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### Borderline personality disorder, substance abuse, and dialectical behavior therapy

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## CHAPTER 7

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# Dialectical Behavior Therapy of borderline patients with and without substance use problems: Implementation and long term effects

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## Summary

*Objective:* The aim of this article is to examine whether standard Dialectical Behavior Therapy (DBT) (1) can be successfully implemented in a mixed population of borderline patients with or without comorbid substance abuse (SA), (2) is equally efficacious in reducing borderline symptomatology among those with and those without comorbid substance abuse, and (3) is efficacious in reducing the severity of the substance use problems.

*Method:* The implementation of DBT is examined qualitatively. The impact of comorbid substance abuse on its efficacy as well as on its efficacy in terms of reducing substance abuse is investigated in a randomised clinical trial comparing DBT with treatment-as-usual (TAU) in 58 female borderline patients with (N=31) and without (N= 27) SA.

*Results:* Standard DBT can be applied in a group of borderline patients with and without comorbid substance abuse. Major implementation problems did not occur. DBT resulted in greater reductions of severe borderline symptoms than TAU, and this effect was not modified by the presence of comorbid substance abuse. Standard DBT, as it was delivered in our study, however, had no effect on substance abuse problems..

*Conclusions:* Standard DBT can be effectively applied with borderline patients with comorbid substance abuse problems as well as those without. Standard DBT, however, is not more efficacious than TAU in reducing substance use problems. We propose that, rather than developing separate treatment programs for dual diagnosis patients, DBT should be 'multi-targeted'. This means that therapists ought to be trained in addressing a range of severe manifestations of personality pathology in the impulse control spectrum, including suicidal and self-damaging behaviours, binge eating, and substance abuse.

## Introduction

Borderline personality disorder (BPD) is a persistent and severe mental disorder. Studies have shown significant comorbidity between borderline personality disorder (BPD) and substance use disorders (SUD) or substance abuse (SA) (Trull et al., 2000; Links et al., 1995; Oldham et al., 1995; Dulit et al., 1990; Zanarini et al., 1989; Zimmerman & Coryell, 1989; Akiskal et al., 1985; Loranger & Tulis, 1985). The reported prevalence rates of SUD among patients with BPD range from 39% to 84% with a median rate of 67% (Dulit et al., 1990; Links et al., 1995; Zanarini et al., 1989, 1990, 1998). Within substance abuse populations, the prevalence of BPD ranges from 2% to 66% with a median rate of 18% (Verheul et al., 1995). Comorbidity of SUD and BPD can partly be accounted for by overlapping diagnostic criteria (Dulit, 1990; Rounsaville et al., 1998), but prevalence rates of BPD remain high even when substance abuse is excluded as a diagnostic criterion of BPD (e.g., Dulit et al., 1990; Rounsaville et al., 1998). Some have suggested that SUD and BPD are causally linked in some way (Verheul et al., 1997). For example, some have hypothesized that SUD and BPD may share a common etiology and may be viewed best as being in the same domain of psychopathology, i.e., affective deregulation (Linehan, 1991, 1993) or impulse control disorders (Siever & Davis 1991, Zanarini 1993). Many authors view substance use as a manifestation of impulsivity, which is a core feature of borderline personality disorder (van Reekum et al., 1994; Links et al., 1999).

Since substance abuse can be considered a typical borderline manifestation rather than an independent comorbid condition, it is interesting that borderline patients comorbid with substance abuse (SA) often are treated differently from those without SA. For example, it has been reported that borderline patients with SA experience difficulties when applying for treatment. Anecdotal data indicate that this group may be caught in a therapeutic 'Catch-22' situation in which they cannot enter the mental health service system until they stop using substances and cannot enter substance abuse treatment until their suicidal and self-damaging behaviours are under control (e.g., Verheul, 1997; van den Bosch, 1996; NIAAA, 1993). Several factors may account for this phenomenon, including 1) segregations in the mental health field, 2) the assumption that addictive behaviours should be applied as an exclusion criterion for treatment programs and studies, and 3) program differentiation.

First, mental health centers and addiction treatment programs in some countries exist separately. This health care segregation has a strong tradition in the Netherlands where the financial support systems for mental health and substance abuse are completely separate. Unfortunately, this situation often prevents clinicians from undertaking integrated and collaborative treatments for dual diagnosis patients. Only

recently we have observed some initiatives in this direction often within the framework of research projects.

