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Breathlessness and psychiatric morbidity in chronic bronchitis and emphysema: a study of psychotherapeutic management

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SYNOPSIS This paper describes a study of the outcome of psychotherapy with patients disabled by chronic obstructive airways disease giving rise to dyspnoea. Forty-three men and 22 women with severe COAD were randomly allocated for 8 weeks to one of three types of psychotherapy or to an untreated control group, and were followed up six months later. The group treated by a medical nurse without training in psychotherapy experienced sustained relief of dyspnoea but tended to undergo less psychodynamic change; psychiatric symptoms were reduced in those receiving supportive, but not analytical, psychotherapy. The psychosomatic mechanisms involved and the implications for medical and nursing practice and for liaison psychotherapy are discussed.

INTRODUCTION

Dyspnoea is a common, distressing and frequently untreated symptom (Hinton, 1967). Its mechanisms are poorly understood (Comroe, 1966; Campbell & Guz, 1981) but there is extensive evidence that psychological factors are contributory even in the presence of severe lung disease (Rosser & Guz, 1981). Dyspnoea is one of the most disabling symptoms of chronic obstructive airways disease (COAD), which itself is the commonest cause of absence from work in the UK (Office of Health Economics, 1977). The prevalence of psychiatric illness in this disorder may be as high as 50% (Rutter, 1977). Low mixed venous carbon dioxide relative to the degree of obstruction may be more common in more extrovert bronchitics (Clark & Cochrane, 1970), and personality traits and mood may be associated with the magnitude of the ventilatory response to inhaled carbon dioxide (Saunders *et al.* 1972; Shershow *et al.* 1976; Arkinstall *et al.* 1974).

Recent work suggests that dyspnoea in COAD may be relieved by anxiolytic drugs such as benzodiazepines, phenothiazines, alcohol or opiates (Mitchell-Heggs *et al.* 1980; Stark *et al.* 1981; Woodcock *et al.* 1981*a*, *b*; *Lancet*, 1980). Large doses of anxiolytic drugs are hazardous. Their effect on dyspnoea might occur indirectly through changes in mood, rather than directly through effects on the lungs or through neurotransmitters mediating central control of breathing (Eldridge & Milhorn, 1981). If so, the question arises as to whether a similar effect could be obtained, possibly with other benefits and fewer risks, by means of psychotherapy.

Psychotherapy formed part of a successful programme of rehabilitation in COAD (Agle *et al.* 1973), and benefit has been reported in a number of other physical illnesses (Kellner, 1975; Malan, 1973). In recent years there has been growing interest in brief interpretive psychotherapy (Mann, 1973; Sifneos, 1972; Malan, 1976*a*, *b*; Ursano & Dressler, 1974) which would be feasible for use in psychiatric liaison services, and brief therapy is now being

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used in the elderly (Hildebrand, 1982). The efficacy of brief therapy appears to depend on working on a clearly defined focal conflict and on the use of specific psychoanalytical techniques such as transference interpretations, and links between feelings in therapy and feelings in early life, the so-called transference–childhood link (Malan, 1963). Data on appropriate techniques for the physically ill and the elderly are limited. In eczema, for example, some patients may benefit from an analytical approach but others may deteriorate with this and need a more supportive therapy (Brown & Bettley, 1971).

HYPOTHESES

The principal hypothesis was that a combination of psychotherapy and medical treatment is more effective than medical treatment alone in relieving the dyspnoea of patients with COAD. A number of subsidiary hypotheses were tested about the effect of different types of psychotherapy on dyspnoea, psychiatric symptoms, and psychodynamic change.

METHOD

1. Sample

All patients who were attending clinics in the Department of Medicine with dyspnoea due to COAD were screened. Exclusion criteria included: the presence of another severe illness or a cause of dyspnoea other than COAD, living too far away to take part in the study, inability to understand English, dementia detected clinically or by screening questionnaire (Hoch & Zubin, 1964), and other conditions which were a contra-indication to psychotherapy. More than 70% of potential subjects were excluded, but losses by refusal to participate or later dropping out were minimal (Table 1).

2. Design

Sixty-five patients were randomly allocated to slots specified by the design (Table 2). This ensured that equal numbers of men and women received 4 different treatments.

3. Treatment

With the agreement of their general practitioners, all patients received medical treatment for both COAD and some other intercurrent conditions

Table 1. *Participation in study and use of in-patient services*

			No.	%
1. *Sample*				
Number of case-notes of patients diagnosed as COAD			318	100
Total excluded				
From records	141			
At interview	96		237	75
Refusers			2	1
Total included				
Pilot studies	14			
Definitive study	65		79	24
Total			318	100
2. *Attendance: missed therapy and assessment sessions*				
Analytic			4	2
Supportive*			6	3
Nurse			3	2
Control			4	2
Total			17	2†
3. *Hospital admissions*	Medical	Psychiatric	Total	
Control	13	0	13	77
Nurse	4	1	5	31
Supportive	5	0	5	31
Analytic	5	0	5	31
Total	27	1	28	43‡

Criteria for exclusion	%
Medical criteria (78%)	
Mis-diagnosed as COAD (mainly intrinsic asthma)	41
Other cause of dyspnoea	6
COAD too severe	1
COAD too mild	10
Other severe illness	17
Died before interview	3
Psychiatric criteria (8%)	
Severe alcoholism	4
Dementia	4
Social criteria (14%)	
Language	1
Home too far away	8
Insight into design, i.e. relative on staff or in trial	1
Untraceable	4
Total	100

* Two patients died before follow-up assessment.
† Of all sessions.
‡ Of all patients.

Table 2. *Experimental design*

	Sex		
Therapy	Male	Female	Total
Control	12	5	17
Nurse	11	5	16
Supportive	10	6	16
Analytic	10	6	16
Total	43	22	65

from the physician (A. G.) while they participated in the study.

Psychotherapy consisted of eight 45-minute sessions which were tape-recorded and transcribed. All patients were encouraged to discuss any topic and to express their feelings. Treatment groups differed as follows:

The analytic group received treatment from one of two experienced psychoanalysts (J. D., B. M.) who were instructed to make free use of transference interpretations.

The supportive group received treatment from the same two psychoanalysts who were instructed to withhold transference interpretations, but to make free use of other techniques for engaging the patient in a dynamic interaction. This group controlled for the effect of specific psychoanalytical intervention.

