Two psychological treatments for hypochondriasis

A randomised controlled trial

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Background Hypochondriasis is generally considered difficult to manage. This study aimed to assess the effectiveness of cognitive therapy and to compare it with an equally credible, alternative treatment.

Method Forty-eight patients with hypochondriasis were initially randomly assigned to either cognitive therapy, behavioural stress management or a no treatment waiting list control group. At the end of the waiting period, patients in the control group were randomly assigned to one of the two treatments. Assessments were at pre-, mid- and post-treatment or waiting list and at three-, six- and 12-month post-treatment follow-up.

Results Comparisons with the waiting list group showed both treatments were effective. Comparisons between the treatments showed that cognitive therapy was more effective than behavioural stress management on measures of hypochondriasis, but not general mood disturbance at mid-treatment and at post-treatment. One year after treatment patients who had received either treatment remained significantly better than before treatment, and on almost all measures the two therapies did not differ from each other.

Conclusions Cognitive therapy is a specific treatment for hypochondriasis. Behavioural stress management is also effective but its specificity remains to be demonstrated.

Hypochondriasis is common in medical settings (Kellner, 1985; Barsky *et al*, 1990) and generally considered difficult to manage. Until recently there was no empirically validated treatment. In a small-scale study, Avia *et al* (1996) found group cognitive–behavioural treatment superior to no treatment, but interpretation of their results was complicated by inclusion of subclinical cases. Warwick *et al* (1996) found cognitive therapy superior to no treatment but use of only one therapist raised questions about generalisability of their results. The present study attempted to replicate and extend Warwick *et al* (1996) by: (a) using eight new therapists; (b) including a longer post-treatment follow-up (12 months *v.* three months); and (c) assessing the role of non-specific factors in determining outcome by comparing cognitive therapy with an equally credible alternative treatment which involved the same amount of therapist contact but did not directly challenge patients' negative beliefs.

METHOD

Design

Patients were initially randomly assigned to either cognitive therapy, behavioural stress management or a waiting list. Patients receiving cognitive therapy or behavioural stress management had up to 16 sessions in the first four months and up to three booster sessions in the next three months. Patients in the waiting list group received no treatment for four months, after which they were randomly assigned to one of the two treatments.

Patients

All Oxfordshire general practitioners (GPs), psychiatrists and psychologists were sent a letter requesting referrals for a study of psychological treatments for hypochondriasis. It was explained that two treatments were being investigated, both appeared promising and it was not known which was most effective. Recruitment was between August 1992 and May 1995. Referred patients were assessed using the Structured Clinical Interview for DSM–III–R (SCID; Spitzer & Williams, 1986) and accepted if they met the following criteria: (a) DSM–III–R (American Psychiatric Association, 1987) criteria for hypochondriasis, these include a minimum duration of six months; (b) at least a 30% belief that they currently had a serious illness; (c) the patient considered this health worry to be their main problem; (d) age 18–60 years; (e) no previous treatment with cognitive therapy or behavioural stress management; (f) no depressive disorder severe enough to require immediate psychiatric treatment; (g) no physical illness which would account for their health concerns; (h) no psychotic disorder; (i) willingness to accept random allocation.

Forty-eight patients met entry criteria and were randomised to a treatment or waiting group (cognitive therapy, n=16; behaviour stress management, n=17; waiting list, n=15). Two patients subsequently dropped out. One (allocated to behavioural stress management) started a new job in a different area after two sessions and was unable to attend for further treatment or assessment. Lack of data meant that this patient could not be included in the analyses. The other (allocated to cognitive therapy) received a positive result in a routine cervical smear test shortly after the mid-treatment assessment and withdrew from the trial. As she had provided mid-treatment data, this was included in the analyses. The sources of patient referral were: GPs (70%), medical specialists (17%) and clinical psychologists or psychiatrists (13%). The major health worries of the subjects were: cardiac disease (30%), cancer (43%), unspecified serious illnesses (25%), multiple sclerosis (2%) and AIDS (2%). Most patients had concerns about several symptoms and worried about more than one illness.

Treatments

Each treatment comprised up to 16 weekly one-hour sessions in the first four months and up to three booster sessions in the next three months. Medians (and quartile ranges) for numbers of sessions and boosters were 15 (10–16) and 2 (0–3) for

cognitive therapy and 15 (14–16) and 2 (1–3) for behavioural stress management.