Second, scientific studies and clinical treatment programs often view addictive behaviours as an exclusion criterion for treatment of borderline personality disorder. For example, substance abusers tend to be excluded from studies examining efficacy of treatments designed to target borderline symptoms: 4 of 5 randomised controlled trials of psychosocial interventions for BPD excluded borderline patients with SA (Evans et al., 1999; Linehan et al., 1991, 1993; Linehan et al., 1998; Marziali & Munroe-Blum, 1994; Bateman & Fonagy, 1999). The practice of excluding borderline patients with substance abuse is questionable given recent findings pertaining to the lack of clinical relevance of addictive behaviours among borderline patients. For example, one study recently showed that the clinical and etiological differences between borderline patients with and without substance abuse are limited in number and size (van den Bosch et al., 2001).

Third, rather than eliminating substance abuse as an exclusion criteria for treatment programs, the mental health field shows a tendency toward differentiation between symptom- and disorder-specific modules. One example is DBT program designed to reduce substance abuse problems in substance-abusing borderline patients (DBT-S; Linehan et al., 1999). This type of differentiation might be indicated if implementation of regular DBT in a population of borderline patients with and without SA severely reduced the effectiveness of DBT within either one or both subgroups – e.g., through interference with the group dynamic process – or, alternatively, if treatment outcome data indicated that substance abuse is a strong predictor of poor treatment outcome for standard DBT. The most obvious disadvantage of treatment differentiation at a symptom-specific level is the enormous organizational challenge resulting from the need for a very large number of treatment modules to account for the whole clinical population.

Above we have described some of the issues that might account for the observation that borderline patients with SA experience difficulties when applying for treatment. In 1995, the Jellinek Center for substance abuse treatment and the Amsterdam Institute for Addiction Research (AIAR) started a randomised clinical trial of DBT in a mixed population of borderline patients with and without comorbid SA. Previous studies have shown that standard DBT compared to treatment-as-usual (TAU) is effective in reducing severe borderline symptomatology in borderline patients without SA (Linehan et al., 1993), and that a modified version of this program (DBT-S) is effective in reducing substance abuse in borderline patients with SA (Linehan et al., 1999). Against the background of these findings, we initiated a study to evaluate whether standard DBT would also be applicable and effective in the treatment of BPD pathology and substance abuse problems.

This paper aims to examine the following research questions:

- 1 Can standard DBT be implemented among a mixed group of borderline patients with and without SA? What specific problems are encountered and what solutions to these problems can be found?
- 2 Is standard DBT equally efficacious in reducing borderline symptomatology among those with and those without comorbid substance abuse?
- 3 Is standard DBT efficacious in terms of reducing the severity of the substance use problems?

## Method

### *1. Aspects of implementation*

A standard DBT program, focusing on life-threatening and suicidal behaviour as primary treatment targets, was implemented in the Jellinek Addiction Treatment Center in Amsterdam. Female patients with borderline personality disorder were recruited from both substance abuse treatment centers and psychiatric services in the greater Amsterdam area, irrespective of the severity of their substance use problems. During a pilot phase, interviews at the beginning and the end of treatment with both patients and therapists were held to obtain information about implementation issues.

Dialectical Behavior Therapy (DBT) is a manualized 12-month treatment that combines 4 modules: 1. weekly individual cognitive-behavioural psychotherapy sessions with the primary therapist, 2. weekly skills training groups lasting 2-2.5 hours per session, 3. weekly supervision and consultation meetings for the therapists, and 4. phone consultation, where patients are encouraged to get coaching in the appliance of new effective skills by phoning their primary therapists either during or outside office hours. Individual therapy focuses primarily on motivational issues, including the motivation to stay alive and to stay in treatment. Group therapy teaches self-regulation and change skills, and self and other acceptance skills. Among its central principles is DBT's simultaneous focus on applying both acceptance and validation strategies and change (behavioural) strategies to achieve a synthetic (dialectical) balance in client functioning.

