ORIGINAL ARTICLE

Cost-effectiveness of Brief Psychodynamic-Interpersonal Therapy in High Utilizers of Psychiatric Services

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Background: It is known that a small number of patients with mental health problems have chronic disorders and account for a disproportionate amount of mental health costs. This randomized controlled trial evaluated the cost-effectiveness of psychodynamic-interpersonal therapy vs treatment as usual in patients with mental health problems who were unresponsive to usual treatment.

Method: Subjects (N = 110) with nonpsychotic disorders unresponsive to 6 months of routine specialist mental health treatment were enrolled in a randomized controlled trial. Sixty-three percent were women, the mean age was 41.4 years, the median duration of illness was 5 years, 68% were unemployed or receiving state benefits because of illness, and 75.5% had a depressive illness. Intervention patients received 8 weekly sessions of psychodynamic-interpersonal psychotherapy. Control patients received usual care from their psychiatrist. Outcome measures included ratings of psychological distress and health status and a detailed economic evaluation. Analysis was conducted on an intent-to-treat basis.

Results: Subjects randomized to psychotherapy had a significantly greater improvement than controls in psychological distress and social functioning 6 months after the trial. Baseline treatment costs were similar for both groups. Subjects who received psychotherapy showed significant reductions in the cost of health care utilization in the 6 months after treatment compared with controls. The extra cost of psychotherapy was recouped within 6 months through reductions in health care use.

Conclusion: These preliminary findings suggest that brief psychodynamic-interpersonal therapy may be cost-effective relative to usual care for patients with enduring nonpsychotic symptoms who are not helped by conventional psychiatric treatment.

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In the last 10 years, health economic evaluation has become increasingly important in the assessment of treatment interventions.[1-5] However, few studies involving psychotherapeutic treatments have been specifically designed to carry out detailed economic analyses, and cost reporting has been inconsistent.[6]

Psychotherapy is perceived as an expensive treatment for mental illness,[7] yet there is preliminary evidence that it may result in cost savings, primarily through the direct mechanism of a reduction in health care utilization, but also by the indirect effects of increased productivity.[6,8]

Very few studies have explored the benefits of psychotherapy for patients with complex disorders and enduring symptoms, as most efficacy studies specifically exclude such patients. These patients are high consumers of health care, so it is possible that improvements in psychological health and quality of life may lead to reductions in health care utilization.

There has been a tendency to fine-tune psychological treatments for specific psychological conditions in response to pressures to identify "empirically supported treatments."[9] As a result, patients with multisymptom complaints have been studied less frequently than those who meet strict diagnostic criteria for a single condition. A possible strength of therapies that have an interpersonal approach is that they do not have to be focused on specific symptom complexes,[10] although treatments for specific diagnostic groups are available.[11,12]

The evaluation of the economic impact of psychotherapy requires a clinically representative sample[13] and sufficient cost information so that the clinical utility of the study and any improvement in psychological health can be assessed.

The aims of this randomized controlled trial were to determine, among pa-

SUBJECTS AND METHODS

The study was conducted at 2 large hospitals in Manchester, England. Each psychiatric department has a computerized database that records demographic details and the severity of patients' symptoms on the Global Assessment Scale[14] when they are first assessed. Patients who had been receiving treatment for longer than 6 months were invited to join the study on a consecutive basis.

Inclusion criteria were patients between age 18 and 65 years with no improvement in psychological symptoms while in psychiatric treatment (determined by reference to the Global Assessment Scale score at initial assessment). Exclusion criteria were schizophrenia, dementia, brain damage, learning difficulties, and limited command of the English language.

Patients were initially approached to take part in the study by their own consultant psychiatrist. The study was then explained in detail by one of the researchers, and the patient was given a written explanation before being asked for informed, signed consent. A protocol of care was developed that required the researchers to inform the patients' clinicians of their care during the study, and of any important issues that arose.

PSYCHOTHERAPY INTERVENTION

Patients were offered 8 sessions of PI therapy. This model is similar to interpersonal therapy,[15] but places greater emphasis on the patient-therapist relationship as a tool for resolving interpersonal issues. There is less emphasis on the interpretation of transference than in most formal dynamic therapies.