Several procedures were common to both treatments. At the first session, patients were given a booklet describing the rationale for their treatment and an overview of the treatment. At the end of the second session patients rated the extent to which they thought their treatment was logical, would be successful, and whether they would recommend it to a friend, using Borkovec & Nau's (1972) scales. Between treatment sessions, patients completed a series of homework assignments, which were treatment-specific. All sessions were audiotaped and patients were asked to listen to the previous session before their next appointment.

Cognitive therapy

The cognitive therapy treatment was based on the model of hypochondriasis outlined in Salkovskis (1989) and Warwick & Salkovskis (1990), and was essentially the same as in Warwick *et al* (1996). First, an individual formulation of the factors involved in the maintenance of the patient's symptoms and illness beliefs was developed. Careful assessment and symptom monitoring was used to identify preliminary evidence that psychological factors might be involved in determining the patient's particular symptoms and distress. A mixture of cognitive and behavioural techniques were then used to modify the patient's belief that he or she was suffering from a serious illness and the factors that were contributing to the maintenance of that belief. A general aim was to help the patients realise that their problem was worrying about illness, rather than illness *per se*. Cognitive procedures included: identifying and challenging patients' evidence for their misinterpretations of symptoms and signs; helping patients to construct more realistic interpretations; restructuring images; and modifying dysfunctional assumptions. Following the findings of Wells & Hackmann (1993) beliefs about the interpersonal cost of illness, assumptions about the process of dying and superstitious beliefs about health were targeted as well as assumptions about symptoms, illnesses and medical procedures. Behavioural experiments were used to aid reattribution. These included inducing symptoms by deliberate body focusing or dwelling on fearful thoughts, increasing engagement in activities that were avoided because of illness beliefs (for example, exercise), response prevention for repeated bodily checking and prevention of reassurance seeking. Where necessary, others who were normally involved in the provision of repeated reassurance were included in the response prevention programme and were given instructions in how to deal correctly with any further requests for reassurance. Therapists were allowed to use graded exposure to avoided illness-related situations but this procedure was very rarely used as patients' predominant problem was disease conviction, not illness phobia. Treatment included substantial education regarding the meaning of symptoms and of previous medical interventions and opinions. Homework assignments included keeping a daily record of negative thoughts and rational responses, and conducting behavioural experiments to test these thoughts.

Behavioural stress management

This treatment was based on the rationale that some people react to stress by becoming worried about their health, and that such worries are best dealt with by acquiring a comprehensive set of stress management techniques. In the first session careful history-taking was used to identify current stresses and stresses that coincided with the onset of hypochondriasis. To further aid in the identification of stressors, patients completed a 117-item 'Hassles Scale' (Kanner *et al*, 1981) covering almost any conceivable stressor from minor annoyances to major pressures and difficulties. It was explained that stress can produce a wide range of physical symptoms and psychological changes. A long list of the 'effects of stress' was provided, but no attempt was made to demonstrate a particular cause for the symptoms the patient was specifically concerned about. Next, a series of stress management procedures were taught. The first was Öst's (1987) applied relaxation procedure, which is a step-by-step training programme for developing a rapid and portable relaxation skill. Training extended over 10 sessions and included, in the application phase, instructing patients to expose themselves repeatedly to any situations or activities they were avoiding because of anxiety, including, if relevant, situations which were avoided because they triggered health worries. For the first few sessions, only applied relaxation was taught. Thereafter, other stress management procedures were gradually introduced. When applicable, patients were also taught problem-solving (Hawton & Kirk, 1989), assertiveness and time-management skills. If intrusive thoughts about illness remained persistent, Borkovec *et al*'s (1983) stimulus control procedure for postponing worry to a specified daily 'worry time' was used. Therapists did not directly challenge the evidence for and against patients' illness beliefs or provide specific alternative explanations for their symptoms, but they did (when appropriate) remind patients that previous physical investigations had proved negative and their doctor was convinced they did not have a serious illness. Homework included daily relaxation practice and regular practice of the other stress management skills.

Treatment adherence

To check therapists' adherence to the treatment protocol, a selection of session audiotapes were rated for procedures which should be unique to each treatment. The relative emphasis placed on several non-unique procedures was also rated. Tapes were available from 38 (83%) of treated patients. One audiotape per patient was randomly selected for rating by independent assessors. Table 1 shows the ratings.