*Therapists: recruitment and training.* A core group of three therapists was sent to Seattle to be trained in DBT. Back in Amsterdam, they recruited additional therapists from psychiatric hospitals in Amsterdam and the Jellinek Addiction Treatment Center through introductory lectures over a two month period (van den Bosch, 1995b). Therapists were invited to refer their patients, but also to take part in the project themselves as therapists. The core group therapists provided training through in-

service meetings and workshops. Ongoing supervision and theoretical training were provided by the project manager (LMCB) in the consultation team.

*Recruitment of patients.* The patient group in the pilot phase consisted of nine substance abusing, parasuicidal, and self-mutilating female borderline patients. Exclusion criteria were the identical to those used in standard DBT programs except that substance abuse was not an exclusion criterion. The average age of subjects in the pilot group was 37.5 years. The average number of days in residential treatment in the last four years was 74 days per year. The average number of admissions in the last four years ranged from 4 to 58.

2. *Efficacy of standard DBT in a mixed group of borderline patients with or without substance abuse problems: effects on BPD symptomatology*

We conducted a randomised clinical trial, comparing the efficacy of DBT with TAU in 58 female patients with borderline personality disorder. Participants were clinical referrals from both substance use treatment and psychiatric services. The inclusion criteria were: 1) DSM-IV diagnosis of BPD; 2) currently in outpatient psychiatric or substance abuse treatment; 3) age between 18 and 70; and 4) residence within a 25-mile circle around Amsterdam. Exclusion criteria were: 1) a DSM-IV diagnosis of bipolar disorder or (chronic) psychotic disorder; 2) insufficient command of the Dutch language; and 3) severe cognitive impairments. Referred patients were requested to fill out a screening device (PDQ-4+, Hyler, 1994). Subsequently, patients were diagnosed using a semi-structured interview (SCID-II, First et al., 1994). Substance abuse problems were assessed with the European version of the Addiction Severity Index (EuropASI; Kokkevi et al., 1995). Substance abuse of the participants are presented in Table 1. Patients with a severity score of 5 or higher on either the alcohol or drug section were considered substance abusers (SA+) and those with severity scores of 4 or lower on both sections were considered non-substance abusers (SA-).

The sample selection strategy, instrumentation, treatment conditions, and data analytic strategy and first results has been described in detail elsewhere (Verheul et al., submitted). In summary, intention-to-treat (ITT) analyses are available for 27 subjects assigned to DBT and 31 participants assigned to TAU. Outcome measures include (1) treatment retention and (2) high-risk suicidal, self-mutilative, and otherwise self-damaging impulsive behaviours. The 12-month efficacy data with respect to treatment retention and severe borderline symptomatology are reported elsewhere (Verheul et al., submitted), and will be summarized below. Special attention will be paid to the long-term effects of DBT on BPD symptomatology, and on the potential modification of the treatment effect of DBT on BPD symptoms by the presence of comorbid SA problems.

EuropASI N = 58s	BPD SA+		BPD SA-	
	%	N	%	N
Severity rating				
Cut-off score ASI $\geq 4$	69%	40	31%	18
Cut-off score ASI $\geq 5$	53%	31	47%	27
Cut-off score ASI $\geq 6$	16%	9	84%	49

  

N=31 EuropASI N = 58	BPD SA+	
	%	N
Severity ratings ASI $\geq 5$		
Cannabis	30%	9
Heroin	9%	3
Cocaine	17%	5
Methadone	13%	4
Alcohol	50%	15
Medication (sedatives)	64%	19
Poly drug abuse	56%	17
Average number of years of SA	7.6	
Average number of treatments	4	

Table 1 Variation in Substance Abuse behaviour among the participants.

### 3. Efficacy of standard DBT in a mixed group of borderline patients with or without substance abuse problems: effect on SA

The efficacy of DBT in terms of the course of substance use behaviours and borderline symptomatology at 18-month follow-up will be presented.

## Statistical Analysis

The impact of substance abuse problems on the 12-month efficacy data is analyzed using a general linear mixed model (GLMM) approach (procedure Mixed from SAS version 6.12; SAS institute, Inc, Cary, NC). To test the hypothesis (i.e., substance use modifies impact of DBT on borderline symptomatology), we used models with time, treatment, substance abuse problems, and the two-way and three-way interactions between these variables. In these analyses we focused on the treatment-by-substance abuse and time-by-treatment-by-substance abuse interactions (to inspect whether any of these were statistically significant) as well as on the treatment factor and time-by-treatment interaction (to inspect whether these were similar to the effects as observed in the models without the addiction factor).

