurrent depressive disorders and bulimia. She had been treated with therapy at an outpatient clinic for two periods. She was taking psychotropic medication at the time of inclusion, but did not use them as prescribed. She agreed to stop the medication at the start of her treatment. She had no episode of suicidal attempts, but she struggled with suicidal ideas and was jealous especially on the days when her husband was away.

Patient 5: A 42-year old, married mother of one teenage child. She was on sick leave from her job as a cleaner in a primary school, and suffered from a lot of recurrent depressions and suicidal ideas. She had received psychotherapy several times during the last 15 years and been treated with psychotropic medication on previous occasions. She was on and off SSRI medication by the time of referral, but she wanted to stop using drugs when she was included in the therapy trial. She had been hospitalized on one occasion in her early 20s for depression and suicidal behavior.

Patient 6: A 21-year old single female with no children. She was in her second year of college to become a pre-school teacher. She suffered from anxiety disorders, dysthymia and unspecific pain symptoms. She was treated with group therapy on a previous occasion but quit attending the group, as she felt completely left-out. She

reported that she was not able to manage her anger in the groups, so she preferred individual therapy. She had some self-damaging or self-punishing behaviors such as denying herself pleasures and deliberately starving herself. She reported of having been sexually abused by one of her grandfathers, as a child.

2.3. Instruments

A clinical assessment of the patients' axis I and axis II diagnoses was conducted before inclusion and by post-treatment (SCID-I and SCID-II). The BPD diagnosis was set by both the patient's physician (or a previous therapist) and by the therapist in the study. In addition, a comprehensive battery of standard self-report measures were administered. These measures included the symptom checklist 90, revised (SCL-90R; Derogatis, 1992), Beck depression inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), Beck anxiety inventory (BAI; Beck, Epstein, Brown, & Steer, 1988), inventory of interpersonal problems (Horowitz et al., 1988), and the Young schema questionnaire (YSQ, second ed.; Young & Brown, 1991).

The SCL-90-R global severity index (GSI) was used as an indicator of current intensity and perceived distress (Derogatis, 1992), and the IIP was used as a global score of non-specific interpersonal distress (Horowitz et al., 1988). The maladaptive schemas were measured as a composite of abandonment/instability (AB), mistrust/abuse (MA), emotional deprivation (ED), and defectiveness/shame (DS). These are the most prominent schemas of patients with BPD (Young & Behari, 1998). In addition, the DSM-IV general adaptive functioning scale (GAF; axis V) was used as a global indicator of functioning, and severity ratings of adaptive functioning (GAF) were done by the therapist at pre-treatment and at post-treatment.

2.4. Procedure

The treatment followed the protocol outlined by Young (1996). The authors devised a Norwegian checklist based on the protocol, which was used as guidelines throughout the therapies. An outline and the clinical application of the treatment are presented in Nordahl and Nysæter (2005). See also schema therapy for BPD on the following internet address www.schematherapy.com.

The patients were treated for at least 18 months, to a maximum of 36 months, so the patients did not have a fixed number of sessions. The patients received treatment on a weekly basis and were administered questionnaires at every session. The sessions were each of 60 min duration for a mean period of 22 months (18–36 months range). Treatment was faded at least 6 months by the end of the therapy for all patients. The patients were treated by the same therapist (HMN), who has had appropriate training and experience with schema therapy. Training and teaching had been provided by the developer of schema therapy (Jeffrey E. Young), as part of an educational program in advanced cognitive therapy. In addition to the patient's therapist, a team consisting of the referring physician and a nurse from the local community healthcare were involved in the treatment to provide help with medical

and practical domestic problems. These two had a more supportive role, but they were meeting the therapist on a regular basis. The main elements of the therapy were (1) to develop a schema mode formulation of the patients in order to share an understanding of the patient's modes, distress and interpersonal difficulties, (2) to bond with the patient through re-parenting (soothing, support, guidance) and helping the patients with their emotional deprivation, (3) work on schema modes and interpersonal coping skills, (4) managing crisis and enhancing problem solving, and (5) gradual termination and fading of therapy (Young, 1996; Young & Behari, 1998).