Procedures that should be unique to one of the two treatments were: cognitive restructuring of illness beliefs (cognitive therapy); behavioural experiments testing illness beliefs and/or alternative explanations of symptoms (cognitive therapy); in-session training in relaxation (behavioural stress management); and relaxation homework (behavioural stress management). Ratings of the presence/absence of specific procedures indicated that there were no protocol violations in cognitive therapy. In behavioural stress management, cognitive restructuring was detected in one out of 18 rated sessions (6%), but this violation was considered trivial as it lasted less than five minutes. There were no other protocol violations.

Ratings of non-unique procedures indicated that, compared to behavioural stress management, cognitive therapy sessions devoted more time to discussion of health worries (irrespective of whether restructuring was attempted) and devoted less time to discussion of general stressors (such as interpersonal, financial, time management or work problems). Stimulus control for

Table 1 Treatment procedures

Procedure	Cognitive therapy	Behavioural stress management	Significance of difference cognitive therapy *v.* behavioural stress management
Percentage of sessions in which procedure was detected[1]			
Relaxation training	0	83	<0.001
Relaxation homework	0	94	<0.001
Cognitive restructuring	95	6	<0.001
Behavioural experiments[2]	80	0	<0.001
Discussion of general stressors[3]	45	100	<0.001
Discussion of interpersonal problems	30	83	<0.01
Discussion of non-interpersonal problems	30	78	<0.01
Discussion of health worries (irrespective of whether cognitive restructuring was attempted)	100	72	<0.05
Stimulus control	11	33	0.17
Reassurance	15	11	0.72
Mean percentage of session time devoted to procedure[1]			
Cognitive restructuring	67	<1	<0.001
Behavioural experiments	15	0	<0.001
Discussion of general stressors[3]	8	44	<0.001
Discussion of interpersonal problems	8	27	<0.01
Discussion of non-interpersonal problems	1	20	<0.001
Discussion of health worries (irrespective of whether cognitive restructuring was attempted)	74	8	<0.001
Reassurance	3	<1	0.62

n=20 tapes for cognitive therapy and 18 tapes for behavioural stress management. Some procedures were only rated for presence/absence. For these procedures, the percentage of session time devoted to the procedure is not available.
1. Between-treatment comparisons are based on χ^2 analysis for percentage of sessions data and on the Mann–Whitney test for percentage of session time data.
2. No instances of either in-session or homework exposure to avoided illness-related situations (hospitals, television programmes, etc.) were detected.
3. Any type of external stressor (e.g. interpersonal problems, financial problems, work problems, childcare problems, etc.).

managing health worry and reassurance that previous medical tests and opinions had proved negative were not often detected and the two treatments did not differ in time devoted to these two procedures.

Therapists

Eight clinical psychologists with experience in the use of cognitive and behavioural treatments for anxiety served as therapists. Before starting the trial, each had specific training in the treatments being studied and treated at least one practice case with each treatment. Regular individual supervision was provided throughout the trial. Therapists varied in the total number of cases treated but had an even balance of cognitive therapy and behavioural stress management cases. Allocation to therapist was on the basis of available time.

Assessments

Assessments were at pre-treatment/wait, mid-treatment/wait (eight weeks), post-treatment/wait (16 weeks) and at three-, six- and 12-month follow-up.

Measures

A battery consisting of 10 measures of different aspects of the hypochondriasis syndrome was used. Patients completed visual analogue scales assessing: time seriously worried about health (0–100), time free of health worries (0–100), avoidance of situations/events that might trigger health worries (0–5), checking parts of the body for signs of illness (0–5), need for reassurance (0–100) and health worry related distress/disability (0–8). The latter was also rated by an independent assessor. Illness-related thoughts were assessed in several ways. Patients specified the main illness they were concerned about and rated how much they believed (0–100) they had that illness when feeling anxious. A specially devised 18-item cognitions questionnaire also assessed mean frequency (1–5) and belief (0–100) in thoughts about a standardised set of illnesses.

In addition to the measures of hypochondriasis, several general mood measures were included. Patients completed the Beck Anxiety Inventory (BAI; Beck *et al*, 1988) and the Beck Depression Inventory (BDI; Beck *et al*, 1979). An independent assessor completed the Hamilton Anxiety Rating Scale (HARS; Hamilton, 1959).

Most measures were given at all assessments but a few were omitted at mid-treatment and at six-month follow-up (see Table 1).