The model was developed by Hobson[16] and has been previously known as *exploratory therapy*. Key features of the model include (1) the assumption that the patient's problems arise from or are exacerbated by disturbances of significant personal relationships; (2) a tentative, encouraging, supportive approach from the therapist, who seeks to develop deeper understanding with the patient through negotiation, exploration of feelings, and metaphor; (3) linkage of the patient's distress to specific interpersonal problems; and (4) use of the therapeutic relationship to address problems and test out solutions in the "here and now."

The therapy is described in more detail elsewhere.[17] The therapy is manualized,[18] and a rating scale for adherence is available.[19,20] It has been found to have equivalent effects to cognitive-behavioral therapy[21,22] for the treatment of depression, and has also been adapted to treat patients who somatize their psychological distress.[23] It is relatively easy to teach to health professionals, and the effects are maintained for at least 2 years.[24] A book summarizing the research on the model and containing an updated manual is due to be published this year.[25]

MAINTENANCE OF TREATMENT INTEGRITY

Each patient in the treatment group received individual therapy from either a clinical psychologist or a trainee psychiatrist; neither was involved in any other aspects of the patients' treatment. Both therapists had moderate experience of conducting dynamic psychotherapy and were at the midpoint of their training. Each therapist was trained in the PI model, which includes a video training package and individual supervision on a one-to-one basis from an experienced therapist. During the study, treatment fidelity was ensured by weekly individual supervision from a consultant psychotherapist for each therapist, with regular use of audiotaped recordings. Adherence to the model was rated using the Sheffield Psychotherapy Rating Scale.[19] The Sheffield Psychotherapy Rating Scale allows sessions to be rated according to 3 main subscales: 1 for PI therapy, 1 for cognitive-behavioral therapy, and 1 for generic aspects of psychotherapy.[19] Two independent raters each rated 1 tape per treatment, selected at random. The treatment method showed high scores on the PI and generic subscales and low scores on the cognitive-behavioral therapy scale, confirming adherence to the model.

USUAL CARE

Patients who were randomized to the "treatment as usual" arm continued to receive treatment under the care of their consultant psychiatrist. In most cases, further treatment consisted of regular outpatient consultations of 15 to 30 minutes. These included a review of the patient's psychological status and response to treatment, a risk assessment, discussion of medication, simple problem-solving techniques, advice about other support agencies, and, on occasion, involvement of the patient's partner in treatment. Other treatment options included referral for cognitive-behavioral therapy, referral to the community alcohol team, referral to an anxiety management group, or day hospital or inpatient admission.

SYMPTOM AND QUALITY-OF-LIFE MEASURES

At entry to the study, patients were assessed using the Schedules for Clinical Assessment in Neuropsychiatry[26] to determine the nature of their psychiatric disorder, according to criteria described in the *International Classification of Diseases, 10th Revision* (*ICD-10*).[27]

Outcome measures included self-reported symptom and quality-of-life measures, which were completed by

tients who are high utilizers of secondary psychiatric services, whether brief psychodynamic-interpersonal (PI) psychotherapy (a form of interpersonal therapy developed in England) plus usual treatment, compared with usual treatment alone, results in improved psychological symptoms, improved health status and quality of life, and reduced health care and associated costs. In response to previous criticisms of the economic evaluation of psychotherapy, the accurate measurement of direct treatment, direct nontreatment, indirect costs, and the costs of the psychotherapy was a primary component of the study.

RESULTS

One hundred forty-four eligible patients were referred to the study by consultant psychiatrists over a 2-year period. The **Figure** shows the progress of patients through the study according to the CONSORT statement.[35] Patients who declined to participate in the study did not differ from patients who agreed to be randomized in terms of their age ($t_{33.6} = 0.16$, $P = .88$, according to an unequal variance version of the Student t test) or sex ($\chi^2 = 1.75$, $P = .23$).

patients at the beginning and end of treatment, and at follow-up 6 months later. The Global Severity Index (GSI) of the Symptom Checklist-90-Revised (SCL-90-R) was used to indicate "current severity of the disorder," and the mean of the depression subscale of the SCL-90-R was used to indicate the severity of depression.[28] Patients with scores less than 0.75 were considered to have mild depression; 0.75 to less than 1.75, moderate depression; and 1.75 to 4.0, severe depression.[29]

