



TITLE: Inpatient Treatment for Borderline Personality Disorder: A Review of Clinical Effectiveness and Guidelines

DATE: 3 September 2010

CONTEXT AND POLICY ISSUES:

Borderline personality disorder (BPD) is an axis II psychiatric disorder with an estimated prevalence of 1.5% in the general population¹ Patients with BPD have a significantly increased risk of self-harm and suicidal behaviour relative to comparable individuals without the condition.² The *Diagnostic and Statistical Manual of Mental Disorders* (2000) describes the diagnostic criteria for BPD as follows:

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:

- frantic efforts to avoid real or imagined abandonment
- a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation
- identity disturbance: markedly and persistently unstable self-image or sense of self
- impulsivity in at least two areas that are potentially self-damaging
- recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior
- affective instability due to a marked reactivity of mood
- chronic feelings of emptiness
- inappropriate, intense anger or difficulty controlling anger
- transient, stress-related paranoid ideation or severe dissociative symptoms (p 710)³

In addition to pharmacotherapy, there are a range of therapeutic approaches for BPD described in published literature, including: psychodynamic therapies (e.g., transference-focused therapy, mentalization-based therapy); cognitive and behavioural therapies (e.g., dialectical-behaviour therapy, schema-focused therapy, manual-assisted cognitive behavioural therapy, and cognitive-behavioural therapy) and integrative therapies (e.g., cognitive-analytic therapy and interpersonal-reconstructive therapy).⁴

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Patients with BPD are frequent users of inpatient therapy;^{5,6} however, it may be unclear as to when a patient with BPD should be admitted to hospital and the optimal duration of subsequent inpatient therapy. Given the high utilization of inpatient services by patients with BPD,^{5,6} there is a need to evaluate the evidence concerning the optimal use of inpatient treatment. This report reviews and appraises the clinical evidence and guidelines concerning inpatient treatment of BPD.

RESEARCH QUESTIONS:

1. What is the clinical effectiveness of inpatient treatment of adult patients with borderline personality disorder?
2. What are the guidelines and criteria for admission and inpatient treatment of adult patients with borderline personality disorder?

METHODS:

A limited literature search was conducted on key health technology assessment resources, including PubMed, the Cochrane Library (Issue 8, 2010), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI (Health Devices Gold), EuroScan, international health technology agencies, and a focused Internet search. The search was limited to English language articles published between January 1, 2005 and August 9, 2010. Filters were applied to limit the retrieval to health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, and guidelines.

HTIS reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

SUMMARY OF FINDINGS:

The literature search identified one systematic review,⁷ four non-randomized studies,⁸⁻¹¹ and one evidence-based guideline^{6,12} that address the use of inpatient treatment for patients with BPD. There were no health-technology assessments or randomized controlled trials identified in the literature review.

Systematic reviews and meta-analyses

McMain *et al* (2007)⁷ conducted a systematic review to evaluate the effectiveness of psychosocial treatments on suicidal behaviour in patients with BPD. The literature search was comprehensive, involved multiple databases, and was well described in the publication. Randomized controlled trials, uncontrolled studies, and quasi-experimental studies were eligible for inclusion if they were published in English and involved adults patients (i.e., 18 years or older). The specific inclusion and exclusion criteria for this review were not reported, nor were the methods for eligibility assessment, data extraction, or quality assessment. Overall, this review may be considered low quality due to the poor reporting of methodology, lack of clarity

regarding the effect sizes from individual studies, and general failure to follow accepted criteria for the reporting of systematic reviews (i.e., QUORUM or PRISMA).^{13,14}

The authors reported that four studies¹⁵⁻¹⁸ evaluated the effect of dialectical-behaviour therapy (DBT) in an inpatient setting for patients with BPD. One uncontrolled pre- and post-intervention study¹⁵ evaluated the impact of a three month inpatient DBT program on female patients (n = 24) with BPD. The authors reported that the inpatient DBT intervention significantly reduced self-mutilating behaviours and ratings of depression. The same authors also conducted a randomized controlled trial of a DBT inpatient program.¹⁶ Fifty women with BPD were randomly allocated to a three month DBT inpatient program (n = 31) or to a control group that received treatment as usual in the community (n = 19). Relative to the patients in the control group, the patients in the DBT group had significant reductions in self-mutilating behaviours. The authors also reported that patients in DBT group had superior improvements in depression, anxiety, global psychopathology, interpersonal functioning, and social adjustment; however, it is unclear if these improvements achieved statistical or clinical significance. The systematic review failed to report effect sizes or the methods that were used to assess these outcomes.