The effect of DBT on the course of substance abuse at 18-month follow-up is examined using an analysis of variance (ANOVA) approach (SPSS version 8.0; General Linear Model Module). To test the hypothesis that DBT results in greater reductions of substance abuse problems than TAU, we used models with substance abuse severity as dependent variable, treatment as an independent variable, and initial substance abuse severity as a covariate. In these analyses we focused of course on the treatment factor

## Results

### *1. Aspects of implementation*

*Experiences of patients.* From the beginning, both therapists and patients expected that it would be difficult to combine substance abusing and non-substance abusing patients. Some even thought that the two groups would not mix at all over time. In reality, the two subgroups appeared to get along easily with each other by the second week. Through the discussion of homework, the substance abusing and non-substance-abusing participants realized that they shared most of the essential borderline problems. Exit interviews showed that all patients judged the program as validating and helpful. They felt acknowledged as borderline patients, and judged the treatment as very important. Session attendance for the total group was 81%. No difference in attendance was found for patients with and without substance abuse problems.

*Experiences of therapists in individual therapies or sessions.* In the beginning, therapists seemed to belong to different worlds. Therapists recruited from the addiction field experienced difficulty staying focused on the hierarchy of borderline pathology targets. They tended to immediately turn their attention to the substance abuse as soon as it showed up in sessions, even when suicidal and self-destructive behaviours were present. Therapists recruited from the psychiatric field, however, had essentially no experience with the treatment of substance abusers other than to refer them elsewhere. Initially these therapists did not consider (severe) alcohol and medication abuse – which often lowers the threshold for parasuicidal and self-mutilative behaviour – as examples of addiction, as is drug abuse. This realization was a shock to some of them. The gaps between the two groups of therapists were closed in the consultation team meetings. At these meetings, which were focused in part on providing support to therapists through behavioural analysis, the individual therapists became aware of the many advantages of working with colleagues with different types of expertise. In addition, the combination of individual psychotherapy and group training was experienced as helpful. Phone consultation to the patient – an essential

ingredient of DBT – turned out to be a serious problem, because therapists were unwilling to try this mode of treatment. Therapists were convinced that the patients would abuse the possibility of calling 24 hours a day, especially at night, and this would result in therapist burnout. Fortunately, the patients opposed this reluctance and demanded phone consultation because it was in the protocol. The concept of the patient being her own case-manager proved to be of help here. Patients were encouraged to convince their individual therapists to give phone consultation a try and this approach turned out to be successful.

Another problem resulted from the DBT rule that patients cannot be expelled from the program. In particular, the experience of patients who relapsed to substance abuse and were not referred out of the program resulted in heated discussions in the consultation team. In the end, substance abuse was redefined as a problem behaviour that needs to be addressed in individual therapy sessions in order to prevent the patient from dropping out of the program. Over time, therapists in individual therapies or sessions reported feeling less isolated and more competent and also reported increased work satisfaction. The attendance rate for the consultation team was 100%.

*Experiences of the group skills trainers.* All the problems in the skills group were related to an initial lack of clear rules, e.g. with respect to substance abuse before or during the training meetings. The DBT framework does not actually provide explicit instructions to trainers on the question of whether a patient who had used substance prior to a meeting should be sent home; instead, DBT encourages trainers to rely on their own judgement. Some trainers as well as some patients expressed concern about the lack of standardized procedures in this regard. In practice, however, there were hardly any problems with this issue. In fact, a patient came to a session under the influence of alcohol only once during the 20 pilot training sessions. The trainers decided to let her stay because she could sit upright and utter understandable syllables and she stayed the entire session. Two weeks later, this patient reported to the trainers that she had visited her general practitioner to obtain anti-alcohol medication. She reported that the experience of sitting drunk in the skills group for the whole session and not being sent away had been a horrible experience. The fact that dealing directly with this patient had prevented her from dropping out made the trainers see how ineffective traditional procedures can be.