Statistical analysis

To identify any differences between the groups after treatment or waiting, one-way analyses of covariance (ANCOVAs) were performed on the mid-treatment, post-treatment, three-, six- and 12-month follow-up data using initial scores as covariates: *t*-tests were used to identify within-group changes across time. For a

few measures at some time points deviations from normality were corrected by the use of logarithmic transformation. In comparisons between the treatments and the waiting list, sample size was 15–16 patients per group. In comparisons between the two treatments, sample size was 23 patients per group as these comparisons also include the 14 (out of 15) patients who continued to meet the full set of trial inclusion criteria at the end of the waiting period who were then randomly allocated to treatment.

RESULTS

Characteristics of patients

Patients' median age was 34 years (quartile range=25–43). Median duration of the current episode of hypochondriasis was four years (quartile range=1–10). Sixty-seven per cent were female and 64% had received some form of previous treatment for emotional problems.

Suitability of treatment and expectation of improvement

Cognitive therapy and behavioural stress management did not differ (all P's > 0.36, t-test) in patients' ratings of the extent to which they thought their treatment was logical, would be successful and would recommend to a friend. (Means (s.d.): cognitive therapy=8.4 (1.4), 7.5 (2.0), 8.4 (1.6); behavioural stress management=7.9 (2.3), 7.0 (2.5), 7.9 (2.5), respectively.)

Comparisons between treatments and the waiting list

To establish whether more improvement in hypochondriasis occurred in the two treatment groups than the waiting list control, one-way ANCOVAs were performed on the mid-treatment/waiting list and post-treatment/waiting list. Duncan's multiple comparison procedure was used to identify the source of any significant effects. (Means and standard deviations for these analyses are available from the authors upon request.) At mid-treatment/waiting list cognitive therapy was superior to the waiting list control on all the hypochondriasis and mood measures. Behavioural stress management was superior to the waiting list control on the mood measures and six out of nine hypochondriasis measures. The three measures that were not significantly different were: time seriously worried about health, avoidance and the belief scale of the cognitions questionnaire. At post-treatment/waiting list cognitive therapy remained superior to the waiting list control on all measures. Behavioural stress management was also superior to the waiting list control on all measures at this point.

Comparisons between the two treatments

Table 2 shows scores at each assessment for the full sample of patients treated with cognitive therapy and behavioural stress management. Fourteen of the patients who were initially allocated to the waiting list still met all the trial inclusion criteria when allocated to treatment after the waiting period. In order to increase statistical power, it had been decided (*a priori*) to include these patients in the analyses comparing the effectiveness of the two treatments.

In order to compare the effectiveness of the treatments, separate analyses were performed on the mid-treatment, post-treatment, and three-, six- and 12-month follow-up data.

At mid-treatment ANCOVAs indicated that cognitive therapy was superior to behavioural stress management on eight out of nine hypochondriasis measures (see Table 2). The two treatments were not significantly different on the general mood measures.

At post-treatment cognitive therapy was superior to behavioural stress management on seven out of ten hypochondriasis measures (see Table 2). Again, the two treatments were not significantly different on the general mood measures.

Follow-up data were unusually complete. Ninety-six per cent of patients who completed treatment provided three-month follow-up data. Ninety-four per cent provided six-month follow-up data and 100% provided 12-month follow-up data. As the follow-up progressed the differences between cognitive therapy and behavioural stress management became less marked. At the three- and six-month follow-ups, cognitive therapy was superior to behavioural stress management on three hypochondriasis measures. At the 12-month follow-up cognitive therapy was superior on only one (out of 10) hypochondriasis measures (disease conviction when anxious).

Maintenance of gains

Two further analyses were conducted to determine whether the improvements associated with treatment were maintained. First, within each treatment t-tests compared patients' pre-treatment scores with their 12-month follow-up scores. For both treatments, on all measures, follow-up scores were significantly (all P's < 0.01) better than pre-treatment scores, indicating that the treatments had produced sustained improvement. Second, post-treatment scores were compared with 12-month follow-up scores. For behavioural stress management there were no significant differences between post-treatment and follow-up. In contrast, on all but two measures (checking and HARS) cognitive therapy patients were significantly worse at follow-up than at post-treatment. Figure 1 illustrates this pattern of results.

DISCUSSION

Effectiveness of cognitive therapy

This study focused on chronic, primary hypochondriasis. The first aim was to investigate whether the promising results obtained with cognitive therapy by one therapist in the Warwick *et al* (1996) study could be replicated with eight new therapists. As in the Warwick *et al* (1996) study, a low drop-out rate (4%) indicated that cognitive therapy is acceptable to patients suffering from hypochondriasis. Comparison with the waiting list control group showed that cognitive therapy was effective across a wide range of measures. The overall improvement observed in the present study was very similar to that observed in the Warwick *et al* study. It therefore appears that the results obtained in the earlier study were not greatly influenced by the characteristics of a particular therapist.