3. Results

The patients' scores on the anxiety symptoms, depressive symptoms, general symptomatic distress, interpersonal distress during pre-treatment, treatment periods, at post-treatment and follow-up are shown in Fig. 1. For the patients' depressive (BDI) and anxiety (BAI) symptoms the baseline measures are also shown. Baseline scores of all patients on depressive or anxiety symptoms indicate that there was no evidence of spontaneous recovery over a 10 weeks period before the commencement of schema therapy. Note that the global scores of the SCL-90-R and the IIP were multiplied by 10 in order to fit them into Fig. 1.

Effect size (ES) is the effect vs. standard deviation (s.d.) ratio, and is calculated on the mean change in the individual test scores for pre- and post- or follow-up scores divided by the pooled s.d. of the scores (Cohen, 1992). By using Cohen's *d* for estimating the size of changes in the group of 6 patients as a whole, the results show that the pre-treatment to follow-up effects were large, with effect size ranging from 1.8 to 2.9. Based on the self-report scores, five of the six patients had greatly improved on general symptomatic and interpersonal distress 12–16 months after treatment. However, patient 1 had only small changes from pre-treatment to follow-up, and relapsed during the follow-up period. By post-treatment, the patients were re-diagnosed on the SCID-II. Three of the six patients did not fulfill the criteria of DSM-IV BPD any longer (patients 2, 4 and 6), whereas the rest still fulfilled the criteria, but to a lesser extent (for a criterion to be rated absent, there should not be any evidence of it during the last 6 weeks). The pre-treatment to follow-up changes on maladaptive schemas for the six patients were significant with an effect size of 1.8.

The most interesting finding, considering the often-reported variability of symptomatic distress in patients with BPD (Gunderson, 2001), is that, the gains after therapy ended were maintained during the follow-up period. Only one patient (patient 1) relapsed. No one had attempted suicide, and self-mutilation and self-damaging behaviors were significantly reduced. The general adaptive level of functioning (GAF score) increased from a mean score of 52 to 68, which is a relatively large improvement ($Es = 2.8$). However, overall there were still some residual symptoms and mild impairments in functioning by the end of the therapy and the follow-up, for all the six patients.