The nurse group received treatment from an experienced medical nurse (A. H.) without psychotherapeutic training. She tended to concentrate more on practical realities in the patient's life. She reported each session to a nurse familiar with psychotherapy (D. M.) and to a psychiatrist (R. R.), but she received no instruction in theory or technique. This group controlled for the effect of psychoanalytical training and experience.

The control group received no psychotherapy but had weekly laboratory tests.

All therapies were focal rather than extensive. After the first session therapists defined a focal conflict. Resolution of this conflict was the principal aim of the therapy and changes in behaviour were defined to serve as criteria by which a 'blind' assessor could rate the degree of success. Focal conflicts frequently referred to the patients' inability to cope with the loss of physical health, to emotional withdrawal and to the fear of death. Extracts from typical therapists' assessments including outcome criteria are given in Appendix 1. All sessions in the first batch were content-analysed for statements indicative of particular psychoanalytical or nursing interventions.

4. Measures

Full lung function tests, estimations of blood gases and ventilatory sensitivity to CO_2 (Read, 1967) were performed before and after 8 weeks of observation and therapy, and lung function tests and gases were repeated 6 months later; our expectation was that lung function would remain stable or tend to deteriorate a little. Blood gases were estimated by indirect, non-invasive, techniques, i.e. mixed venous CO_2 (p_{vCO_2}) (Al-Dulymi & Hainsworth, 1977; McEvoy *et al.* 1974) and percentage saturation of haemoglobin (Chaudhary & Burki, 1978).

Patients' and therapists' expectations of overall improvement were recorded before therapy. The change in each of several variables was measured by a set of tests of varying degrees of objectivity and sensitivity. Measures which are not generally known are reproduced in Appendix 2. Breathlessness was measured by an ordinal rating of self-reported incapacity (Fletcher *et al.* 1959) and by a visual analogue scale of dyspnoea (VAD) (Aitken *et al.* 1970). Exercise tolerance was measured by bicycle test (first 22 patients) or a standard 12-minute walk (remaining 43 patients) (McGavin *et al.* 1978). Measures of psychiatric symptoms included the General Health Questionnaire (GHQ), a 30-item questionnaire which identifies a probable psychiatric case (a score of more than 4 on the GHQ) and also yields a score of severity (Goldberg, 1972), and visual analogue ratings of depression and anxiety (VAMD and VAMA) (Aitken, 1969). Psychodynamic status was measured by the Health Sickness Rating Scale (HSRS), a 100-point global rating of psychodynamic state (Luborsky & Bachrach, 1974), and psychodynamic change was measured by a rating of resolution of focal conflict on a 4-point ordinal scale (Malan, 1963). As far as possible, measurements were made blind and by more than one observer. The properties of the measures have been thoroughly documented by other workers and we confirmed their reliability before starting the study. All patients completed a specially designed reliable questionnaire intended to detect disproportionate dyspnoea (Burns & Howell, 1969) and an Eysenck Personality Questionnaire (EPQ) (Eysenck & Eysenck, 1964). Intelligence was assessed after termination of therapy by performance and verbal tests of the Weschler Adult Intelligence Scale (WAIS).

5. Procedure

Subjects were asked for their consent as early as possible to minimize evaluation anxiety due to lack of preparation. Subjects were seen in batches of 10–13, and each batch was studied for 8 months, including 2 months' therapy for all but the control group, an assessment a week before

and a week after therapy (start and termination assessments), and at 6-month follow-up. Each batch contained a balanced allocation of subjects between all 4 groups, to control for seasonal and other effects on breathing. Allocation was carried out by labelling all slots for male and female patients for each batch, sealing the labels and assigning them randomly to the subjects who were drawn from the waiting list for each batch. The labels were subsequently unsealed and each subject was given a card containing a series of appointments covering the next 10 weeks. The entries included a floor and room number and the name of the person who would see the patient. Titles were omitted, so that no distinction was made between the medical and the nurse therapists and the laboratory technicians. This was done as part of a strategy to ensure that patients started the study with similar expectations. Patients were seen at the same time and on the same day every week. Therapy occurred at 9.00 a.m. or 9.50 a.m., and was followed by lung function tests. Flow volume curve and blood gases were studied weekly during therapy.

The 6-month follow-up assessment lasted for $3\frac{1}{2}$ hours. To avoid a 'single session' effect, in which the process of measuring the status of the patient can itself change what is being measured, the control group had received no previous psychodynamic assessment. At this stage, data were collected on each subject's previous and recent psychiatric and psychotherapeutic treatment, recent life events, changes in smoking behaviour, present social adjustment, present psychodynamic status and psychodynamic change. The psychodynamic interview was in two parts: a general and completely blind assessment, leading to the HSRS rating, followed by a more specific, partially blind, assessment in the light of the outcome criteria for the rating of focal conflict resolution. These criteria were contained in a sealed envelope, opened in the second half of the interview, at which point the assessor (W.K.) remained blind to the allocation of subjects between therapy groups but became aware of the composition of the control group for which no further ratings were required.

6. Statistical analysis

For the small proportion of data which were normally distributed cardinal measurements, notably certain biological parameters, the appropriate parametric statistical tests were used. Non-parametric tests were applied to ordinal data such as the psychiatric and psychodynamic measurements and the ratings of symptoms, to nominal data and to non-normally distributed data. Many of the data were unexpectedly skewed, often to a marked degree, so that the choice of test was of crucial importance. Where the choice was open to dispute, the sensitivity of the results to the choice of test was examined. The mean, median or mode was selected as appropriate, according to accepted criteria, as measures of central tendency (Siegel, 1956).

RESULTS

1. Characteristics of the sample

Mean age was 66 (S.D. = 9). The mean FEV_1 was 0·9 (S.D. = 0·4). The median Fletcher grading was 3·2, range 2–5. Mean $p_{v\,CO_2}$ was 57 mmHg (S.D. = 8), and the mean percentage saturation of haemoglobin was 92% (S.D. = 5). Nineteen of the patients (30%) had a normal $p_{v\,CO_2}$ (< 53 mmHg) and normal oxygen saturation (95%). According to the medical notes, the mean number of years for which subjects had smoked was 41 (S.D. = 15), and the mean daily consumption of cigarettes was 32 (S.D. = 26). Patients tended, partly as a consequence of their disability, to be socially isolated: 20 patients were either single, separated or widowed; 19 were without a telephone. Sixteen patients had previous psychiatric treatment and 8 were on cortico-steroid drugs, which might affect mood. The majority (54) were taking β-adrenergic agonists to obtain the maximum possible bronchodilation. The GHQ identified 39 patients (60%) as probable psychiatric cases. The median score on the GHQ was 6·3, range 0–28. Thirty-six (55%) of the patients reported that they were still smoking. The distribution of social class was the same as in the population as a whole. The mean verbal IQ was 111 (S.D. = 14), and the performance IQ was also 111 (S.D. = 17). The distribution of IQs was as expected for a random sample of the population. The EPQ results did not differ from population norms for this age-group. The educational level was low: the mean age at which full-time education ended was 15 (S.D. = 2).

