

# Psychotherapy with borderline patients: II. A preliminary cost benefit study

Janine Stevenson, Russell Meares

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**Objective:** The aim of this study was to conduct a preliminary cost benefit study of the effect of outpatient psychotherapy, twice a week for 1 year, in 30 borderline patients.

**Method:** Costs to the health system in terms of inpatient care for the year before treatment were compared with the costs for the year following treatment.

**Results:** The cost of hospital admissions for the 30 patients for the year before treatment was \$684 346 (range = \$0–\$143 756/patient). The cost of hospital admissions for the year after treatment was \$41 424 (range = \$0–\$12 333/patient). These figures represent an average decrease in costs per patient of \$21 431. By using the schedule fee as the basis, the estimated cost of therapy per patient was approximately \$13 000, representing a saving/patient of \$8431 or approximately \$250 000 over the total cohort in the first year after treatment.

**Conclusion:** This study suggests that there is a significant cost benefit in the appropriate treatment of borderline patients.

**Key words:** borderline, cost benefit, outcome, psychotherapy.

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Although the goal of psychotherapy is not to reduce the financial burden imposed on the community by a particular condition but to alleviate suffering and to enhance individual function, the economic implications of treatment are important in an era of cost containment and scarce resources. However, psychotherapy outcome research 'only rarely addresses the economic impacts' of treatment [1, p.34]. In examining 686 such studies, Gabbard and his colleagues [2] found only 18 which provided data which was useful in this regard. They included Stevenson and Meares' study of 1992 [3]. This report concerns a preliminary cost benefit analysis based on these data.

This cost benefit study focuses on the main financial consequences of the borderline condition: namely hospitalisation. It does not address the additional costs of casualty visits; outpatient visits (psychiatry, social work, psychology, dietetic, physiotherapy, and various medical specialists); general practitioner visits; diagnostic tests conducted on an outpatient basis; and medications. These are being collated, together with inpatient costs, in a current study, which is supported, in part, by the Section of Psychotherapy, Royal Australian and New Zealand College of Psychiatrists. It will be conducted in conjunction with the Centre for Health Economics Research and Evaluation (CHERE) at the University of Sydney. These data will be reported in a later publication.

Although Gabbard *et al.* [3] remark that 'an economic assessment of treatment must always include two different types of costs: (i) direct costs related to actual dollar expenditures for delivery of treatment; and (ii) indirect costs associated with lost productiv-

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Janine Stevenson, Clinical Senior Lecturer; Russell Meares, Professor of Psychiatry (Correspondence)

Department of Psychological Medicine, University of Sydney, Westmead Hospital, Westmead, New South Wales 2145, Australia. Email: <acomerfo@mail.usyd.edu.au>

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ity related to the illness, disability, and problems in the job', we were not able to calculate the indirect costs nor could we consider the important, but neglected, wider societal impacts of borderline personality disorder (BPD), which must not be lost sight of when psychotherapy outcome is considered [4]. Of major concern is the effect of BPD upon the remainder of the family, particularly children.

## Method

### Subjects

Thirty subjects of mean age 29.4 years ( $SD = 7.9$ ) of whom 19 were female and 11 male, have been described in demographic terms in earlier publications [3,5]. They were treated psychotherapeutically for 1 year, at two sessions per week. The treatment method is also described elsewhere [3,5,6].

### Symptom check list

A symptom check list, the Cornell Index [7], was completed by all patients at the beginning of treatment, at 6 months, at the end of the year's treatment, and again a year after this (i.e. at 24 months).

### DSM ratings

DSM ratings were made for all subjects at the beginning of treatment, at the end of treatment, and 1 year after the cessation of treatment. The ratings were made according to a 27-point scale derived from DSM-III criteria (see [5]). In addition, the number out of eight of the criteria for the determination of BPD diagnosis were noted.

### 'Morbidity Budget'

Events related to the BPD were collated for the year preceding treatment and for the year following it. These events included the number of hospital admissions, time spent in hospital, self-harming behaviour and outwardly directed violence, frequency of medical attendance, drug use (prescribed and other) and time away from work. In every measure, there was a significant reduction in the year following treatment when compared with the year preceding it [3]. The focus of this report is on the difference in costs between hospital admissions before treatment and the same source of costs after treatment.