A new feature of the present study was the inclusion of mid-treatment and longer-term follow-up assessments. By mid-treatment, cognitive therapy was superior to the waiting list control on all measures. Inspection of the means indicates that most of the improvements obtained with cognitive therapy had been achieved by mid-treatment. This relatively rapid response suggests that in the future it may be possible to produce a briefer, but similarly effective cognitive treatment.

The six- and 12-month follow-up assessments confirmed that cognitive therapy has enduring effects. One year after the end

Table 2 Outcome measures for waiting list, cognitive therapy and behavioural stress management at each assessment

Measure	Waiting list			Cognitive therapy			Behavioural stress management			Significance of difference between cognitive therapy and behavioural stress management
	n	mean	(s.d.)	*n*	mean	(s.d.)	*n*	mean	(s.d.)	
Hypochondriasis measures										
Time seriously worried about health (0–100)										
Pre	15	58.3	(31.4)	23	55.7	(30.6)	23	51.1	(24.5)	0.58
Mid	15	56.7	(32.2)	21	21.2	(24.1)	22	40.0	(28.0)	<0.01
Post	15	54.7	(34.6)	22	13.0	(16.8)	23	22.7	(21.0)	<0.05
3-month follow-up	–	–	–	21	15.7	(17.1)	23	21.3	(23.0)	0.33
6-month follow-up	–	–	–	20	18.8	(26.6)	22	26.4	(22.6)	0.26
12-month follow-up	–	–	–	21	27.6	(27.9)	23	25.9	(26.7)	0.86
Time free of health worries (0–100)										
Pre	15	17.3	(17.9)	21	18.6	(16.8)	23	23.3	(22.6)	0.44
Mid	15	20.7	(20.5)	21	63.6	(32.7)	23	44.8	(26.8)	<0.05
Post	15	26.7	(26.9)	22	76.3	(26.8)	23	60.0	(28.1)	<0.05
3-month follow-up	–	–	–	21	73.8	(22.4)	23	66.5	(28.1)	0.30
6-month follow-up	–	–	–	20	71.3	(31.3)	22	58.6	(29.3)	0.08
12-month follow-up	–	–	–	22	56.7	(37.7)	23	62.4	(33.7)	0.70
Disease conviction when anxious (0–100)										
Pre	15	80.0	(15.6)	23	79.6	(19.2)	23	72.8	(22.0)	0.27
Mid	15	76.7	(23.8)	23	32.2	(31.5)	23	54.4	(25.0)	<0.01
Post	15	75.3	(24.2)	22	15.5	(21.0)	23	44.4	(26.8)	<0.001
3-month follow-up	–	–	–	21	23.1	(26.1)	23	37.6	(25.1)	<0.05
6-month follow-up	–	–	–	20	21.8	(21.8)	22	38.6	(22.7)	<0.01
12-month follow-up	–	–	–	22	31.9	(28.3)	23	36.5	(26.4)	<0.05
Frequency of illness thoughts (cognitions questionnaire: 1–5)										
Pre	14	2.5	(0.8)	23	2.6	(0.7)	23	2.5	(0.6)	0.53
Mid	15	2.5	(0.9)	22	1.5	(0.6)	23	2.0	(0.6)	<0.01
Post	15	2.4	(0.9)	22	1.4	(0.5)	22	1.8	(0.6)	<0.01
3-month follow-up	–	–	–	21	1.3	(0.4)	22	1.8	(0.5)	<0.05
6-month follow-up	–	–	–	19	1.5	(0.5)	22	1.7	(0.7)	0.20
12-month follow-up	–	–	–	22	1.7	(0.6)	23	1.6	(0.7)	0.76
Belief in illness thoughts (cognitions questionnaire: 0–100)										
Pre	14	41.4	(24.0)	23	38.9	(22.9)	23	31.9	(14.0)	0.18
Mid	15	37.4	(24.5)	23	9.7	(11.2)	23	25.3	(14.2)	<0.001
Post	15	38.6	(25.5)	22	7.1	(11.2)	23	17.4	(12.2)	<0.001
3-month follow-up	–	–	–	21	6.4	(7.9)	22	16.4	(12.5)	<0.01
6-month follow-up	–	–	–	20	10.0	(12.9)	22	17.6	(10.8)	<0.05
12-month follow-up	–	–	–	22	16.9	(15.6)	22	18.1	(16.1)	0.30
Avoidance (0–5)										
Pre	15	3.4	(1.9)	23	3.3	(1.6)	23	3.0	(1.7)	0.58
Mid	15	2.8	(1.6)	23	1.5	(1.8)	23	2.4	(1.4)	<0.05
Post	15	2.7	(1.8)	21	0.5	(0.9)	23	1.5	(1.5)	<0.01
3-month follow-up	–	–	–	21	1.0	(1.3)	23	1.4	(1.5)	0.34
6-month follow-up	–	–	–	20	0.8	(1.4)	22	1.7	(1.6)	<0.05
12-month follow-up	–	–	–	21	1.5	(1.9)	23	1.8	(1.8)	0.30
Checking (0–5)										
Pre	15	2.9	(1.7)	23	2.8	(2.0)	23	2.7	(1.3)	0.53
Mid	15	2.9	(1.4)	23	1.2	(1.5)	23	2.1	(1.3)	<0.01
Post	15	2.4	(1.5)	22	0.8	(1.3)	23	1.6	(1.2)	<0.01