Two additional studies^{17,18} used a quasi-experimental design to examine the effects of inpatient DBT on patients with BPD. Both studies have limitations that reduce the quality of evidence and limit their applicability to the research questions of this rapid review. One study¹⁷ compared DBT with treatment as usual in 31 inpatients; however, only 13 of the patients were identified as having BPD. With less than half of the study participants having BPD there is indirectness to the true population of interest for this review. McMMain *et al*, noted that a critical violation of the DBT protocol was permitted in the study and, therefore, reported no findings from this study. The final study¹⁸ assessed the effect of adding DBT to an existing inpatient program with a psychodynamic focus. The study involved 130 patients with personality disorders (i.e., not specifically limited to patients with BPD) who remained in hospital for an average of 130 days. The authors reported that rates of parasuicidal behaviour were significantly lower in the DBT group in comparison with those who received treatment as usual on a separate psychiatric unit within the same hospital (effect sizes not reported). The heterogeneous patient population limits the applicability of these findings. Overall, McMMain *et al* reported that there is evidence to support the effectiveness of DBT in an inpatient setting; however, they caution that more controlled trials are required before conclusions can be made.

McMMain *et al* identified three non-randomized studies that evaluated inpatient psychodynamic treatment.¹⁹⁻²¹ One study¹⁹ evaluated three treatments for personality disorder: a specialized psychodynamic residential inpatient program for 12 months (inpatient group); a step-down treatment of a six-month admission to the specialized psychodynamic residential program followed by outpatient group therapy twice per week and access to an outreach nurse for 12 to 18 months (step-down group); or a general community psychiatric treatment as usual model (TAU group). The study included 143 patients of which 85% were diagnosed with a cluster B personality disorder; however, the review does not provide details regarding the specific disorders (i.e., borderline, antisocial, histrionic, narcissistic personality disorder). The authors reported that, after 24 months, the step-down group was superior to the inpatient and TAU groups for the following outcomes: self-reported symptoms, clinician-rated social adjustment and global functioning, self-harm, and suicide attempts (effect sizes not reported). However, it was not specified if these differences achieved statistical or clinical significance. Follow-up was conducted after six years and 61% of the patients in the step-down group had clinically

significant improvement in symptoms, compared with 26% of the inpatient group and 13% of the TAU group. It was noted that patients in the inpatient group demonstrated improvements in symptom severity and global functioning; however, there was no significant improvement in self-harm behaviours, suicide attempts, or readmission rates. It was not reported if there were differences between the inpatient and treatment as usual groups.

Another study²¹ evaluated the effects of an inpatient psychotherapeutic program on 40 patients with BPD. The inpatient treatment program was focused on interpersonal relationships and intrapsychic organization. The authors conducted a pre- and post-intervention analysis and reported a significant reduction in suicidal or self-destructive behaviour (effect sizes not reported). The remaining non-randomized study reported the results of a study conducted in Finland.^{20,22,23} This study evaluated the effect of an inpatient treatment program on depression and anxiety in patients (n = 66) hospitalized for an average of 88 days. The program consisted of individual and group therapy sessions twice a week, including family members when necessary, ward meetings, committees and creative activities. Only 32% of the patients in this study had a diagnosis of BPD; therefore, there is uncertainty regarding the applicability of this study. Overall, the authors of this systematic review concluded that more research is required to evaluate the comparative efficacy of inpatient versus outpatient treatment for patients with personality disorders.

Non-randomized studies

Kleindienst *et al* (2008)⁹ conducted a follow-up study of the patients (n = 31) who participated in the DBT inpatient program reported in one of the studies¹⁶ included in the McMMain systematic review. The patients were followed for 21 months after being discharged. During the post-DBT phase, the patients were provided with treatment as usual but were not permitted to receive additional treatment with DBT. Relative to baseline (i.e., prior to receiving the initial DBT), there was significant improvement in severity of BPD symptoms based on the Global Severity Index, Hamilton Anxiety Scale, the State-Trait Anxiety Inventory, the Beck Depression Inventory, the Hamilton Depression Scale, the Dissociation Experiences Scale, the Global Assessment of Functioning Scale, and the Inventory of Interpersonal Problems (all $p < 0.05$). The authors concluded that improvements observed after three months of DBT are maintained for at least two years. The key limitations of this study are the lack of a comparable control group, small sample size (n = 31), the use of non-blinded assessors, and changes in patient pharmacotherapy over time.