## Costing procedure

Acute inpatient admissions were classified according to the *Australian Diagnosis Related Groups Definitions (AN-DRGs) Manual* [8]. The AN-DRGs are currently the only casemix classification system for New South Wales (NSW) hospitals. Information pertaining to the use of these AN-DRGs was taken from *Casemix Standards for New South Wales* [9], a technical paper issued by NSW Department of Health, Structural and Funding Policy Branch, 1998. Each AN-DRG consists of episodic costs and Length of Stay (LOS) related costs. The episodic costs include 'invasive, pathology, imaging, emergency, intensive care and prostheses'. The LOS-related costs include 'clinical department medical salaries and wages, ward costs, depreciation and superannation'.

Cost weights have also been developed for these AN-DRGs. The total cost weights are broken down into relative weights for emergency, intensive care unit, transfers and a day cost weight where appropriate. A total cost weight of '1.00' is approximately equal to the average total cost for all AN-DRGs, which is \$2465. The total cost for an AN-DRG applies for the length of hospital stay up to the trim point (expressed as inpatient days) for that AN-DRG. Patients staying longer in hospital than the specified trim point are then allocated the 'outlier per diem payment' which applies to each additional day of admission beyond the trim point. The amount of this per diem payment depends on the particular AN-DRG. However, there is a ceiling of 120 days placed on this outlier per diem amount. Beyond the period of 120 days, a flat rate of 150 per bed day is applied, regardless of AN-DRG.

If there was uncertainty as to the precise AN-DRG code to apply to a particular inpatient admission, then the least costly option was chosen (e.g. AN-DRG 'without complications').

## Results

### Treatment effects: symptom check list and DSM scores

The mean Cornell Index score of the 30 subjects at initial assessment was 42.6 ( $SD = 14.9$ ); at 6 months 41.0 ( $SD = 15.1$ ); at 12 months 33.6 ( $SD = 14.8$ ); and at 24 months (i.e. 12 months after cessation of treatment) 28.6 ( $SD = 13.4$ ).

The data were approximately normally distributed with no apparent outliers. Bonferroni correction was made for multiple comparisons with  $p < 0.0125$

regarded as significant for each of the four pairwise comparisons.

A repeated measures analysis of variance indicated that there was a significant difference in scores on the Cornell Index across the four assessment periods ( $p = 0.0005$ ). Post hoc analysis was utilised to ascertain where the changes occurred. There was no change in the Cornell Index score between initial assessment and the 6 months treatment point ( $p = 0.103$ ), but there was a significant reduction between the 6 month and 12 month treatment period ( $p = 0.0005$ ). There was a further reduction in Cornell Index scores between the end of treatment and 12 months after treatment ( $p = 0.004$ ).

The mean DSM score at initial assessment was 17.4 ( $SD = 2.9$ ); at the end of 12 months treatment it was 11.0 ( $SD = 4.7$ ); and at 24 months (i.e. 12 months after cessation of treatment) it was 10.5 ( $SD = 5.1$ ).

The data were approximately normally distributed with no apparent outliers. Bonferroni correction was made for multiple comparisons with  $p < 0.017$  regarded as significant for each of the pairwise comparisons.

A repeated measure analysis of variance indicated that there is a significant difference between DSM scores at the three assessment points ( $p < 0.0005$ ). There was a significant difference in DSM scores after 1 year of treatment ( $p < 0.0005$ ). There was no further reduction in DSM scores in the 1 year post treatment period ( $p = 0.298$ ).

### Costing

The cost of hospital admission for the 30 patients 12 months prior to the psychotherapy intervention was \$684 346. These costs ranged from \$0 to \$143 756/patient. Four patients had no inpatient admissions.

The cost of hospital admissions for the 30 patients 12 months after the psychotherapy intervention was \$41 424. These costs ranged from \$0 to \$12 333/patient. Only nine patients had records of inpatient admissions.

Thus, for the 30 patients, there was a decrease of inpatient costs of \$642 922, which represents an average decrease per patient of \$21 431.

Many patients in this sample were particularly high users of medical services, which positively skewed the cost data. Aside from their borderline personality disorder, many patients had eating disorders and attempted suicide, all requiring high hospital

resource use in the 12 months prior to the commencement of the study. Therefore, it seemed appropriate to divide the sample into high and low utilisers of inpatient services and compare changes in resource use. Patients, whose prepsychotherapy hospital admissions amounted to more than \$10 000 for the year, were classified as 'high utilisers' and the remaining patients were 'low utilisers'.

There were 12 high utilisers in the sample of 30 patients. The average inpatient cost per high utiliser prior to psychotherapy was \$51 497, which decreased to \$3688 for the 12 months after psychotherapy.

The average inpatient cost per low utiliser prior to psychotherapy was \$3051 which decreased to \$286 for the 12 months after psychotherapy.