2. Representativeness of sample

The sample did not differ significantly from the excluded patients in terms of age (mean 64) or sex ratio (68% males). As a consequence of the exclusion criteria, the excluded patients tended to have milder COAD as judged by chronicity, breathlessness and lung function tests, and to have more other conditions.

3. Randomization

The allocation of patients to groups appeared to have occurred randomly for all the above characteristics, including the results of lung function tests, smoking history and psychiatric morbidity, but the nurse's group had more patients of social class 5 (chi square, $P < 0{\cdot}05$). There was also no bias in the initial expectations of the patients, in the amount of help they received between therapy and follow-up (which was mainly from a general practitioner), or in the number of life events which they reported in this interval (chi square test, not significant). All therapy groups tended to have lower scores than the control group on the visual analogue scales of anxiety and depression, but these differences only reached significance when the nurse's subjects were compared with the controls for depression (Wilcoxon signed ranks test, $P < 0{\cdot}05$). The nurse's subjects also had lower scores than the controls on the visual analogue scale of dyspnoea (Wilcoxon, $P < 0{\cdot}05$). There were no other significant differences in measures of psychiatric state or dyspnoea. Fewer of the nurse's patients were taking β-adrenergic drugs (chi square, $P < 0{\cdot}05$).

4. Use of hospital services

Twenty-seven subjects (42%) had to be admitted for medical treatment for respiratory infections. These were disproportionately represented in the control group from which 13 patients (77%) were admitted (chi square, $P < 0{\cdot}01$). No significant changes occurred in maintenance medication. One subject with a history of a psychiatric illness about 30 years previously was admitted in the course of nurse therapy for treatment for depression. He made several serious suicide attempts but then regained his previous equilibrium.

5. Correlations between measures

Measures of change in dyspnoea correlated with one another and with measures of the state of the lungs as expected.

Significant positive correlations were also found between measures of psychiatric and psychodynamic status and change. However, although the blind ratings of HSRS and focal conflict resolution were correlated with one another (Kendall's tau = 0·37, $P < 0{\cdot}01$), they were not correlated with the change in the GHQ for the whole sample or for any group except the nurse's (chi square, $P < 0{\cdot}05$ at termination, $P < 0{\cdot}01$ at follow-up); there was a negative correlation for the analytic group (chi square, $P < 0{\cdot}05$). Global ratings of change by the blind assessor correlated with changes in the GHQ (Kendall's tau, $P < 0{\cdot}05$).

Mixed venous carbon dioxide did not correlate significantly with scores on the EPQ scales, but carbon dioxide sensitivity at the start showed a weak correlation with E scores (rho = 0·25, $P < 0{\cdot}05$) which was lost at termination; there was no correlation with scores on the N, P and L scales. Measures of disproportionately severe breathlessness correlated with measures of breathlessness itself, with scores on the N scale of the EPQ and with the GHQ score.

6. Changes in measures

Changes were examined both within and between groups.

Changes in lung function

As shown in Table 3, vital capacity haemoglobin saturation and $p_{v\,CO_2}$ decreased from start to follow-up in the sample as a whole (t-test, $P < 0{\cdot}01$). In the four groups small but statistically significant deteriorations occurred as follows (all t-tests): vital capacity, haemoglobin saturation and $p_{v\,CO_2}$ in the supportive group; haemoglobin saturation in the nurse's group; forced expiratory volume in 1 s (FEV_1) in the analytic group; and vital capacity in the control group. The $p_{v\,CO_2}$ in the analytic group improved. The differences between the mean changes for the 4 groups were significant only for haemoglobin saturation (analysis of variance, $P < 0{\cdot}05$).

Table 3. *Changes in lung function and blood gases*

Group	Variable	Mean at start	S.D.	Mean at follow-up	S.D.	Significance of change (*t*-test)
Whole sample	Vital	2·6	0·8	2·4	0·9	0·01
Analytic	capacity	2·5	0·8	2·6	1·0	NS
Control		2·5	0·8	2·3	0·8	0·01
Supportive		2·6	0·8	2·4	0·8	0·05
Nurse		2·6	0·9	2·3	1·2	NS
Whole sample	FEV_1	0·86	0·41	0·83	0·41	NS
Analytic		0·88	0·43	0·80	0·35	0·05
Control		0·83	0·38	0·81	0·22	NS
Supportive		0·83	0·38	0·92	0·47	NS
Nurse		0·85	0·47	0·81	0·51	NS
Whole sample	Haemoglobin	92·6	3·4	91·5	8·0	0·01
Analytic	saturation	92·6	4·5	94·1	2·1	NS
Control		92·4	2·5	93·1	3·0	NS
Supportive		91·7	3·8	88·9	6·0	0·01
Nurse		93·1	2·8	91·4	4·9	0·05
Whole sample	P_{tCO_2}	55·7	9·7	54·5	9·2	NS
Analytic		57·4	10·5	52·5	5·9	NS
Control		57·3	10·1	55·7	10·1	NS
Supportive		55·0	10·3	55·8	13·0	NS
Nurse		53·2	7·3	56·3	10·6	NS

Table 4. *Changes in smoking habits*

Smoking behaviour	Control*		Nurse		Supportive		Analytic		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Stopped before project	8	50·0	6	37·5	9	56·0	6	37·5	29	45·0
Stopped during project	0	0	0	0	0	0	3	19·5	3	4·5
Stopped but started again	0	0	2	12·5	0	0	1	6·0	3	4·5
Continued	7	44·0	6	37·5	7	44·0	5	31·0	25	39·0
Increased	1	6·0	2	0	0	0	1	6·0	4	6·0
Total	16	100·0	16	100·0	16	100·0	16	100·0	64	100·0

Differences between groups are not significant (chi square test).
* The data for one subject are missing.