A high proportion of patients receiving inpatient DBT therapy for BPD fail to complete the program.¹⁶ Rüscher *et al* (2008)¹⁰ conducted a prospective study attempting to identify predictors of early withdrawal from inpatient therapy. Sixty women with BPD were admitted to a 12 week inpatient DBT treatment program and 32% withdrew prior to completion. The authors compared the baseline characteristics of completers (n = 41) and non-completers (n = 19) using a stepwise logistic regression and reported that a lower number of suicide attempts ($p = 0.03$) and higher experiential avoidance ($p = 0.03$) were statistically significant predictors of early withdrawal from the program. This result should be interpreted with caution as the coefficient of determination for the logistic regression ($R^2 = 0.3$) indicates a high level of unexplained variance in the model. This is likely an indication that there are other important predictors of early withdrawal that cannot be explained using this particular regression model and the corresponding data set. Furthermore, the study likely lacks the statistical power to assess many

of the prognostic factors selected by the investigators; therefore, the absence of statistical significance may simply be a reflection of inadequate sample size. Finally, it was unclear if the investigators considered differences in patient pharmacotherapy as a predictor of early withdrawal from therapy.

Chiesa and Fonagy (2007)¹¹ conducted a prospective study to compare the effectiveness of 12 months of inpatient treatment versus a step-down program consisting of six months of inpatient therapy followed by two years of psychotherapy and outreach nursing. The inpatient treatment in this study is described as a combination of sociotherapy and psychoanalytically oriented psychotherapy. The study involved 73 patients with cluster B personality disorders, of which 54 (74%) were diagnosed with BPD. The authors reported that, relative to the long-term inpatient group, patients in the step-down group demonstrated statistically significant improvements in Global Severity Index ($p < 0.001$), Social Adjustment Scale ($p < 0.02$), and overall patient improvement ($p < 0.02$). These findings support the results their previous study¹⁹ (included in the McMain systematic review) which also reported that a step-down treatment approach was superior to long-term inpatient therapy. Similar to the other non-randomized studies included in this review, these findings should be interpreted with caution due to the small sample size. In addition, it is unclear if the investigators considered differences in patient pharmacotherapy in their assessment.

Kroger *et al* (2006)⁸ conducted an uncontrolled pre- and post-intervention study to evaluate the impact of a three-month inpatient DBT program on patients with BPD and substance abuse disorders. Patients with BPD are more likely to have substance abuse disorders than the general population; however, similarly conducted studies^{15,16} of inpatient DBT therapy excluded patients with a substance abuse co-morbidity. This approach may have restricted the DBT therapy to a narrower subset of patients with clinically less severe BPD; therefore, Kroger *et al* sought to include patients with BPD and substance abuse disorders in their study population. A total of 50 patients (44 women and 4 men) underwent three months of DBT in an inpatient setting in Germany. Significant improvement was reported in scores of the Global Severity Index ($p = 0.002$), Beck Depression Inventory ($p < 0.001$), and Global Assessment of Function ($p < 0.001$) following DBT. A subgroup analysis was performed for substance abusers ($n = 13$) and there were no significant differences between the pre- and post-intervention periods. The key limitations of this study are the lack of a comparable control group, the small sample size for both the primary ($n = 50$) and subgroup analysis ($n = 13$), non-blinded assessors, and confounding due to changes in pharmacotherapy (which was not held constant in the pre- and post-intervention periods).

Guidelines and recommendations

The National Collaborating Centre for Mental Health and the National Institute for Health and Clinical Excellence (NICE) in the United Kingdom published a guideline on the treatment and management of BPD.^{6,12} The guideline was developed using a rigorous methodology according to the components of the Appraisal of Guidelines Research and Evaluation (AGREE) instrument.²⁴ Evidence was obtained using well-described, systematic methods with clearly established criteria for selecting relevant studies. The methods used for formulating the recommendations were clearly described and involved the Grading of Recommendations Assessment, Development and Evaluation (GRADE) framework.^{25,26} The evidence and recommendations regarding the role of inpatient treatment for patients with BPD are presented

sequentially in the document; however, there are no citations provided in support of the individual recommendations. The guideline and recommendations were reviewed by external stakeholders prior to finalization and the individual feedback and responses are reported.