Health status was measured using the 36-item Short-Form Health Survey (SF-36).[30] The SF-36 has 8 domains that cover aspects of physical, psychological, and social functioning. The EuroQol 5D (EQ-5D) questionnaire is a standardized generic instrument for measuring health-related quality of life.[31] The EQ-5D consists of 5 health domains: mobility, self-care, ability to undertake usual activities, pain and discomfort, and anxiety and depression. Each domain has 3 levels that generate 243 possible health states into which a patient can be categorized. The EQ-5D also provides a single preference weight (also described as a utility or value) for each health state. These tariffs can be used as quality-adjustment weights to turn a profile of health states over time into quality-adjusted life years (QALYs) or quality-adjusted life months (QALMs).

RESOURCE UTILIZATION AND COSTS

Information on health and social care utilization was collected from the patients at each assessment using a detailed questionnaire based on a well-established method for recording health economic data developed at the University of York, York, England. Assessments were conducted on an independent basis by a researcher who was not involved in the patients' treatment or therapy. The collection of health economic data, however, makes it difficult for assessors to be unaware of the treatment that patients have received during the trial. Detailed service utilization and nontreatment costs were recorded for each patient for 3 specific periods: the 3 months prior to study entry, the intervention period of 8 weeks, and the 6 months after the intervention had ended. All unit costs were adjusted to 1996-1997 prices using the relevant price index.

Direct treatment costs were derived using activity data and applying an appropriate unit cost to each recorded consultation, contact, or episode of care. Hospital services recorded included inpatient and day patient stays, outpatient visits, and accident and emergency attendances. These unit costs were collected directly from the relevant hospitals. Primary and community care services recorded included family physician and domiciliary care services, day centers, alternative therapy, and medication. The costs of primary and community care services were taken from the Personal Social Services Research Unit's *Unit Costs of Health and Social Care*,[32] and medication costs were estimated using the *British National Formulary*.[33] *Direct nontreatment costs* included travel costs and additional patient expenditure as a result of the illness. *Indirect costs* included the time off work to attend appointments and loss of earnings. The costs of psychotherapy were calculated on the basis of 45 minutes per session, plus 30 minutes per session for note recording, plus supervision and related overhead costs.

The study was granted ethical approval from the Central Manchester Ethics Committee.

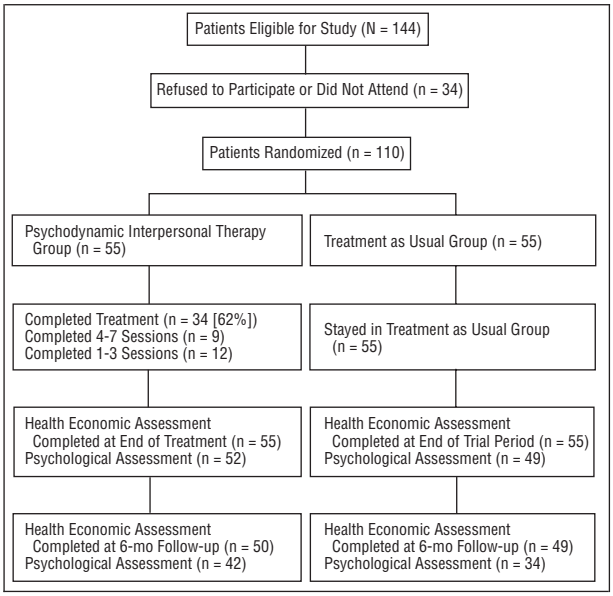
DATA ANALYSIS

Randomization was carried out using a computer-generated series of random numbers provided by the trial statistician. Allocation of patients to trial groups was carried out by a trial secretary who was not involved in the assessment of patients. The data were analyzed using an intent-to-treat approach. Continuous data from the SCL-90-R and the SF-36 for the 2 groups were compared using the Student *t* test, followed by analysis of covariance to control for baseline variations. No attempts were made to statistically account for missing values, but baseline data of nonresponders were compared with data of responders to determine any differences.