Changes in smoking habits

As shown in Table 4, increases in smoking during the project were reported by some individuals in all except the supportive group. Some patients in both the analytic and nurse's groups stopped smoking, but only three, all in the analytic group, persisted in giving up for 6 months after therapy. These differences in groups were not significant overall, but significantly more patients in the analytic than in the other 3 groups stopped smoking (chi square test, $P < 0·02$). More of both the nurse's and the analytic patients reported some kind of change in smoking habits (chi square, $P < 0·01$). The supportive group differed significantly from the others in showing no change in smoking habits (chi square, $P < 0·05$).

Changes in dyspnoea

The results are shown in Table 5.

(i) *Fletcher grading.* The only group to show a significant improvement in Fletcher grading was the nurse's, in which the median fell from start to termination and continued to fall at follow-up, changes which were statistically significant at each stage (Wilcoxon, $P < 0·05$). The Fletcher grading of the nurse's group was

Table 5. *Changes in dyspnoea and exercise tolerance*

Group	Variable	Mean or median at start (I)	Mean or median at termination (II)	Significance of change I (start to termination)	Mean or median at follow-up (III)	Significance of change II (start to follow-up)
Whole sample	Visual analogue	52	43	NS†	47	NS
Control	scale of	62	50	NS†	56	NS
Analytic	dyspnoea	52	43	NS†	47	NS
Supportive		58	63	NS†	65	NS
Nurse		38	46	NS†	49	NS
Whole sample	Fletcher grading	3·2	3·1	NS†	3·1	0·1
Control		3·2	3·3	NS†	3·2	NS
Analytic		3·0	3·1	NS†	3·0	NS
Supportive		3·4	3·4	NS†	4·0	NS
Nurse		3·2	2·9	0·05†	2·9	0·02
Whole group	Maximum load on	40	40	NS†	40	NS
Control	bicycle test	40	30	NS†	30	NS
Analytic		60	50	NS†	47	0·1
Supportive		10	30	0·05‡	40	NS
Nurse		30	17	NS†	30	NS
Whole group	Ventilation at	23·9	20·7	0·002*	18·3	0·04
Control	maximum load	24·2	19·6	0·08*	16·8	NS
Analytic		24·7	21·3	0·05*	21·9	0·04
Supportive		20·2	21·7	0·1*	16·7	NS
Nurse		22·2	19·4	0·04*	17·5	NS
Whole group	Walk distance	539	526	NS†	583	NS
Control		402	424	0·05†	569	NS
Analytic		540	516	NS†	663	NS
Supportive		402	368	NS†	399	NS
Nurse		589	671	NS†	657	NS

* *t*-test.
† Wilcoxon signed-ranks test.
‡ Fisher's exact probability test (performed for small sample).

somewhat lower than that of the other 3 groups at follow-up (Kruskall–Wallis, $P < 0{\cdot}06$), and significantly lower than that of the supportive group (Kruskall–Wallis, $P < 0{\cdot}01$). However, there was a slight tendency for Fletcher grading to drop in the other 3 groups and thus the difference between the change in the nurse's group and in the other 3 groups did not reach statistical significance on the Kruskall–Wallis analysis of variance by ranks. The sample as a whole showed a significant improvement at termination (Wilcoxon, $P < 0{\cdot}05$) but not at follow-up.

(ii) *Visual analogue scale of dyspnoea.* The variance in the results using this measure was extremely high. No significant differences in changes in the medians were found.

Changes in exercise tolerance

Differences are shown in Table 5. In all except the supportive group there was a trend towards an improvement in the distance walked, but the variance was high. This result reached statistical significance only for the control group from start to termination (Wilcoxon, $P < 0{\cdot}05$). The difference between this change and that observed in the other 3 groups was significant only for the comparison with the supportive group (Kruskall–Wallis, $P < 0{\cdot}05$). There were no significant changes, or even consistent trends, in the maximum load moved by the subsample of 22 who performed the bicycle test. The data for the sample of 22 were normally distributed at the start, but showed a marked positive skew at termination and follow-up, owing to an increase in the load moved by some individuals, mainly in the supportive group. Only 3 of the 5 patients in this subsample could perform the bicycle test, but all 3 moved a greater load at termination than at the start; furthermore, they stopped the test at the start because of dyspnoea, but at termination the reason for stopping was fatigue.

Table 6. *Changes in psychiatric symptoms*

Group	Variable	Median at start	Median at termination	Significance* of change I (start to termination)	Median at follow-up	Significance of change II (start to follow-up)
Whole sample	GHQ	6·3	2·4	0·01	3·4	0·05
Control		7·7	3·0	0·02	4·0	NS
Analytic		4·5	2·5	NS	7·5	0·09
Supportive		5·5	1·5	0·02	2·5	0·01
Nurse		5·2	2·5	NS	3·5	NS
Whole group	VAMD	9	16	NS	11	NS
Control		20	22	NS	10	0·09
Analytic		7	29	NS	10	NS
Supportive		8	11	NS	17	NS
Nurse		7	8	0·02	12	0·04
Whole group	VAMA	16	20	NS	16	NS
Control		56	20	0·01	12	0·08
Analytic		20	17	NS	23	NS
Supportive		10	23	0·05	19	NS
Nurse		14	17	NS	13	NS

* Mann–Whitney *U* test.

Significantly fewer of the patients in other groups improved on this test at termination (Fisher's exact probability test, $P < 0{\cdot}05$). The increase in the load moved by the supportive group differed from the change for the control group (Kruskall–Wallis, $P < 0{\cdot}057$). Ventilation at maximum load dropped significantly in the sample as a whole, and in the analytic and nurse's groups. The only significant difference between the changes lay between the analytic and supportive groups (Kruskall–Wallis, $P < 0{\cdot}05$). Data for improvement or deterioration on either the bicycle test (load moved) or walk test (distance walked) were combined to yield the total numbers of patients in each group whose exercise tolerance changed. Significantly fewer of the control patients (23%) showed deterioration at termination compared with therapy patients (47%) (chi square, $P < 0{\cdot}02$), but the difference did not persist at follow-up.