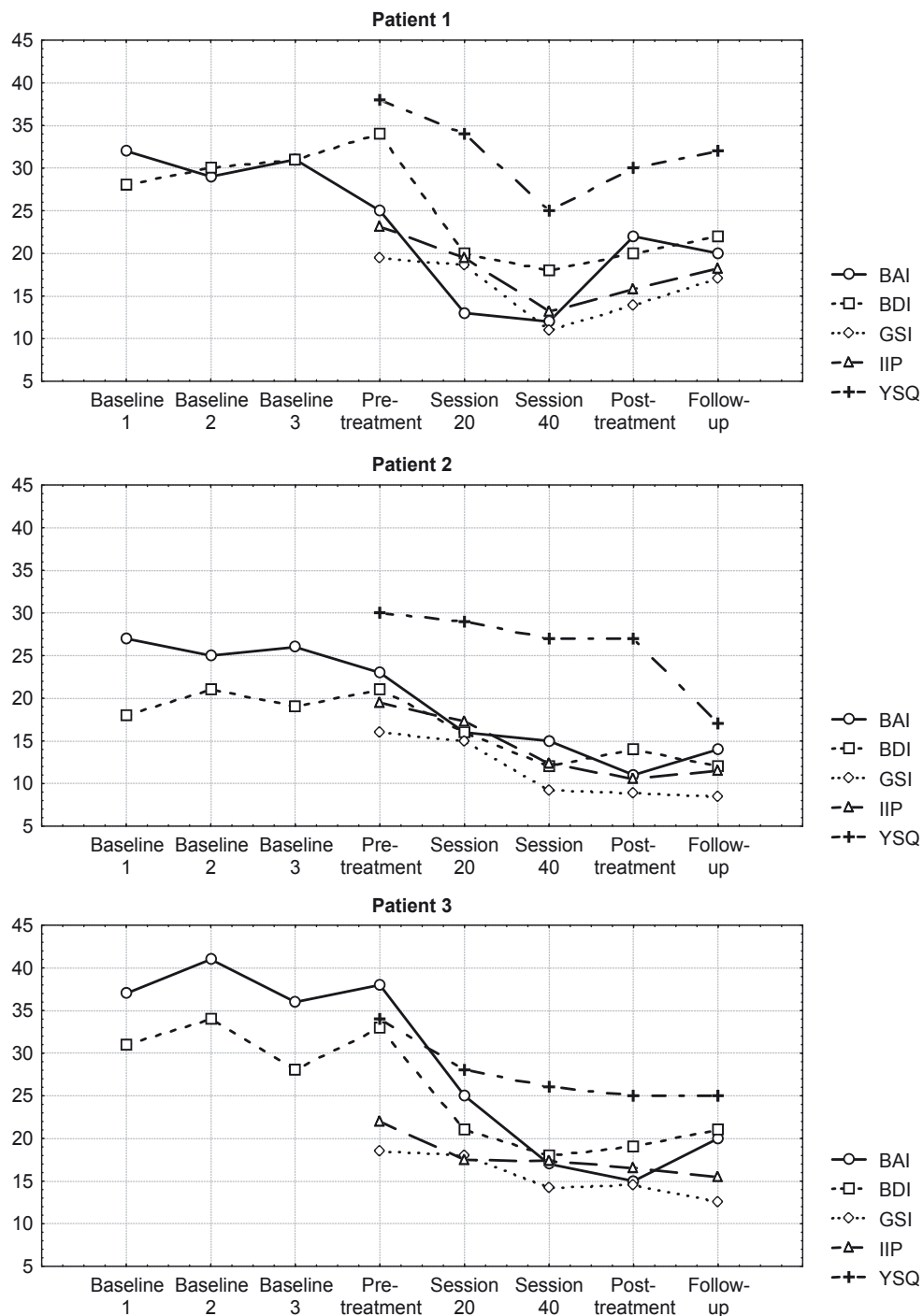


Fig. 1. Scores on the standardized measures at baseline, pre-treatment, 20th session, 40th session, post-treatment and follow up for each patient.