The EQ-5D data and the resource use and cost data are presented using median values and 95% confidence intervals (CIs). Comparisons were made using the Mann-Whitney *U* test. The total cost data were analyzed by (natural) logarithmic transformation to reduce the effect of outliers on the overall results. The differences were analyzed at the $P<.05$ level of statistical significance using the Student *t* test. The geometric mean and the ratio of the mean differences are reported.

Because of the wide variation in unit cost data used in the base case analysis (for example, the cost of a psychiatric outpatient attendance varied from $69.20 to $330.20), extensive sensitivity analyses were conducted using Monte Carlo simulation techniques.[34] The unit cost estimates of all health care resource use items used in the base case analysis were varied using minimum and maximum cost estimates. For hospital services, these figures were obtained from the relevant financial department. Where no range existed for unit cost estimates (eg, primary care), the unit costs used in the base case analysis were varied by 20%. Simulation techniques were then used to randomly sample unit cost data from these imputed distributions to determine the combined impact on mean costs of the potential uncertainty in unit cost estimates.

Of the 110 patients who entered the trial, 69 (62.7%) were women and the mean age was 41.4 years (SD, 9.8 years). Sixty-eight patients (61.8%) were deemed incapable of work and were receiving state benefits. The median duration of the current illness episode for the whole group was 5 years (interquartile range [IQR], 3-9 years), and the time since the first episode of illness was 10 years (IQR, 5-18 years). Patients had been receiving treatment from psychiatric services for a median time of 3 years (IQR, 2-6 years). Independent health economic assessments were completed for 93.6% patients at the end of the treatment phase and for 90% of patients at the 6-month follow-up (Figure). Psychological assessments were completed on 91.8% of patients at the end of the treatment phase and for 69.1% at the 6-month follow-up. The mean GSI score for those who completed questionnaires was 2.0 (SD, 0.76) vs 2.07 (SD, 0.78, $P = .67$) for noncompleters. Two patients who had been in the control group died during the follow-up period; one committed suicide and the other died from alcohol abuse.



Progress through the study, including flow of participants and timing of outcome measures.

Table 1. Major Diagnostic Groupings According to *ICD-10

Diagnostic Grouping	*ICD-10* Classification	No. (%) of Patients (N = 110)
Depressive episode		
Mild	F32.0	13 (11.8)
Moderate	F32.1	34 (30.9)
Severe without psychotic symptoms	F32.2	23 (20.9)
Recurrent depressive disorder		
Current episode moderate	F33.1	4 (3.6)
Current episode severe without psychotic symptoms	F33.2	7 (6.4)
Dysthymia	F34.1	10 (9.1)
Bipolar affective disorder		
Current episode mild/moderate depression	F31.3	2 (1.8)
Phobic anxiety disorders	F40.0-F40.9	6 (5.4)
Panic disorder	F41.0	40 (36.4)
Generalized anxiety disorder	F41.1	17 (15.4)
Obsessive-compulsive disorder	F42.0-F42.9	7 (6.4)
Somatoform disorders	F45.0-F45.9	10 (9.1)

**From* The ICD-10 Classification of Mental and Behavioural Disorders.[27]

SYMPTOM AND QUALITY-OF-LIFE MEASURES

All patients received at least 1 *ICD-10* diagnosis (**Table 1**), and there was no difference between the 2 groups in the type of psychiatric disorder (eg, depressive episode [$P = .84$] and panic disorder [$P = .55$]). Depression was the most common diagnosis (83 patients [75.5%]), although many patients had several major psychiatric diagnoses. The stratification of patients according to their scores on the SCL-90-R depression subscale was 7 (6.4%) mild, 11 (10.0%) moderate, and 92 (83.6%) severe.

There were no significant differences between the treatment and control groups on the GSI or depression subscale of the SCL-90-R or on any subscale of the SF-36 (**Table 2**). Patients who received psychotherapy showed significantly greater improvement than controls on the GSI and the depression subscale of the SCL-90-R at the 6-month follow-up assessment (Table 2). Patients in the psychotherapy group reported significantly better social functioning on the SF-36 at the 6-month follow-up assessment. There were no differences in any of the other domains.