Changes in psychiatric morbidity

The results for psychiatric morbidity are shown in Table 6. The whole sample tended to improve psychiatrically as measured by the GHQ. The proportion of probable psychiatric cases fell from 60% to 36% at termination and 46% at follow-up. The median GHQ score fell progressively. The control group showed a transient improvement in GHQ score at termination (Mann–Whitney *U*, $P < 0{\cdot}02$), but this was not apparent at follow-up. The analytic group and the nurse's group showed no significant change in GHQ score. By contrast, the supportive group showed a striking reduction in the GHQ score at termination ($P < 0{\cdot}01$), which was even more marked at follow-up. Despite the transient improvement noted in the control group, the *change* in GHQ score in the supportive group was shown to be significantly greater than in the other groups (Kruskall–Wallis, $P < 0{\cdot}01$). Anxiety, as measured by the median VAMA score, tended to diminish for the control group (Mann–Whitney *U*, $P < 0{\cdot}08$) and increased for the supportive group (Mann–Whitney *U*, $P < 0{\cdot}05$). This increase for the supportive group was significant relative to the change in the control group (Kruskall–Wallis, $P < 0{\cdot}05$). Subjects in the 3 therapy groups tended to rate themselves as more depressed at termination, but this trend was statistically significant only in the nurse's group (Mann–Whitney *U*, $P < 0{\cdot}05$). The control group tended to have a lower score on the VAMD at follow-up (Mann–Whitney *U*, $P = 0{\cdot}09$). The differences between the changes in VAMD in the nurse and control groups were highly significant (Kruskall–Wallis, $P < 0{\cdot}01$ at termination and follow-up). There was a similar trend when both the supportive and analytic groups were compared with the control group ($P = 0{\cdot}07$ to follow-up).

Table 7. *Focal conflict resolution*

	Total improvement (score > 0)				Psychodynamic change (score > 1)			
	Improved		Not improved		Improved		Not improved	
	No.	%	No.	%	No.	%	No.	%
1. 'Blind' ratings								
Nurse's patients	5	31	11	69	4	25	12	75
Psychoanalysts' patients	14	47	16	53	11	37	19	63
	NS*				NS*			
2. 'Open' ratings								
Nurse's patients	6	37·5	10	62·5	3	19	13	81
Psychoanalysts' patients	18	60	12	40	14	46	16	53
	NS*				$P < 0·05$*			

* Fisher's exact probability test.

Psychodynamic change

(i) *The HSRS.* This revealed no significant differences between the groups at follow-up.

(ii) *Focal conflict resolution.* The results are shown in Table 7. They have been presented in two ways. A score of one or more indicates either symptomatic or dynamic change, whereas a score of two or more indicates psychodynamic change (Malan, 1963). The blind assessor's guessed allocation of patients differed significantly from the actual allocation (chi square, $P < 0·01$) and thus blindness appears to have been preserved. On inspection of the table, focal conflict resolution appears to occur more frequently in patients treated by the psychotherapists than by the nurse, but the numbers are insufficient to achieve statistical significance with this relatively insensitive measure. When psychodynamic change alone is considered, analytic therapy has a marginal advantage; when symptomatic change is included, supportive therapy appears slightly superior. However, a much larger sample would be needed to make this subtle distinction between the effects of analytic and supportive therapy, and it is therefore of theoretical rather than practical importance. Open ratings by the therapists, based on reports of the psychodynamic interview with the blind assessor, did show significantly more dynamic change in the psychotherapists' patients (Fisher's exact probability, $P < 0·05$).

Global change

There were no significant differences between therapy groups in the ratings of global change at follow-up by the blind assessor. There were no differences in the subjects' ratings of global change, but female subjects rated analytic therapy as the most unpleasant (chi square, $P < 0·05$).

7. Predictors of change

Improvement in psychiatric morbidity was not predicted by social class, sex or the rating of disproportionate dyspnoea. However, there was a trend (chi square, $P < 0·1$) for improvement to occur least in those who lived alone (among whom women predominated); this trend reached significance for the period of consolidation between the termination of therapy and the follow-up assessment ($P < 0·05$). IQ was not predictive in the average range, but patients with an IQ below 90 did not improve (chi square, $P < 0·05$). On some predictive criteria the psychoanalysts performed worse than chance. An increase in depression (which could be argued to be a necessary, but painful stage on the way to improvement) was associated with therapists' expectation of helping the patient by analytic therapy (chi square, $P < 0·05$ at termination, $P < 0·03$ at follow-up). A change in the GHQ score correlated negatively with therapists' expectations for the supportive group (tau = 0·48, $P < 0·05$). By contrast, the nurse's expectations were positively correlated with a change in the GHQ score at termination

(tau = 0·43, $P < 0·05$) and at follow-up (tau = 0·41, $P < 0·05$), and her ratings of motivation also appeared to predict a change in the GHQ score at termination (tau = 0·62, $P < 0·01$). The patient's expectations as a whole were disappointed and they tended to correlate negatively with a change in the GHQ score (tau = −0·02, $P < 0·08$). This negative correlation was significant for the supportive group (tau = −0·40, $P < 0·05$), but became *positive* for the control group (tau = 0·50, $P < 0·01$). The nurse's patients' expectations correlated with improvements in the distance walked at termination (tau = 0·48, $P < 0·05$).

8. Content analysis

Full details will be published separately, but the principal findings are summarized in Table 8. As expected, classical transference interpretations occurred significantly more frequently in analytic therapy. However, the supportive therapy contained as many indirect references to the transference as the analytic therapy, more statements about death and many more of both interactions than the nurse therapy. The nurse therapy contained more encouraging remarks, more mixed statements which contained both encouraging and critical notions, and more discussion of appropriate use of medical treatment.

Table 8. *Content analysis: significant differences between first* 6 *therapies* (48 *sessions*) ($P < 0·05$)

1. Interpretations	(nurse least)
2. Transference interpretations	(analytic most)
3. Encouragement	(nurse most)
4. Number of statements	(nurse most)
5. Statements about death and dying	(supportive most)
6. Discussion about getting or using medical treatment	(nurse most)

DISCUSSION

This discussion falls into three sections: first, a critical assessment of the methods and data; secondly, an elaboration of matters of theoretical interest, especially the psychosomatic mechanisms underlying the observed changes; and, finally, conclusions about the practical implications of the results.

