

## THE TREATMENT OF DELIBERATE SELF-HARM IN BORDERLINE PERSONALITY DISORDER USING DIALECTICAL BEHAVIOUR THERAPY: A PILOT STUDY IN A HIGH SECURITY HOSPITAL

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**Abstract.** Deliberate self-harm (DSH) presents a significant health problem, especially as treatments have not been particularly successful in reducing repetition. Dialectical behaviour therapy (DBT; Linehan, 1993) is one approach that has reported some success in reducing self-harm rates in borderline personality disorder patients, who self-harm frequently, though it remains largely untested outside its original setting. The present study aimed to assess the effectiveness of DBT in self-harming women in an institutional setting in the United Kingdom where self-harm is common. Female patients at Rampton Hospital who were displaying self-harming behaviour and met criteria for borderline personality disorder ( $N = 10$ ) participated in the full one-year treatment package of DBT. Patients were assessed on self-harm rates and on a number of psychological variables, pre-, during- and post-therapy, including a 6-month follow-up. There was a significant reduction in DSH during therapy, which was maintained at 6-month follow-up. This was paralleled by a reduction in dissociative experiences and an increase in survival and coping beliefs, alongside improvements in depression, suicide ideation, and impulsiveness. The findings are preliminary but the results suggest that DBT might provide an effective treatment for severe self-harm in institutional settings, and also highlight some of the psychological mechanisms that might mediate these improvements in self-harming behaviour.

*Keywords:* Deliberate self harm, DBT, dissociation.

### Introduction

Deliberate Self-Harm (DSH) is of considerable concern among mental professionals both in its own right — it is one of the most common reasons for emergency admission to hospital — and also as a risk factor for completed suicide (Hawton *et al.*, 1998). Most commonly, the behaviour consists of taking an overdose of drugs, but can also be in the form of a wide range of behaviours, including cutting, burning and inserting objects into the skin. The seriousness of DSH is compounded by the fact that it has proved to be very difficult to treat. Studies have shown that a range of different interventions often improve the psychological state of those who self-harm but generally fail to produce significant reduction in the likelihood of repetition of the self-harm (Hawton *et al.*, 1998; Williams, 1997).

One treatment that has shown a statistically significant reduction in self-harm rates is dialectical behaviour therapy (DBT; Linehan, 1993). DBT is a cognitive-behavioural therapy developed as a treatment for self-harm, particularly in borderline personality disorder. The treatment consists of weekly, individual psychotherapy combined with group behavioural skills training over the course of 1 year. The skills taught in the group sessions cover emotion regulation, interpersonal effectiveness, distress tolerance and mindfulness, and problem solving. These skills specifically target the emotional and interpersonal deficits found in borderline personalities. The individual sessions focus on motivational issues, analysing and eliminating episodes of self-harm, and reducing behaviour that may interfere with both therapy and the patient's quality of life. In the individual sessions, therapist and patient work to apply the skills learned to the patient's individual context and particularly to dealing with crises where self-harm would occur. A key theme of the therapy is accepting and validating the patient's experience, which is conveying to the patient that his or her experiences, including thoughts and feelings, are reasonable and understandable. In a randomized controlled trial, patients who received DBT had significantly fewer incidents of DSH and had fewer inpatient psychiatric days over the course of therapy than those in the treatment-as-usual condition (Linehan, Armstrong, Suarez, Allmari, & Heard, 1991), with the gains being maintained at follow-up (Linehan, Heard, & Armstrong, 1993).

DBT offers a promising approach to reducing the high rates of self-harm in borderline personality disorder. However, it remains largely untested outside its original setting: "Linehan's pioneering work needs to be extended, to see how well it can be applied in other settings throughout the world" (Williams, 1997, p.216). The present study aimed to assess the effectiveness of DBT in a group of self-harming women within Rampton Hospital, which is a high security hospital in the United Kingdom. Self-harm is a common problem among women in secure hospitals. In a previous study we found high rates of self-harm among female patients at Rampton Hospital, despite very restricted access to methods (Low, Terry, Duggan, MacLeod, & Power, 1997).