(continued)

Table 2 (*continued*)

Measure	Waiting list			Cognitive therapy			Behavioural stress management			Significance of difference between cognitive therapy and behavioural stress management
	n	mean	(s.d.)	*n*	mean	(s.d.)	*n*	mean	(s.d.)	
3-month follow-up	–	–	–	21	1.2	(1.3)	23	1.5	(1.4)	0.36
6-month follow-up	–	–	–	20	1.3	(1.5)	22	1.7	(1.2)	0.17
12-month follow-up	–	–	–	22	1.4	(1.7)	23	1.3	(1.3)	0.91
Need for reassurance (0–100)										
Pre	15	67.0	(36.1)	22	63.6	(32.0)	23	55.7	(29.2)	0.39
Mid	15	56.0	(31.8)	21	20.7	(26.8)	23	37.0	(25.3)	<0.01
Post	15	56.3	(37.0)	22	12.5	(20.8)	23	22.2	(18.8)	0.05
3-month follow-up	–	–	–	21	14.1	(14.8)	23	19.6	(18.0)	0.35
6-month follow-up	–	–	–	20	13.3	(21.4)	22	25.0	(21.6)	0.07
12-month follow-up	–	–	–	22	25.0	(31.9)	23	23.9	(27.4)	0.91
Distress/disability (patient: 0–8)										
Pre	15	4.5	(2.3)	23	4.7	(2.3)	23	4.8	(1.9)	0.83
Mid	15	4.7	(2.3)	23	2.0	(1.9)	23	2.8	(1.6)	0.12
Post	15	4.4	(2.6)	22	1.6	(1.8)	23	2.0	(1.6)	0.57
3-month follow-up	–	–	–	21	1.6	(1.2)	23	1.8	(1.6)	0.78
6-month follow-up	–	–	–	20	2.0	(1.9)	22	2.1	(2.0)	0.90
12-month follow-up	–	–	–	22	2.7	(2.1)	23	2.3	(2.1)	0.49
Distress/disability (assessor: 0–8)										
Pre	15	4.8	(1.9)	23	4.7	(1.7)	23	4.9	(1.7)	0.73
Mid	–	–	–	–	–	–	–	–	–	–
Post	14	4.6	(1.8)	21	1.3	(1.5)	23	2.0	(1.5)	0.13
3-month follow-up	–	–	–	21	1.7	(1.5)	23	1.9	(1.4)	0.66
6-month follow-up	–	–	–	–	–	–	–	–	–	–
12-month follow-up	–	–	–	22	2.6	(2.5)	20	1.9	(2.2)	0.31
General mood measures										
Beck Anxiety Inventory (0–63)										
Pre	15	25.2	(13.1)	23	28.4	(12.0)	23	25.3	(10.2)	0.35
Mid	15	22.4	(11.7)	23	12.1	(10.4)	23	13.9	(9.0)	0.26
Post	15	24.5	(15.2)	22	10.0	(11.0)	23	9.6	(7.5)	0.71
3-month follow-up	–	–	–	21	11.1	(8.9)	23	8.9	(6.2)	0.48
6-month follow-up	–	–	–	20	12.8	(10.3)	22	11.7	(8.4)	0.98
12-month follow-up	–	–	–	22	16.9	(13.1)	23	11.4	(7.7)	0.18
Hamilton Anxiety Rating Scale (0–56)										
Pre	14	21.9	(8.0)	21	21.5	(10.4)	22	20.6	(6.0)	0.71
Mid	–	–	–	–	–	–	–	–	–	–
Post	13	19.8	(7.6)	20	11.0	(8.4)	22	11.8	(7.2)	0.48
3-month follow-up	–	–	–	19	11.4	(8.5)	23	11.0	(6.1)	0.94
6-month follow-up	–	–	–	–	–	–	–	–	–	–
12-month follow-up	–	–	–	20	14.2	(9.9)	21	10.8	(5.9)	0.16
Beck Depression Inventory (0–63)										
Pre	15	18.8	(9.6)	23	19.1	(11.5)	23	16.7	(8.4)	0.42
Mid	15	20.1	(9.6)	23	11.7	(12.4)	23	10.9	(8.8)	0.62
Post	15	19.1	(13.0)	22	8.4	(9.7)	23	6.4	(5.6)	0.69
3-month follow-up	–	–	–	21	7.6	(8.2)	23	6.1	(6.5)	0.69
6-month follow-up	–	–	–	20	9.7	(8.9)	22	8.5	(7.0)	0.86
12-month follow-up	–	–	–	22	11.4	(9.6)	23	7.1	(6.5)	0.15