The method had important limitations. The experiment was artificial in that patients who were psychologically both unselected and unprepared and who were not seeking psychological treatment or complaining primarily of psychological difficulties were treated by means of psychotherapy. Therefore, it could be argued that our results have little relevance to practice; however, on the other hand, if there are positive findings, perhaps conventional practice should be reviewed. The failure of the psychoanalysts to predict outcome suggests that, if their clinical judgements *had* been used in selection, patients who were found to benefit would have been excluded. Because we did not apply traditional selection criteria, we feared that patients might not engage and that there would be a large number of refusers and a high proportion of drop-outs. These expectations were not fulfilled. The therapists' experience, the patients' self-assessment, a study of the transcripts of the tapes, and the ratings of psychodynamic change, all showed that these patients were deeply engaged in therapeutic work. Furthermore, our study of predictors showed that notions of socio-economic class and educational level were irrelevant to psychodynamic change. Only 2 patients refused to take part; there were no drop-outs; and only 3% of sessions were missed, mainly due to severe respiratory infections. This is rare and possibly unique in psychotherapy research, in which drop-out rates in excess of 60% in the first 6 sessions are common (Rosenthal & Frank, 1958; Brown & Kosterlitz, 1964; Errera *et al.* 1967). Factors contributing to the low drop-out rate may have included the patients' feelings that they depended on the care of the hospital for their physical survival; the obvious coordination between the medical and psychological investigations and treatment; the explicit assumption by all members of the research team that the commitment to participate was binding; the provision of transport for patients for whom breathlessness and the length of the journey would have combined to prevent a prompt arrival in the morning rush hour; and the relative brevity of the contract.

It will properly be argued by psychoanalysts that the outcome of 8 sessions is of little relevance to the outcome of psychoanalysis in which the psychoanalyst exercises his full skills. We can only agree, but feel that it is necessary for research workers to devote some of their attention to very brief treatment which could be made widely available.

The follow-up period of 6 months may also seem short, particularly for the measurement of resolution of focal conflict, which depends on observations that the patient can cope with previously conflictual situations, which may not arise in the first 6 months after therapy. Nonetheless, it is not clear what is the ideal assessment interval following brief therapy, and in the elderly and physically ill the high mortality rate precludes a longer period of assessment. Two patients, both in the supportive group, died in the 6 months before follow-up. A 2-year follow-up of patients by their therapists is in progress, but losses by death or severe debilitation will restrict the conclusions which can be drawn from this. Compared with many other projects, the follow-up interval of 6 months is relatively generous (Smith & Glass, 1977), but we would not wish to use this as a defence. The reason for preferring a longer assessment period is tied up both with the methodology of Malan's approach, and the notion that psychodynamic change must be sustained in order to be genuine. However, despite the profound theoretical importance of the concept of psychodynamic change, recent evidence suggests that it may be highly correlated with symptomatic change, and that symptomatic measures of outcome which can be measured at shorter follow-up intervals should not be dismissed in psychotherapy research (Mintz, 1981).

It is widely accepted that multiple criteria are necessary to evaluate psychotherapy (Epstein & Vlok, 1981), but procedures for aggregating results on multiple measures, which inevitably involve a process of valuation, have barely been investigated in the field of psychotherapy. We return to this problem later (p. 106).

Many of the measures used, in retrospect, appear defective. Measures of breathlessness are particularly inadequate. Fletcher grading is relatively insensitive, and the visual analogue scale yields such variable results that it is difficult to draw conclusions about average figures for a relatively small sample. Exercise tests on the bicycle proved too disruptive for psychotherapy investigations and some patients were too ill to take part in them. The standard walk test, substituted for the bicycle test, also produced very variable results. Consequently, our results for breathlessness are difficult to interpret.

Our principal measure of psychiatric morbidity, the GHQ, is well-tested and sensitive, but it might be even more useful for incorporation into aggregate measures and cost–benefit studies if it could be placed on a cardinal rather than an ordinal scale. Focal conflict resolution is an insensitive measure, especially as patients are virtually never assigned a score of 4, so that its range is reduced even further. The need for a detailed initial psychodynamic assessment precludes its use with untreated control subjects in studies of brief intervention. The HSRS proved satisfactory as a measure of state but not of change because, despite statistically significant reliability, we found that test–retest and inter-observer inconsistencies were of the same magnitude as the changes that might be achieved with such brief and focal therapy. Recently, more penetrating systems have been devised to document the process of psychodynamic change (Horwitz, 1979; Feldman, 1972; Feldman & Taylor, 1980). These are important developments, but they have the disadvantages that they are not yet sufficiently tested; that so far they provide systematic descriptions, but not quantified measures amenable to conventional statistical analysis; and that they require in-depth interviews before therapy, which are inappropriate for the assessment of very brief interventions. We think that further analyses of the content of sessions and follow-up interviews will prove equally illuminating as a supplement to traditional outcome measures for the purposes of this study.

The design depended on randomization which is rarely completely effective. The biases which were introduced, particularly the differences in depression, breathlessness and carbon dioxide sensitivity in the nurse's group compared with the control group, must be taken into account in an assessment of the results. In addition, the lung function tests, although all tending towards minimal deterioration, showed slightly different patterns of statistically significant changes in the 4 treatment groups. It is impossible to put an exact figure on the clinical significance, in terms of predicted change in breathlessness, of changes in the lungs, because of the well-known variability in symptoms, but we consider that these differences between the groups are unimportant.

There were problems in the design for blind psychodynamic assessment. We suspect that the

measures of focal conflict give a conservative estimate of the benefit to all groups, and that this may have differentially affected the analysts' groups. The reason for this is that it was very difficult to give the blind assessor sufficient information about the patients for him to rate focal conflict resolution, particularly if the crucial data were inferences, based on psychodynamic assessments, rather than more objective historical facts. The therapists' ratings are also somewhat limited since they are based on reports of 'blind' interviews, but the therapists' prior knowledge of the patients predisposes to more informed ratings. However, therapists' ratings may be biased and it is not surprising that in this study they cast more favourable light on the outcome of therapy by trained therapists (Harty & Horwitz, 1976; Mintz, 1977).

The choice of treatment and control groups could also be criticized. In psychotherapy so many factors may contribute to the outcome that it is seldom feasible to control for them all in one study. We tried to define hypotheses of both theoretical and practical consequence, but many alternatives could be suggested. For example, it could be argued that the results for the nurse's group reflect the more practical approach typical of a female therapist and that a male nurse should have been recruited to eliminate this possibility. We considered this option but did not pursue it since, in practice, the majority of medical nurses are female, and thus a policy based on the results for a male nurse might be less useful.