The scope of the NICE guideline is broad and addresses many different aspects of BPD treatment. Overall, the NICE guideline concluded that it was difficult to draw conclusions and make recommendations based on the limited evidence for inpatient treatment. NICE reported that there was no evidence that long-term hospitalization of patients with BPD was beneficial nor was there any evidence to suggest that it would be harmful. They reported that the limited evidence and expert opinion suggest that outpatient therapy is the most effective treatment for BPD and that inpatient treatment should be used for crisis management and the treatment of clinical symptoms as opposed to the treatment of BPD.

The guideline offers clinical practice recommendations regarding the use of inpatient services in the treatment of BPD (section 8.5.17), citing diagnostic uncertainty and the short-term management of acute risk as instances where hospital admission should be considered. NICE recommends that admission to an acute psychiatric inpatient unit should only be considered for the management of crises where there is significant risk to self or others that cannot be managed within other services. It is also recommended that the patient with BPD should actively be involved in the decision to undertake inpatient care. Specifically, the decision should be based on a joint understanding of the potential benefits and harms that may result from admission; the length and purpose of the hospital stay should be agreed upon in advance; and that treatment on a voluntary basis be resumed at the earliest opportunity following the use of compulsory treatment by health care professionals in the appropriate circumstances.

Limitations

The available evidence is nearly entirely composed of small (i.e., $n < 100$), non-randomized, unblinded studies that typically lacked adequate statistical power. A limitation with the available studies is the differences in the duration of inpatient therapy. The studies assessed three months,^{8,10,15,16} six months,^{11,19} and twelve months^{11,19} of inpatient treatment, making it difficult to compare their findings. In addition, studies of inpatient DBT therapy were limited by the number of early withdrawals (range 22%¹⁶ to 32%¹⁰) and the systematic review did not provide insight into the patient disposition (e.g., the proportion and reasons of early withdrawals) of the included randomized controlled trial.¹⁶ The small sample size of studies evaluating BPD therapy was also noted by Brazier *et al* (2006)⁴ in a health technology assessment of psychological therapies in the outpatient setting. Confounding due to the passage of time is a possibility as most studies failed to include a comparable control group. The included studies failed to provide information concerning patient pharmacotherapy and whether or not there was heterogeneity within and between the study populations. The one systematic review⁷ identified in the literature review was low quality due to the poor reporting of methodology and results, and there were no health technology assessments that addressed inpatient therapy patients with BPD. Several studies^{11,17-20} contained a heterogeneous population of patients with cluster B personality disorders, thus limiting their ability to directly address a true BPD population. Despite reporting statistically significant findings, model fit statistics suggest that important variables may have been poorly measured or excluded from the logistic regression analyses. The NICE guideline^{6,12} included a systematic review, was developed using a rigorous methodology, and offers recommendations that directly address the inpatient treatment of BPD.

The evidence reviewed for the section regarding inpatient services for BPD consisted of low-quality studies due to the small sample size, non-randomized design, lack of control groups, and indirectness of the population. NICE concluded that there was insufficient published evidence to make recommendations and, therefore, relied upon expert opinion and clinical experience to derive its guidance. An additional limitation surrounds the uncertainty regarding whether or not these recommendations, derived in the United Kingdom, would be generalizable to the Canadian health care setting.

CONCLUSIONS AND IMPLICATIONS FOR DECISION OR POLICY MAKING:

The evidence regarding the safety and effectiveness of inpatient treatment for patients with BPD is limited to small, non-randomized studies. Furthermore, the available comparisons of inpatient and outpatient therapy differed, not only in setting and duration, but also with regard to the type of treatment that patients received. This makes it difficult to accurately assess whether or not admitting the patient offers superior clinical benefits in comparison with treatment on an outpatient basis. There is a need for adequately powered randomized controlled trials that directly compare inpatient and outpatient therapy on clinically meaningful outcomes in patients with BPD. NICE has prepared a comprehensive, evidence-based guideline addressing the treatment of BPD. The guideline recommends that admission to an acute psychiatric inpatient unit should only be considered for the management of crises where there is significant risk to self or others that cannot be managed within other services.

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