A sample of women in Rampton Hospital who self-harmed and met criteria for borderline personality disorder received DBT. There was no control group, due to limited numbers and the particular necessity of providing treatment for individuals who have been detained legally in order to receive treatment. Therefore, the results should be treated in the form of a pilot study, and as suggestive rather than conclusive, though, given the resistance of self-harming behaviour to treatment mentioned earlier, any observed changes in DSH would be noteworthy. A number of psychological variables were also measured at different time

points during the study in order to elucidate any psychological processes that may have mediated change in self-harm. The main questions addressed by the study were whether DSH rates would be reduced during- and post-treatment compared with pre-treatment, and whether there were any changes in psychological variables that could provide a coherent account of the mechanisms involved in DSH reduction.

## **Method**

### *Participants*

Seventeen women were referred to the study by their Responsible Medical Officer and assessed for suitability for inclusion. Inclusion criteria were: at least five criteria for a diagnosis of borderline personality disorder according to DSM-III-R (American Psychiatric Association, 1987), assessed by the International Personality Disorder Examination (Loranger et al., 1994); current self-harming behaviour; and willingness to take part in the therapy. Three of the 17 did not meet sufficient criteria for borderline personality disorder and one patient was unwilling to take part and subsequently went back to prison. Three patients dropped out of treatment within the first 4 months, one due to of a security issue and the other two because of difficulty engaging with the treatment due to their limited cognitive ability. The final sample therefore consisted of 10 patients who all completed the full year of therapy and the follow-up. The mean age of the sample was 28.7 years, ( $SD = 6.5$ ) with a range from 20 to 44, and the average length of hospital stay was 4.5 years ( $SD = 3.0$ ) with a range from 4 months to 9 years. As well as meeting criteria for borderline personality disorder, 7 out of the 10 patients also met criteria for at least one other personality disorder, including paranoid, anti-social, schizotypal, and avoidant personality disorders.

### *Measures and procedure*

Each patient was required to attend one skills training session per week for the duration of 1 year as well as weekly, individual sessions with her assigned therapist. All patients remained resident on the wards where they were living and treatment generally took place on the ward. Rates of self-harm were collected monthly from ward records, and therefore did not rely on self-report from the patient. In a Special Hospital setting there is considerable emphasis on recording any incidents; therefore these records were likely to provide a good measure of the true rates of self-harm. These data were available for all patients from the 3 months preceding therapy and the 6 months after therapy, as well as the 12 months during therapy. Psychological variables were assessed before the start of treatment, 4 months and 8 months into treatment, end of treatment, and at 6-month follow-up. The range of psychological measures are described fully in a previous study (Low, Jones, MacLeod, Power, & Duggan, 2000) and included: Irritability, Depression and Anxiety Scale (IDAS; Snaith & Zigmond, 1994); Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986); Reasons for Living Inventory (RFL; Linehan, Goodstein, Nielson, & Chiles, 1983); Beck Hopelessness Scale (Beck, Weissman, Lester, & Trexler, 1974), Beck Scale for Suicide Ideation (BSI; Beck, Kovacs, & Weissman, 1979), Beck Depression Inventory (BDI; Beck & Steer, 1987) and Impulsiveness Scale (Eysenck & Eysenck, 1991).