Despite all these reservations, our results raise a number of questions about psychosomatic mechanisms. The principal findings and possible mechanisms are listed below.

1. The increase in depression in the nurse's group

(i) Statistical artefact due to biases in the randomization. The nurse's group was significantly less depressed than the control group at the start and this explanation cannot be ruled out.

(ii) Fewer of the nurse's group were taking beta-adrenergic drugs. These are known antidepressives (Lecrubier *et al.* 1977; Feline & Jouvent, 1977). It is possible that the other three groups were protected by this drug from becoming depressed as they faced their feelings.

(iii) Too much sympathy and too little psychotherapeutic skill on the part of the nurse. It is possible that the nurse, by sympathetic listening, put the patient in touch with his feelings, but did not have the skills to enable him to work them through to some resolution. It is notable that the supportive and analytic groups, which did not differ in depression from the nurse's group at the start, had a non-significant trend towards an increase in depression, perhaps because depressive feelings were expressed and worked through in these therapies.

(iv) Specific interventions from the nurse. The most characteristic and frequent intervention we labelled 'balanced encouragement'. This involved the nurse appearing to encourage the patient, but including some discouraging comment. An example might be 'I wish you would give up smoking because I feel you have the willpower to do this'. This was intended to be supportive, but the patient might experience it as a criticism and feel that he did not even have the excuse of lack of willpower to account for his irresponsible behaviour.

2. The beneficial effect of nurse therapy on breathlessness

The data must be interpreted cautiously, since the changes in measures of breathlessness in the 3 therapy groups were not shown to be significantly different, although the nurse's group was the only one to improve significantly and to be significantly less breathless than the other groups at follow-up. Four mechanisms might underlie these changes.

(i) Differential deteriorations in the lungs in the various groups. Deteriorations were small and unlikely to be clinically significant. Furthermore, they might account for the lack of deterioration in the nurse's group but not for positive improvement.

(ii) The improvement in breathlessness might be a consequence of the increase in depression since there is evidence (Shershow *et al.* 1976) that carbon dioxide sensitivity diminishes as depression increases. However, further analysis rules out this mechanism, since carbon dioxide sensitivity in this group significantly increased from start to termination, a unique observation in this project. Furthermore, carbon dioxide sensitivity at the start was significantly higher for the nurse than for the control group; thus the nurse appears to have achieved a benefit in the face of physiological predictions.

(iii) The mobilization of denial. It is possible

that statements containing balanced encouragement, insofar as they act as double messages, mobilize the defence of denial. This could lead to denial not only of psychological distress, but also of perception of breathlessness.

(iv) Discussion of medical treatment. The nurse spent more time talking and advising about medical treatment and it may be that her patients used medical treatment more appropriately and thus suffered fewer severe infections. All therapy groups were admitted to hospital significantly less often than the controls, but the nurse's group had the fewest medical admissions of all, lending tentative support to this hypothesis. No other differences in the use of medical care could be detected. Although the emphasis on medical matters included a discussion of smoking habits, the only sustained changes were an increase in smoking in two subjects, which might be expected to aggravate breathlessness. This contrasts with the finding in the analyst's group, in which the discussion of smoking was minimal, but in which 3 patients claimed to have stopped smoking.

3. The transient improvement in exercise tolerance in the supportive group

(i) Only 5 patients in this group attempted this test and only 3 completed it; hence any interpretation must be cautious.

(ii) The 3 patients may differ from the other 13 in the group, since 2 were rated as less breathless on Fletcher's scale at follow-up than at the start, whereas the group as a whole tended to be rated as more breathless. The delay in reporting relief in dyspnoea until follow-up after recorded improvement in exercise tolerance at termination is of interest.

We found that patients commonly needed time to gain the confidence to attempt more activity and thus to establish that they were less disabled by dyspnoea; one of the benefits of nurse therapy, with its attention to practical matters, seems to have been a greater willingness to attempt more vigorous tasks and this may have contributed to the early and sustained improvement in Fletcher grading in this group.

4. The trend towards greater psychodynamic improvement in the two psychoanalysts' groups

This observation lends some support to the notion that psychotherapeutic experience and skills contribute to psychodynamic change.

5. The relief of psychiatric symptoms as measured by the GHQ in the supportive group but not in the other two therapy groups

Content analysis revealed that when therapists undertook supportive therapy they adhered strictly to the word of the protocol and used almost no classical transference interpretations. However, they circumvented this restriction by making numerous references to the patient's feelings about coming to the hospital, the clinic, the project, and so on. The patients may thus have been drawn into engagement in a non-threatening way by means of an oblique and gradual erosion of their defences. This may have created a trusting relationship in which the therapists more often felt able to take up the issue of death and dying, the fear of which underlay the depression of many of these patients. The unexpected increase in anxiety at the end of therapy in the supportive group may indicate that close therapeutic relationships were being severed.

A further question is which group did better and what health service policies could be devised to take advantage of this? There are 4 striking observations which indicate clear benefit.

(1) The excess of hospital admissions in the control group. Seventy-seven per cent of the no-therapy control group were admitted to the respirology ward during the project. The corresponding figure for the therapeutic groups, including one admission to a psychiatric ward, was 31% (Table 1). Unless the control group patients were admitted unusually frequently, for which there is no evidence, this indicates that increased out-patient observation with psychotherapeutic attention of a more or less specific kind would be cost-effective. Extrapolating from these figures and allowing for the salaries of the therapists, the saving, if the 17 patients in the control group had received therapy, would have been approximately £5250 for psychoanalytical treatments or £6250 for nurse treatment. Our results are thus consistent with recent work showing that liaison psychiatric services can be cost-effective (Levitan & Kornfeld, 1981).

(2) The trend towards benefit in terms of breathlessness and the clear psychiatric benefit to the group as a whole, despite physical deterioration. This result supports the comments under (1), but also applies to the control group, showing that even patients in the group which had so

many admissions did experience some benefits.

(3) The transient benefits to the control group in relief of psychiatric morbidity without any compensatory disadvantages. This is clear evidence for the benefits of increased observation, but it may be borne in mind that increased observation, without some kind of specific therapy, could result in an increase in the use of medical resources in the form of admissions to hospital. We do not have an 'unobserved' control group to act as a comparison for this.