Pre, pre-treatment/waiting list; Mid, mid-treatment/waiting list; Post, post-treatment/waiting list. Occasional failure of a patient to complete all questionnaires at an assessment means there are a small number of missing observations on some measures. For reference, the full sample sizes at each time point are: waiting list, $n=15$ at all time points; cognitive therapy, $n=23$ at pre- and mid-, 22 at post-treatment and 3-, 6-, 12-month follow-up; behavioural stress management, $n=23$ at all time points. The treatment samples include patients who were allocated to these treatments after continuing to meet trial acceptance criteria at the end of the waiting list. Significance levels for cognitive therapy *v.* behavioural stress management contrasts are based on one-way ANCOVA with pre-treatment levels as covariates.

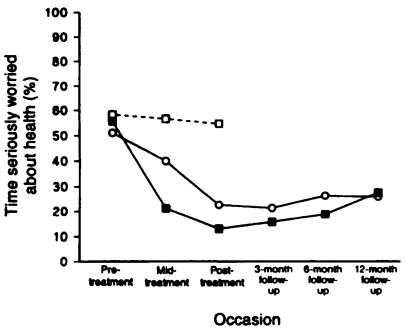

Fig. 1 Time seriously worried about health at pre-treatment/waiting list, mid-treatment/waiting list, post-treatment/waiting list, 3-, 6- and 12-month follow-up. -■-, cognitive therapy; -○-, behavioural stress management; --□--, waiting list.

of treatment patients who had received cognitive therapy remained better than at pre-treatment on all measures. However, some deterioration did occur between the six- and 12-month follow-ups, reinforcing the importance of conducting long-term follow-up.

Cognitive therapy and non-specific therapy factors

The second major aim of the study was to investigate the role of non-specific factors in determining outcome by comparing cognitive therapy with an equally credible, alternative psychosocial treatment which involved equivalent therapist contact but did not attempt directly to challenge patients' specific illness beliefs. The originally planned comparison treatment was problem-solving, but pilot work revealed that it was not acceptable to patients. A considerable amount of further pilot work was required before we succeeded in creating a new treatment which patients with hypochondriasis found credible and were willing to persist with. At mid-treatment and at post-treatment cognitive therapy was superior to behavioural stress management on most measures of hypochondriasis. It therefore appears that the effectiveness of cognitive therapy is not simply due to the non-specific therapy factors which the two treatments shared, such as a credible rationale, repeated assessments, weekly sessions with experienced therapists and homework assignments. Instead it would appear that at least part of the effectiveness of cognitive therapy is due to the procedures that were specific to cognitive therapy. These were a direct focus on illness beliefs and a wide range of cognitive and behavioural procedures that were explicitly used to challenge patients' belief that they had a particular illness. Further research is required to determine which of these elements were particularly important and what is the mechanism of their action.