There was no difference in the preference weights for the EQ-5D between the 2 groups at baseline, and the change scores over the 6 months following treatment were not statistically different (**Table 3**). Since the duration of the study was less than 1 year, QALMs were calculated instead of QALYs. This was done by weighting the duration of each assessment period using preference weighting derived from the EQ-5D tariffs (Table 3). The results showed that patients in the psychotherapy group achieved 4.87 QALMs, compared with 3.48 QALMs for the treatment as usual group (if patients had been in full health for the duration of the trial the scores would have been approximately 9.7 QALMs in each group). This difference, however, was not statistically significant, and the 95% CI for QALMs gained includes a small range in which QALMs would be lost in the psychotherapy condition (–1.46 to 8.27).

RESOURCE UTILIZATION AND COSTS

There were no significant differences between the 2 groups on any of the aspects of service contact for the 3 months prior to study entry. During the intervention phase of the study, patients in the psychotherapy group had significantly more outpatient appointments than the controls (**Table 4**), because each psychotherapy session was counted as an outpatient session. There were no differences between the psychotherapy group and controls for any of the other indices of service utilization during the intervention phase.

During the 6 month follow-up period, patients who had received psychotherapy, in comparison with controls, showed a significant reduction in inpatient days, family physician consultations, practice nurse contacts, number of medications, and informal care required from relatives (Table 4).

The direct treatment costs for the 3 months prior to study enrollment were similar for the treatment and control groups (**Table 5**). During the intervention phase of the study the direct treatment costs were not statistically significantly different. For the 6-month follow-up period the costs were significantly lower for the psychotherapy group than for the controls. When direct nontreatment costs and indirect costs were included, the same pattern remained (Table 5).

When the costs for the intervention phase of the study and the 6-month follow-up period were added, there was no significant difference between the 2 groups.

A sensitivity analysis was used to examine the robustness of the base case results to variations in unit cost estimates, since this is a potential source of error. In particular, we determined the probability that the results of the base case analysis could be reversed, so that the mean cost of the psychotherapy group would exceed the mean cost of the control group. Following sensitivity analysis, the expected mean direct treatment costs and total costs

Table 2. Psychological Scores and Health Status for the Psychotherapy Group vs the Treatment as Usual Group

Measure*	Assessment†	Mean (SEM) Score [No. of Patients]		P‡
		Psychotherapy Group	Treatment as Usual Group	
SCL-90-R GSI	B	2.01 (0.10) [55]	2.03 (0.11) [55]	
	T1	1.82 (0.11) [52]	1.92 (0.11) [49]	.25
	T2	1.76 (0.13) [42]	2.05 (0.16) [34]	.03
SCL-90-R depression subscale	B	2.51 (0.12) [55]	2.47 (0.12) [55]	
	T1	2.30 (0.12) [52]	2.44 (0.12) [49]	.08
	T2	2.16 (0.14) [42]	2.44 (0.17) [34]	.03
SF-36 physical function subscale	B	58.6 (3.61) [55]	54.3 (3.93) [55]	
	T1	60.6 (3.75) [51]	54.7 (4.49) [48]	.78
	T2	61.8 (3.87) [42]	51.0 (5.67) [34]	.32
SF-36 role limitation (physical) subscale	B	23.6 (4.87) [55]	30.1 (5.00) [49]	
	T1	30.0 (5.10) [50]	36.4 (6.09) [48]	.81
	T2	26.9 (5.47) [40]	24.3 (6.38) [34]	.35
SF-36 role limitation (mental) subscale	B	21.8 (4.76) [55]	24.5 (4.74) [49]	
	T1	18.3 (4.62) [50]	20.8 (4.72) [48]	.91
	T2	22.5 (5.26) [40]	20.6 (5.81) [34]	.91
SF-36 social functioning subscale	B	35.6 (3.39) [55]	30.2 (3.59) [49]	
	T1	43.4 (3.67) [51]	37.0 (4.43) [48]	.35
	T2	48.9 (4.22) [42]	29.7 (4.61) [34]	.002
SF-36 mental health subscale	B	36.6 (3.01) [55]	34.1 (2.63) [54]	
	T1	38.3 (2.50) [51]	38.3 (3.01) [48]	.43
	T2	39.5 (2.46) [42]	33.5 (3.70) [34]	.28
SF-36 energy and vitality subscale	B	27.5 (2.32) [55]	29.9 (2.63) [54]	
	T1	28.5 (2.09) [51]	26.9 (2.69) [48]	.54
	T2	29.8 (2.72) [42]	25.4 (3.47) [34]	.28
SF-36 pain subscale	B	47.5 (3.72) [55]	45.1 (3.53) [54]	
	T1	51.9 (3.77) [51]	42.1 (3.90) [48]	.04
	T2	48.1 (3.53) [42]	40.5 (4.59) [34]	.22
SF-36 health perceptions subscale	B	32.3 (2.92) [55]	34.2 (3.16) [55]	
	T1	36.4 (2.37) [51]	32.1 (3.08) [49]	.14
	T2	34.8 (3.04) [42]	31.6 (4.62) [34]	.24