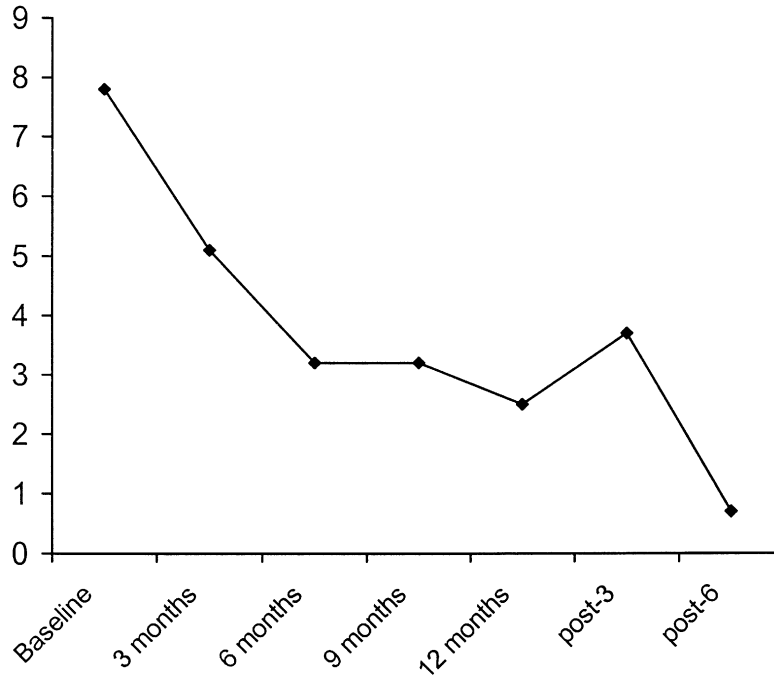


Figure 1. Mean DSH rates over the course of the study

## Results

### *Deliberate self-harm*

Self-harm rates were combined into 3-month blocks to provide a more stable measure of behaviour. The pre-treatment 3-month block was then compared with each of the (four) 3-month treatment blocks and with each of the (two) post-treatment blocks to see whether any changes had taken place during or after treatment. Almost all of the variables were strongly positively skewed, usually with an outlier, so non-parametric tests (Wilcoxon) were employed. Two-tailed significance levels were employed throughout.

Figure 1 shows mean rates of self-harm per 3-month block pre-treatment, during treatment, and post-treatment. Rates for the 3-month pre-treatment block did not differ significantly from rates for the first quarter of treatment but rates for the second, third, and fourth quarters of treatment were all significantly lower than pre-treatment rates (all  $p < .05$ ). Eight out of the ten patients showed a reduction between pre- and end of treatment, one patient showed no change and one showed an increase. Rates for the first follow-up period did not differ significantly from pre-treatment rates, indicating a post-treatment rebound effect, although for the second half of the 6-month follow-up rates had reduced again and were significantly lower than pre-treatment rates ( $p < .01$ ). At the individual level, all 10 patients showed a reduction in self-harm between pre-treatment and the final follow-up period. Finally, the three, monthly blocks pre-treatment were compared with each other using Friedman's test to see whether the pre-treatment baseline was stable. There was no significant

ant difference between any of the three pre-treatment months, indicating that self-harm during the baseline was stable ( $M_s = 2.4, 3.1,$  and  $2.3$ , Friedman's test,  $\chi^2 = .5$ , n.s.) at least for the period under study.

### *Psychological variables*

Each of the psychological variables measured on each occasion was almost always normally distributed. On the very few occasions where any level of a variable was not, then comparable non-parametric analyses were conducted. In no case did the results differ from the parametric analysis and therefore results reported are from the parametric analyses. Each variable was subjected to a repeated measure analysis of variance, with four levels (pre-treatment, 4 month, 8 month, and post-treatment) in order to look at treatment effects. Follow-up effects were examined by comparing follow-up scores with pre-treatment scores for any variables that showed a significant treatment effect, therefore testing whether any significant treatment effects were maintained.

The repeated measures ANOVA with four levels revealed significant effects of occasion of testing for IDAS-depression ( $p < .05$ ), dissociative experiences ( $p < .01$ ), the survival and coping beliefs subscale of the RFL ( $p = .01$ ), suicide ideation ( $p < .01$ ), and BDI ( $p < .05$ ). In addition, there was a strong trend for impulsiveness ( $p = .05$ ) to differ. None of the other variables showed a significant change over the course of treatment. The means and standard deviations for each of the variables showing a change is shown in Table 1.

To understand the source of these main effects, individual paired  $t$ -tests were conducted for each variable between pre-treatment and each of the other occasions of measurement. By 4 months, there had been a significant reduction in dissociative experiences ( $p < .01$ ), impulsiveness ( $p < .05$ ) and BDI scores ( $p < .05$ ), as well as a significant increase in survival and coping beliefs ( $p < .05$ ). At 8 months, all of these variables remained significantly different from pre-treatment, and additionally there had been a decrease in depression as measured by IDAS ( $p < .05$ ). At the end of treatment, dissociative experiences remained significantly reduced from pre-treatment ( $p < .05$ ), and survival and coping beliefs remained significantly higher ( $p < .01$ ). The other variables that had shown a significant reduction no longer did so, although BDI was close to significance ( $p = .05$ ). Additionally, suicidal intent