Effectiveness of behavioural stress management

Although behavioural stress management produced less improvement than cognitive therapy at the mid- and post-treatment assessments, comparisons with the waiting list control indicated that behavioural stress management is also an effective intervention. How can we explain this result? One logical possibility is that the response to behavioural stress management is essentially a placebo-type response. That is, it simply represents the effects of non-specific therapy factors. In the absence of a third treatment group that controlled for the effects of attention and treatment credibility but did not include the behavioural stress management procedures, it is not possible to rule out this hypothesis. However, our earlier experience in trying to use problem-solving with patients with hypochondriasis suggests that behavioural stress management probably has more specific effects. In particular, many of the therapists in the present trial were involved in delivering problem-solving and were unable to produce clinically worthwhile results with that approach.

There are several procedures in behavioural stress management that may have enabled it to produce improvements in hypochondriasis without directly focusing on, or challenging, patients' belief that they had a particular illness or illnesses. First, a clear cut, non-physical illness explanation was provided for patients' symptoms and worries ("it's your idiosyncratic response to stress"). Second, careful historical interviewing and completion of the Hassles Scale persuaded many patients that there were many stresses in their life. Third, a number of the stress management procedures were likely to have reduced somatic complaints, reinforcing the rationale. The most obvious example is the applied relaxation training, which has been shown to reduce somatic complaints in a number of other disorders (Clark, 1988). Indeed, two patients in the behavioural stress management group specifically mentioned this point at the one-year follow-up assessment, stating that the success of applied relaxation in reducing their symptoms convinced them that they did not have a serious physical illness. DeLongis *et al* (1982) found that frequency of daily hassles was strongly related to somatic complaints in a prospective general population study. Given this finding, it seems likely that other stress management procedures that attempted to reduce daily hassles (time management, assertiveness training, problem-solving) may also have reduced somatic symptoms. Fourth, a subgroup of patients were taught stimulus control techniques for reducing worry time. Wells & Matthews' (1994) general model of cognition and emotion would predict that reducing time spent worrying about health would also reduce disease conviction. Finally, the application phase of applied relaxation training involved exposure to situations that evoke anxiety, including illness cues, and, where relevant, it has frequently been shown that exposure has cognitive effects. Taken together, these procedures could be an effective way of enhancing belief in a non-threatening explanation for patients' worries and symptoms (the harmless signs of stress) and reducing disease conviction.

Throughout the follow-up year patients in both treatments remained better than at pre-treatment. However, cognitive therapy was superior to behavioural stress management on fewer measures at the three- and six-month follow-ups than at post-treatment. At the 12-month follow-up the treatments differed on only one hypochondriasis measure. This pattern of follow-up results reflected the fact that, on average, patients treated with behavioural stress management maintained their (more modest) gains, whereas patients treated with cognitive therapy showed some relapse, especially between the six- and 12-month follow-ups. It is possible with relatively small sample sizes that this differential pattern is a function of unmeasured and uncontrolled influences during the follow-up period, such as adverse life events, out-of-protocol treatment and personal experiences with illness. However, in the absence of such data, one must assume that certain aspects of behavioural stress management are particularly helpful for maintenance of gains. Compared to cognitive therapy, behavioural stress management has a greater emphasis on general emotional problems and contains many more practical procedures that patients are encouraged to

continue using during the follow-up period. It is possible that the long-term effectiveness of cognitive therapy may be enhanced by incorporating some of these features.

Limitation

A limitation of the study is lack of measures of health service utilisation. One would assume that the improvements in time spent worrying about health, in disease conviction, distress, checking and other aspects of hypochondriasis produced by psychological treatment would be accompanied by reductions in medical consultations by people who previously over-consulted, but this remains to be demonstrated.

CLINICAL IMPLICATIONS

- Cognitive therapy is a specific treatment for hypochondriasis.
- Behavioural stress management is also effective.
- Both treatments produce sustained improvement.

LIMITATIONS

- The study was restricted to patients willing to accept referral to a specialist psychological treatment unit.
- Utilisation of other health care services was not assessed.
- Further research is required to determine whether behavioural stress management is a specific treatment and to identify the effective ingredients in each treatment more clearly.

ACKNOWLEDGEMENTS

This research was funded by grants from the Medical Research Council of the United Kingdom and the Wellcome Trust. We thank Hester Barrington Ward, Sarah Durbin, Carolyn Fordham-Walker and Freda McManus for their assistance, and Anke Ehlers for helpful criticism of an earlier manuscript.

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(First accepted 26 January 1998, final revision 15 June 1998, accepted 15 June 1998)