*SCL-90-R indicates Symptom Checklist-90-Revised; GSI, Global Severity Index; and SF-36, 36-item Short-Form Health Survey.
†B indicates baseline; T1, end of trial; and T2, 6-month posttrial assessment.
‡Analysis of covariance for the 2 differences from baseline to T1 and T2, adjusted for any differences at baseline in SCL-90-R and SF-36 scores.

Table 3. EuroQol 5D Questionnaire Utility Weights and Quality-Adjusted Life Months (QALMs) for the Psychotherapy Group vs the Treatment as Usual Group*

	Median (95% CI) [No. of Patients]		P†
	Psychotherapy Group	Treatment as Usual Group	
EuroQol SD questionnaire utility weight			
B	0.29 (–0.24 to 0.83) [54]	0.26 (–0.21 to 0.81) [52]	.98
T1	0.52 (–0.15 to 0.85) [51]	0.33 (–0.23 to 0.84) [46]	.15
B-T1 change in score	0.00 (–0.63 to 0.72) [50]	0.00 (–0.78 to 0.60) [44]	.20
T2	0.62 (–0.31 to 0.85) [44]	0.26 (–0.17 to 0.87) [47]	.03
B-T2 change in score	0.04 (–0.65 to 0.80) [43]	0.00 (–0.78 to 0.61) [46]	.11
QALMs			
B-T1	1.21 (–0.25 to 3.20) [50]	1.04 (–0.46 to 2.99) [44]	.57
T1-T2	3.39 (–1.46 to 8.27) [44]	2.44 (–1.06 to 5.96) [43]	.10
B-T2	4.87 (–1.66 to 11.59) [43]	3.48 (–1.50 to 7.98) [43]	.13

*CI indicates confidence interval; B, baseline; T1, end of trial; T2, 6-month posttrial assessment; and B-T2, total change in scores.
†Mann-Whitney U test.

(with 95% CIs) from baseline to the 6-month follow-up were $1947.86 ($1654.18 to $2243.14) and $2114.55 ($1817.69 to $2411.41), respectively, for the psychotherapy group and $2357.44 ($1989.14 to $2689.23) and $2600.33 ($1989.14 to $2689.23) for the control group. Allowing for uncertainty in unit cost estimates, it was estimated that there was a 55% probability that the mean cost savings would be lower than reported in the base case analysis. However, the probability that the base case costs of the psychotherapy group would exceed the base case costs of the control group was extremely low for both direct treatment costs and total costs (3.4% and 1%, respectively). Hence, the results of the sensitivity analysis demonstrate that the mean cost results reported in the

Table 4. Resource Utilization for the Psychotherapy Group vs the Treatment as Usual Group*