Another problem that turned up was related to the fact that all patients had been members of dynamic and interaction oriented groups. DBT involves concentrating on practicing skills, rather than taking care of or discussing other patients' problems. This guideline required constant attention from the group skill trainers and a shift in attitude for most patients. For some of them, this shift was difficult to learn and at times challenging and upsetting as it made them conscious of their own judgmental behaviour.

This study which is the first clinical trial that was not conducted by the developer of DBT and was conducted outside the US supports the accumulating evidence that DBT can be successfully disseminated in other settings and other countries and that mental health professionals outside academic research centers can effectively learn and apply DBT.

2. *Efficacy of standard DBT in a mixed group of borderline patients with or without substance abuse problems: effects on BPD symptomatology*

The efficacy study that will be reported extensively elsewhere (Verheul et al., submitted) yielded three major results. First, DBT effectively retained patients in therapy. The 12-month attrition rate was 37% in the DBT group compared to 77% in the control condition. Second, DBT resulted in greater reductions of self-mutilating behaviour and self-damaging impulsive acts than TAU. Third, the beneficial impact on the frequency of self-mutilating behaviours was far more pronounced among those who reported higher baseline frequencies of these behaviours compared with those reporting lower baseline frequencies. These results are highly concordant with previously published trials (Linehan et al., 1993). It is also important to note that this study allowed for more rigorous statistical testing of DBT's efficacy than former trials due to a relatively large sample size ( $N=58$ ).

The currently described RCT is the first study that examined the influence of comorbid SA on the efficacy of standard DBT on borderline symptomatology. The hypothesis that comorbid substance abuse modifies the impact of DBT on borderline symptomatology was rejected by the additional statistical analyses. The treatment-by-substance abuse and time-by-treatment-by-substance abuse interactions appeared to be non-significant, and adding substance use in the statistical model did not significantly alter the treatment and time-by-treatment interaction parameters. Thus, the observed favourable impact of DBT on borderline symptomatology occurred among non-substance using as well as substance using borderline patients.

3. *Efficacy of standard DBT in a mixed group of borderline patients with or without substance abuse problems: effect on SA*

Table 2 shows the impact of DBT, as compared to TAU, on measures of substance abuse at 18-month follow-up, corrected for initial substance use severity scores. The results indicate that no differential treatment effects were found. This is true for the number of days of alcohol, medication, and cannabis use in the past month as well as for the overall severity scores for both alcohol and drug problems. Based on these findings, the second hypothesis (i.e., DBT results in greater reductions of substance use problems than TAU) should be rejected. Inspection of the findings reveals (table 2) that in both

treatment conditions, the course of the substance use problems is rather stable with almost no change over the 18-month follow-up period. This implies that the substance use problems were not effectively targeted in the TAU or in the DBT condition.

Treatment condition:	Dialectical Behavior Therapy		Treatment-As-Usual		Comparison at 18 month fu corected for Baseline <sup>2</sup>	
	M±SD		M±SD		F	p
EuropASI item <sup>1</sup> :	Baseline n=27	fu <sup>3</sup> n=20	Baseline n=31	fu <sup>3</sup> n=24		
days ≥ 5 drinks past month 0-30	7.1±10.3	6.1±9.8	6.2±9.2	3.8±7.8	0.9	.34
days medication use past month 0-30	14.2±14.0	7.9±12.2	13.5±14.5	11.5±13.9	0.4	.54
days cannabis use past month 0-30	6.5±11.2	9.2±13.3	2.3±5.8	5.9±11.5	0.1	.73
days alcohol problems past month 0-30	8.7±12.3	7.0±11.3	9.0±12.9	6.7±11.3	0.0	.89
days drug problems past month 0-30	8.1±11.4	9.5±13.2	9.0±12.6	4.5±10.0	2.0	.17
severity alcohol problems 0-9	2.7±2.3	2.8±2.6	3.0±2.5	2.4±2.1	1.1	.31
severity drug problems 0-9	3.3±2.0	2.8±2.2	3.6±2.3	2.3±1.8	0.5	.47

1 European version of Addiction Severity Index (Kokkevi & Hartgers, 1995)

2 Using General Linear Model module of Statistical Package for Social Sciences (SPSS 8.0), with EuropASI scores at 18-month follow-up as dependent variables, treatment condition as fixed factor, and baseline scores on EuropASI as covariates

3 Follow-up scores at 18-months since start of treatment

Table 2 Impact of Dialectical Behavior Therapy on severity of substance use problems at 18-month follow-up.