**Table 1.** Means and standard deviations (in parentheses) of psychological measures at each assessment point

Variable	Baseline	4 months	8 months	12 months	18 months
IDAS-depression	7.2 (3.1)	7.1 (2.4)	4.3 (1.9)*	6.5 (2.1)	6.1 (3.1)
Dissociation	46.4 (14.9)	28.6 (10.3)*	31.1 (16.9)*	29.8 (15.2)*	29.6 (16.8)*
Survival & coping beliefs	2.1 (1.3)	3.7 (1.3)*	4.4 (1.2)*	4.1 (1.3)*	4.3 (1.4)*
Suicide ideation	13.5 (7.9)	8.6 (8.3)	7.3 (7.7)	3.8 (6.4)*	4.2 (6.8)
Impulsiveness	15.3 (3.2)	13.0 (3.1)*	12.2 (2.9)*	13.0 (2.9)	14.1 (2.1)
BDI	26.0 (9.1)	17.0 (9.5)*	15.4 (10.5)*	19.0 (11.6)	17.7 (14.0)

\*Indicates where a variable differed from baseline.

was significantly lower at the end of treatment compared with pre-treatment ( $p < .05$ ). Finally, to see if treatment gains were evident at follow-up, pre-treatment scores were compared with follow-up scores for those variables that showed a significant change on any of the above comparisons. Compared with pre-treatment scores, dissociative experiences were still significantly lower ( $p < .01$ ) and survival and coping beliefs still significantly higher ( $p < .05$ ) at follow-up, and suicidal intent and BDI-depression scores showed a trend towards being lower (both  $p < .10$ ).

### Discussion

Those receiving DBT showed a reduction in rates of self-harm and improvement in a number of psychological variables at various points during- and post-treatment. The reduction in self-harm was evident by the second quarter of treatment and was maintained, apart from the period immediately after termination of treatment, through to the 6-month follow-up. The psychological variables that showed the most consistent changes were reductions in dissociation and increased survival and coping beliefs, although there were also significant improvements at different time points on depression, impulsiveness, and suicidal ideation.

The findings show that DBT was associated with reductions in DSH, though given the nature of the study they cannot demonstrate that these changes were due to DBT. However, the reduction in DSH is extremely heartening and is consistent with the findings of the controlled trial of Linehan et al. (1991). The profile of changes in the psychological variables also presented a very interesting picture. The variables that showed most change are, in fact, the ones that relate most closely to the rationale and practice of DBT. One of the major skills learned in DBT is “mindfulness”, which consists of learning to focus on present experience, and which would therefore be expected to reduce the tendency to dissociate. The increase in survival and coping beliefs (which essentially measure attitudes to living and dying) also reflects a large component of the treatment. Reducing suicidal ideation, depression, and impulsiveness are also all central goals of DBT, whereas, interestingly, the variables that did not change, for example, anxiety or irritability, are less of a focus of treatment. The pattern of change among the various psychological variables therefore provides a coherent account of the mechanisms of treatment efficacy, and the fact that some variables changed and others did not also suggests that simple response bias could not account for the improvement in the key variables.

There were a number of limitations to the study, especially the lack of a control group alongside the treatment condition to which participants could have been randomly allocated. For a variety of practical reasons it was not possible to have a control group within the context of this study. The absence of a randomized controlled trial means that it is not possible to say conclusively that the changes observed were the result of DBT. However, set against this, DSH has shown itself to be quite resistant to treatment so a spontaneous reduction or reduction due to non-specific factors would not have been expected. In addition, the pre-treatment baseline did not show any trend towards a reduction, although it was of a considerably shorter duration than the treatment and follow-up. Thirdly, the changes in psychological variables provide a theoretically coherent account of how changes could have taken place specifically as a result of treatment. The numbers in the study were also very small and therefore suggest caution in generalizing from the findings. However, the reduced power would have worked against finding any significant results, and therefore indicates

that the effect sizes found were large, suggesting the potential for a substantial level of clinical impact. Nevertheless, the findings of the present study should be taken as indicative and suggest the need for a larger, randomized controlled trial.

A final limitation of the study was that three patients dropped out of treatment. Two of those patients had very limited cognitive abilities, reflected in the fact that one was resident on a learning difficulties ward and the other was moved to a learning difficulties ward at a later date. This suggests that DBT may not be suitable for patients with limited cognitive capacity. The third patient who dropped out did so as a result of security concerns where it was considered too dangerous for the patient to be left alone with a therapist. This also raises an issue to consider when applying DBT to this population. It is not possible to say what effect these individuals would have had on the results had they remained in treatment but they are informative about conditions that might affect the applicability of DBT in this setting.

In conclusion, the findings are preliminary but the results suggest that DBT might provide an effective treatment for severe self-harm in institutional settings, and also highlight some of the psychological mechanisms that might help in understanding what mediates improvements in self-harming behaviour.

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