Resource	Assessment Period†	Psychotherapy Group		Treatment as Usual Group		*P*‡
		No.	Median (95% CI) [Range]	No.	Median (95% CI) [Range]	
Inpatient days	B-T1	1	0 (0-0.68) [0-1]	3	0 (0-31.2) [0-42]	.29
	T1-T2	4	0 (0-8.68) [0-9]	11	0 (0-29.5) [0-30]	.04
Outpatient attendance	B-T1	52	8 (1-13.03) [1-14]	42	2 (0-11.5) [0-13]	<.001
	T1-T2	45	2 (0-11.35) [0-12]	40	4 (0-27.5) [0-30]	.12
Accident and emergency visits	B-T1	1	0 (0-0.68) [0-1]	1	0 (0-1.4) [0-1.4]	.98
	T1-T2	3	0 (0-1) [0-1]	7	0 (0-3.5) [0-4]	.14
Day hospital visits	B-T1	1	0 (0-2.1) [0-3]	2	0 (0-14.4) [0-15]	.55
	T1-T2	2	0 (0-66.4) [0-84]	5	0 (0-123.77) [0-145]	.24
Family physician contacts	B-T1	38	1 (0-13.6) [0-16]	38	2 (0-20.4) [0-24]	.40
	T1-T2	44	3 (0-28.5) [0-34]	44	5 (0-29) [0-32]	.007
Practice nurse contacts	B-T1	3	0 (0-1) [0-1]	7	0 (0-4.8) [0-6]	.16
	T1-T2	3	0 (0-4.63) [0-6]	13	0 (0-55.75) [0-70]	.002
Community psychiatric nurse contacts	B-T1	5	0 (0-20.75) [0-26]	7	0 (0-12.7) [0-13]	.52
	T1-T2	3	0 (0-27.05) [0-32]	5	0 (0-23) [0-26]	.46
Prescription medications	B-T1	48	2 (0-7) [0-7]	50	3 (0.3-9.4) [0-10]	.07
	T1-T2	47	2 (0-7.7) [0-8]	47	4 (1-11.8) [1-12]	.04
Informal care, h/wk	B-T1	17	0 (0-106.5) [0-112]	22	0 (0-168) [0-168]	.16
	T1-T2	11	0 (0-72.5) [0-90]	20	0 (0-166.8) [0-168]	.02

*For clarity, some of the service contacts rarely used by both groups (eg, district nurse) were excluded. All service contacts, however, were included in the calculation of the overall costs of the trial. CI indicates confidence interval.
†B indicates baseline; T1, end of trial; and T2, 6-month posttrial assessment.
‡Mann-Whitney U test.

Table 5. Costs for the Psychotherapy Group vs the Treatment as Usual Group*

	Assessment Period†	Psychotherapy Group		Treatment as Usual Group		Ratio of Geometric Means (95% CI)	*P*
		Geometric Mean, $	No. of Patients	Geometric Mean, $	No. of Patients		
Total direct treatment costs	B	752	55	786	55	1.04 (0.77-1.42)	.78
	B-T1	664	52	537	51	0.81 (0.54-1.20)	.29
	T1-T2	926	52	1430	49	1.55 (1.01-2.38)	.045
	B-T2	1794	51	2226	47	1.24 (0.87-1.78)	.23
Total direct nontreatment costs	B	27	50	37	52	1.05 (0.71-2.40)	.39
	B-T1	49	45	33	43	0.69 (0.38-1.25)	.22
	T1-T2	21	45	64	43	3.37 (1.46-6.51)	.004
	B-T2	76	45	76	43	1.01 (0.54-1.89)	.98
Total direct treatment and nontreatment costs	B	818	55	878	55	1.07 (0.79-1.46)	.64
	B-T1	737	52	589	51	0.80 (0.54-1.20)	.27
	T1-T2	1006	52	1567	49	1.56 (1.00-2.37)	.04
	B-T2	1959	51	2424	47	1.24 (1.00-2.37)	.24
Total costs given monetary value‡	B	837	55	900	55	1.08 (0.80-1.45)	.63
	B-T1	737	52	638	51	0.87 (0.57-1.28)	.47
	T1-T2	1006	52	1595	49	1.59 (1.04-2.42)	.03
	B-T2	1959	51	2465	47	1.26 (0.88-1.80)	.21

*A separate comparison of indirect costs was not performed because of the high proportion of patients who did not incur them. CI indicates confidence interval.
†B indicates baseline; T1, end of trial; and T2, 6-month posttrial assessment.
‡Direct treatment, direct nontreatment, and indirect costs.

base case analysis were extremely robust to different assumptions regarding the estimates of unit cost. It is important to emphasize that the sensitivity analysis does not modify the sampling precision of the base case findings but rather supports the validity of the price assumptions that were made.