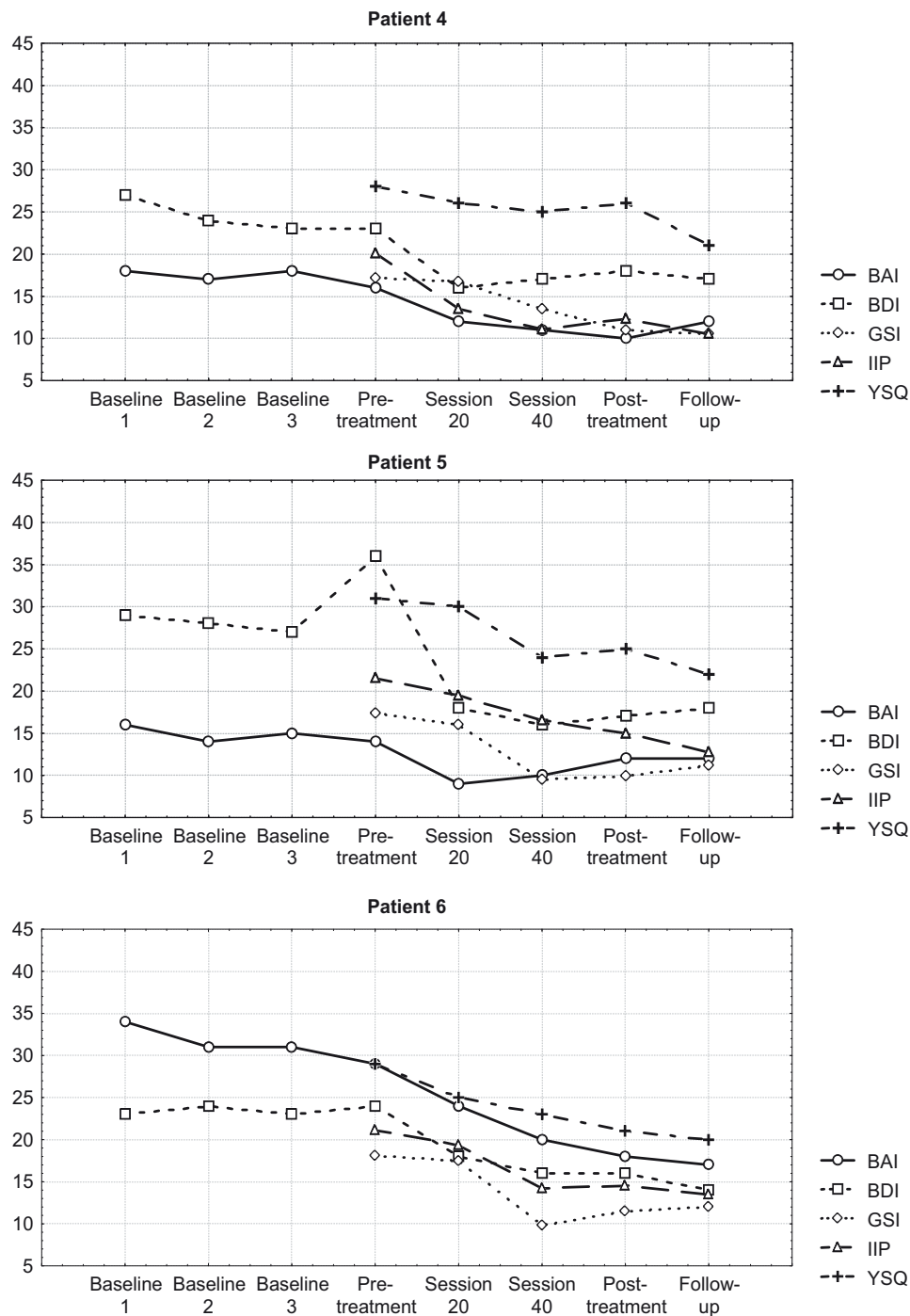


Fig. 1. (Continued)

4. Discussion

The results of the preliminary case series of schema therapy for patients with BPD show that five of the six patients attained clinically gains, and that the gains are not attributed to spontaneous recovery. All patients improved systematically during the therapy, and most importantly, the gains of treatment had maintained for over a year after termination in five of the six cases. However, patient 1 did not maintain her gains of therapy from post-treatment to follow-up.

Patient 1 had a high level of stress and conflicts with her two children and her husband. In addition, the family was offered help by counseling services, but the relationship with the child health care service was tense and they declined. Thus, the continuous intra-familial conflicts and tension was beyond the control of both the therapist and the community health service, which might be one of the important factors that contributed to the patient's relapse.

One of the elements of the treatment, the patients reported to have been among the most helpful, was the schema modes conceptualization. The content and dynamics of the schema modes are easily conveyed to the patients, and they can easily identify with the model. Also, addressing the emotional deprivation of the patient, and providing a nurturing base by the therapist through limited re-parenting, combined with developing skills for coping with his or her schema modes, seem to be crucial elements. The experiential techniques, which are an important part of schema therapy, are particularly suitable for helping the patient with his or her childhood traumas, and also cause the patients to develop their own self-soothing capacity and impulse-postponement behaviors. However, which element of schema therapy is the most effective remains to be empirically investigated from better controlled studies.

The study has at the least three limitations. First is the problem of generalization. Any generalization of the effects of schema therapy in a single case trial is limited due to the small number of patients included. Second, the delivery the schema therapy relied on only one experienced schema therapist, thus the feasibility of the treatment by other therapists is uncertain. Finally, the therapist himself conducted assessment of the patients' BPD diagnosis after treatment. The lack of an independent assessor in the study may limit the validity of the findings on recovery from BPD. On the other hand, the fact that the self-report measures showed a similar decrease in psychopathology as the therapist's assessment, is at odds with the interpretation that the therapist's assessment was biased.

The present study should be considered as an indication and a preliminary test of the effects of schema therapy for patients with BPD. The results of the present study, together with the preliminary results from Dutch study (Giesen-Bloo et al., 2004), indicate that schema therapy could both be a suitable and an effective approach to the challenging task of treating patients with BPD.

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Paper IV

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