Both groups demonstrated more than a 90% decrease in inpatient costs. No patient showed an increase in inpatient costs.

By using the schedule fee and assuming two visits per week for 50 weeks, the estimated cost of psychotherapy is approximately \$13 000 per patient or about \$390 000 for the cohort. This represents a total saving of \$253 000 or a saving/patient of \$8431. (The schedule fee refers to the approved fees listed in the Medical Benefits Schedule for medical services provided outside hospitals. The schedule dictates the government rebates for items of service.)

The medical costs of the Westmead program are lower: approximately \$270 000 per annum for the cohort. They are generated by the trainee therapists each working 2 h per patient/week for 1 year and receiving 4 h training per week for 40 weeks per annum. Six consultant staff provide 4 h supervision for 40 weeks. However, the total cost of the program must include more difficult to compute costs such as use of hospital space, medical records, clerical services, electricity charges, etc. A figure for the total cost of the program will be given in our subsequent publication.

### Discussion

This study suggests that treating BPD patients according to certain psychodynamic principles is cost-effective. At least \$8000 in inpatient costs is saved per patient in the year following the end of treatment. Since the cohort of patients under investigation here maintained their improvement for 5 years [10], it is not unlikely that cost savings would also be maintained.

The question must now be asked whether the duration and frequency of psychotherapy was optimal.

Could it be reduced for the same effect (i.e. could the effectiveness be maintained by a lower 'dosage' [11] of therapeutic effort)?

The answer to this question is likely to be negative. The patients in this study showed no significant symptomatic improvement after 6 months where this was indicated by the Cornell Index score. Stopping treatment at this point may not be merely ineffective, it might be counter-productive. Gabbard [12] suggests that 'abandonment after several weeks or months due to third-or-fourth-party reimbursements constraints' may have disastrous effects in terms of activating the pathological behaviours of BPD.

Literature cited by Roth and Fonagy [1] suggests that at least 1 year of treatment is required for personality disorder. In an authoritative review of a large number of studies of treatment in various disorders, Orlinsky *et al.* [13] concluded that more treatment is likely to be more effective than less. Howard *et al.* [14] conducted a meta-analysis of 15 trials involving 2431 patients. They concluded that the best effect, for outpatients, is achieved with 52 sessions at a frequency of once a week. However, different client groups respond differentially, with depression and anxiety responding quicker than personality problems [13]. Lambert and Bergin [15] report on a study by Kopta *et al.* of these differential effects. They found that although chronic distress was alleviated in about 80% of patients at the 52nd session, characterological problems responded much more slowly.

These various data, combined with our own, suggest that at least 1 year's treatment is required for BPD. Might a longer period of treatment provide greater benefit? A study of Bakeman and Fonagy (unpubl. data) suggests that this may be so. In their investigation of the outcome of treatment in BPD, an 18-month period of treatment was used. Patients continued to show symptomatic improvement through the final 6 months of therapy. No data, based on prospective, controlled studies, exist for a period of treatment of 2 years or greater. However, Monsen *et al.* [16-18], in a prospective investigation of psychotherapy of 24-months duration, reported a treatment effect for BPD which was greater than our own. Whereas, only 70% of our patients continued to manifest the criteria of BPD, the figure had fallen to 30% in their study. Finally, seven patients could not be included in our follow-up because it was considered that ceasing treatment at 12 months would jeopardise the gains that these patients had made. These patients were not systematically followed up. However, it was clinically observed that they continued to improve.

Two are the subjects of individual reports which document very substantial clinical improvement [19,20].

A comparison is being made in our department between the effects of 1 year's therapy and those of treatment lasting 2 years. However, these data will not be available for some time. At present, from current information, it seems reasonable to suppose that a treatment period longer than 1 year, at least 2 years, is required to gain optimal clinical improvement in BPD. Further studies will be required in order to calculate whether this hypothesised treatment effect is also optimally cost-effective.

In conclusion, there is an impression, held in the minds of many health administrators, that BPD is a 'bottomless pit' [12], which will consume whatever therapeutic resources are offered, without adequate result. This impression is contradicted by the findings of this study which suggest that to offer an appropriate course of treatment for BPD sufferers is cheaper than the provision merely of resuscitative or similar crisis interventions when required. This study suggests that a suitable treatment course will have a duration of at least one year and will save the state at least \$8000 per patient in the year following therapy. Gabbard [12] reports that a similar saving was achieved by Linehan and her colleagues [21,22] in their experimental treatment of borderline patients, which is the only study, apart from our own, which is controlled, prospective, and involves a follow-up beyond the cessation of treatment.

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