## Discussion

This article is aimed at examining whether standard DBT can be applied to a dual diagnosis population, i.e. whether standard DBT can be implemented in regular mental health or regular substance abuse treatment settings for borderline patients with and without substance abuse problems. Our results indicate (1) the implementation process occurred without major problems, (2) standard DBT is as effective for substance abusing borderline patients as for non-substance abusing borderline patients when suicidal and self-destructive behaviour are focus of treatment, and (3) standard DBT does not seem to affect the substance abuse problems in these patients.

Linehan et al. (1999) developed a modified, intensified and extended version of DBT, including all the standard components, targeting substance abuse. Specific training of DBT therapists in the additional substance abuse module was a prerequisite. Koerner & Linehan (2000) found DBT-s had significantly lower dropout rates and showed

significantly more reductions in drug abuse throughout the treatment year and at follow-up (16 months) compared to subjects in TAU. No differences, however, were reported for the medical or psychiatric inpatient treatment received by DBT-S and TAU subjects, or for rates of parasuicidal behaviour. Examination of the DBT-S treatment program shows that it was primarily focusing on the substance abuse rather than on high-risk suicidal and self-damaging behaviours. The focus on one target group of behaviour seems to be a common trait of the other DBT programs aimed at other severe dysfunctional behaviours, such as binge eating (Koerner & Linehan, 2000; Koerner & Dimeff, 2000).

In the DBT trials published thus far, we recognize an interesting pattern: DBT is effective in terms of the specific *behavioural* target that is focused on, but this impact does not seem to generalize to behavioural domains that have not been targeted. In this sense, DBT is an example of an excellent behaviour therapy program that can be effective for the treatment of severe symptomatology of serious personality pathology. This conclusion has a number of implications.

First, there is now substantial evidence that DBT is an excellent choice for patients with severe, life- or health-threatening impulse control disorders (e.g., high-risk suicidal, self-damaging, and otherwise self-damaging behaviours) that have proven to be relatively resistant to change in standard or short-term treatments. There is no empirical support that the core pathology of many patients with borderline personality disorder (i.e. chronic emptiness and boredom, unstable relationships associated with primitive defences, identity disorder, etc.) is affected by DBT (applied during one year). Perhaps, these intrapsychic elements of the pathology might benefit more from insight or psychodynamically oriented psychotherapeutic approaches (e.g., Bateman & Fonagy, 1999; Young, 1994).

The second implication is that standard DBT can be modified such that multiple targets can be focused on, depending on the specific behavioural problems of individual patients. Our experiences in Amsterdam made clear to us that in our standard DBT program, a focus was missing: substance abuse. Therefore, we would strongly recommend integrating these potential modifications within standard DBT, rather than developing different treatment programs for distinct patients group. In particular, we would recommend that the hierarchy used in the treatment program be modified. Substance abuse should be prioritized next to or just below suicidal and self-damaging behaviours. In addition, the education of DBT therapists should include training in counselling techniques for substance abusers and strategies for modifying addictive behaviours. There are two good reasons for this recommendation:

- 1 patients with impulse control disorders tend to have multiple problems simultaneously or, alternatively, tend to shift from one to another type of problem behaviour;

2 the development of symptom-specific programs would introduce an undesirably high degree of differentiation that poses an enormous, if not impossible, organizational challenge for the mental health field.

This study has a number of limitations. The sample size is rather small for studying three-way interactions; thus the analyses with respect to the possible differential impact of substance use severity on DBT's efficacy should be regarded with some caution. Furthermore, the recommendation mentioned above, i.e. to develop multi-target DBT, is basically derived from indirect evidence. Future randomised trials are required to test the relative efficacy of that approach.

In conclusion, the current study provides evidence that standard DBT can be implemented and is efficacious among both non-substance abusing and substance abusing borderline patients, but does not seem to affect substance abuse behaviours. We have recommended developing a multi-targeted DBT program for a broad patient population including several specific impulse control disorders and combinations of these disorders.

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