An incremental cost-utility ratio (ie, the additional costs of achieving an improvement in quality of life) was not undertaken, as the results suggested that psychotherapy was unlikely to cost more than treatment as usual.

The main analyses were repeated for the 83 patients with depressive disorders. Similar cost savings were found in the 6 months after the end of the trial for depressed patients who had received psychotherapy. In addition, there was a significant improvement in quality of life (EQ-5D scores) ($P = .04$) for the depressed patients who received psychotherapy in

comparison with controls (data available from the authors on request).

COMMENT

This is one of the few prospective, randomized controlled trials of brief psychotherapy that has included a detailed health economic evaluation. The findings demonstrate that brief PI therapy for patients who are high utilizers of psychiatric services results in a significant improvement in their psychological status and a substantial reduction in health care utilization and health care costs in the 6 months following treatment. Costs associated with both primary and secondary care were significantly reduced in the follow-up period. The additional costs of psychotherapy during the intervention phase were offset by this reduction after treatment. The results add weight to the growing body of evidence for the benefit of psychological treatments that have an interpersonal focus.[36,37]

Although there was a significant improvement in the psychological status of the patients who received psychotherapy, the change in scores on the SCL-90 was relatively small, and most patients' scores remained within the morbid range. The intervention was, however, extremely brief, and it is possible that psychotherapy of a longer duration might have resulted in further improvement.[38] The encouraging results from the present study merit examination of the benefits of PI therapy over a longer period in patients with complex and enduring symptoms.

Patients who received psychotherapy also showed a significant improvement in the social functioning dimension of health status. Changes in other domains of health status and quality of life, however, were much less marked, and the study was too small to explore the effect of psychotherapy on QALMs. Further research is required to determine whether the numerical advantages associated with the psychotherapy group in the present study can be reproduced in a more robust form with a larger study.

Our recruitment procedures ensured that the study patients were representative of high utilizers of psychiatric services, and that they were not selected according to supposed suitability for psychotherapy or by advertisement. This was done to ensure the clinical utility of the treatment.

Limitations of the study include the following: (1) Thirty-four patients who met the study criteria failed to enter the study because of refusal or initial acceptance but then failure to attend. The most common reason for not entering the study was the stated fear that the trial would disrupt an established trusting relationship between the patient and his or her own psychiatrist. This suggests that brief psychotherapy may not be an acceptable treatment for all patients who are high utilizers of psychiatric services. (2) The study was carried out in hospitals located in a deprived inner-city area in England. The results may not be generalizable to other hospitals that serve different sociodemographic populations. (3) Contrary to the recent trend in research, patients were not recruited on the basis of a specific diagnostic group; instead, they were selected on the basis of long-term health service use. It can be argued that the heterogeneity of the patient group makes comparison with other studies very difficult. However, the study has considerable relevance to everyday practice, and its primary purpose was to perform an economic evaluation, not an efficacy study. (4) The 6-month response rate for the psychological questionnaire was low. This may have affected the outcome data, as it is possible that patients who were doing less well or who had more severe symptoms may have been more reluctant to complete psychological questionnaires. However, there was no difference in baseline scores between those patients who did and did not complete psychological measures at 6 months. Health economic data were more complete, with assessments on 90% of patients at 6 months. (5) There was no attempt to control for the nonspecific effects of psychotherapy, as the main aim of the study was to evaluate the economic effects of an additional intervention. This required comparison with a treatment as usual group. The improvements following therapy may have resulted entirely from the so-called *nonspecific effects* of therapy; however, PI therapy has already been found to be superior to a psychological placebo in patients with chronic somatic symptoms.[23]

The results of this study are promising. In particular, they suggest that a relatively small improvement in psychological functioning following psychotherapy may have had a significant economic impact in the 6 months following treatment. Further studies of the potential benefits of interpersonal psychotherapies for patients with complex disorders are required, as such patients are often excluded from formal psychotherapy treatment trials.

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