(4) The sustained benefit to the supportive group in psychiatric symptoms and psychodynamic change and to the analytic group in psychodynamic change alone, without compensatory disadvantages.

We are left with a controversial result for nurse therapy, since only this group experienced both sustained improvement in terms of breathlessness, and deterioration in terms of an increase in depression. If it proved possible to uncouple the effects of depression and the relief of breathlessness, nurse therapy would have special advantages as a cheap treatment for dyspnoea. The data on carbon dioxide sensitivity suggest that the coupling may not be due to an inevitable, psychophysiological mechanism. However, we do not know enough to say precisely how the gains and losses could be separated. Our data do suggest that the nurse could select out, in advance, those who would deteriorate psychiatrically with her current technique, and that patients' expectations are a guide to those who might experience the relief of breathlessness. If the two effects inevitably go together, a choice must be made between nurse and supportive psychotherapy which produce different combinations of benefits. It is possible that specific techniques, especially references to the use of the medical care, could be borrowed from nurse therapy with the aim of maximizing the benefits of supportive therapy.

Until a purely beneficial therapy can be devised, the issue of the values which are placed on different outcomes and their duration must be faced. The question is, which combination of outcomes is valued more: the sustained relief of dyspnoea with an increase in depression on the one hand, or sustained psychiatric and psychodynamic change, perhaps with transient improvement in exercise tolerance on the other? We are not able to answer this, but studies on the valuation of symptoms for health indicators (Rosser, 1983) suggest that patients consider breathlessness to be more serious than depression. However, to make a rational choice, we need to know the precise magnitude of the differences in values placed on the two symptoms.

The results of this study are of concern to practising psychotherapists. What constituted the effective ingredient of supportive psychotherapy and how far can its apparent superiority over classical analytic therapy be generalized to other groups of patients and to therapy in other settings? Our speculations about this are based on the experience of the three therapists and the characteristics of the patients.

The patients were typically elderly, struggling with adverse social conditions and chronically materially and emotionally deprived. They felt overwhelmed by a progressive, life-threatening illness, and grief and fear of death were central therapeutic themes, rendered urgent by the brevity of therapy. In such a brief format the challenge to the therapist was to get in touch with the patient's most significant feelings as soon as possible. This required the therapist to be positively involved. Appropriate techniques were gradually elaborated, particularly during two pilot studies.

Both the nurse and the supportive techniques demanded an active concentration on the patient as a person. In contrast, the analytic technique based on interpretation of the transference and transference–childhood links seemed too objective and dispassionate. It proved to be less suitable both for very brief therapy and for this symbolically impoverished, physically ill population. For longer therapy with younger neurotic patients, symptomatic relief might seem less important and classical psychoanalytical interventions might be more appropriate.

A final question concerns the service setting within which these two types of therapy might take place. Chest clinics might focus more attention on out-patient services with the expectation that this would lead to a reduction in the demand for in-patient care. There might be a place for medical out-patient nursing officers to run their own counselling clinics, a development in line with the trend towards more patient centred nursing (Royal College of Nursing, 1977). In addition, for more introspective

patients and those prone to severe depression, there may be a role within the medical team for the newly emerging liaison psychotherapist.

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APPENDIX 1

Examples of therapists' summaries including focus and outcome criteria

Patient 1: Age 71. Therapist: Psychotherapist A

Disturbances

Complaints concern effort wheeze and frequent chest infections with worsening symptoms of affective lability and disturbance of feelings in connection with his own illness and that of his wife. A slight stammer under stress all his life.

Dynamic hypotheses

An emotional person with good ego development who experienced early loss (of father). Good 'saving' capacities in his mother and stepfather have been well internalized. However, he has always coped with danger and fear of death by relying on order, energy and integrated ego functioning. These defences against fears appear to have crumbled recently in the face of wife's near death, his very intimate experience of this, and his obvious fear and disgust. His own feelings of disturbance about threats to his physical health have been increased by his wife's illness, and he has become aware of his emotional dependence on her and her passivity.

Focus and therapeutic plan

To explore his feelings about his own and his wife's situation and to connect them if possible with his fantasies about his father's death so that some more adequate grieving can take place.

Outcome criteria

That there would be a significant reduction in his fear of death. At follow-up, this would be shown by a report of reduction in his anxiety about uncertainty in his daily life, and by demonstrable ability to talk of his wife's and his own death with control.

Patient 2: Age 70. Therapist: Psychotherapist B

Disturbances

An intelligent lady, who seems ill at ease about the project. She was quick to tell me that she did not think there was any emotional factor behind her breathlessness. However, she is cooperative and tells me about herself frankly and fluently.

Dynamic hypotheses

It became clear that she and her husband are emotionally remote from one another. This seems to suit them both, although there are strong undercurrents of resentment in her about what she sees as his pig-headedness and inattentiveness. When talking about her husband and her first son, who committed suicide, she became anxious. She seems to have an active emotional fantasy life, but keeps her feelings to herself.

Focus and therapeutic plan

The transference paradigm will probably be one of her experiencing me as an intrusive and evasive mother or perhaps as the son she has lost, who she still has not grieved for properly and idealizes. The area of denied or split off feelings is the most important focus with specific reference to her relationship with her husband and to her son's suicide. Genetically the roots for these problems lie in her relationship with her mother.

Outcome criteria

She must be able to express and work through some bottled-up grief about her son. She should then be able to resume active sexual and emotional intercourse with her husband.

Patient 3: Age 55. Therapist: Nurse

Disturbances

Dyspnoea with conversation and minimal exertion. The patient grew up in an orphanage, does not have any close relationships and has lost touch with his family. Friendly with neighbours who help out with washing and shopping. Knows some people in the locality to acknowledge, and rents a room in a house with 14 others. He is very worried about how he would manage in the event of becoming more ill.

Hypotheses

The patient is a sad, frightened, isolated man, uncertain as to how he will manage in the face of deteriorating illness without support.

Focus and therapeutic plan

I think examination of how he can manage his practical day to day life might be valuable. He is more likely to respond to advice than to analytic reasoning.

Outcome criteria

He should be able to go out and seek entertainment and company, without the need to drink to give him courage. Specific forms of behaviour which would indicate improvement include going to the cinema once before follow-up; asking somebody for help – e.g. consulting his boss about doing a day shift during the winter; and talking to somebody outside the house once per week.

APPENDIX 2

Details of measures of breathlessness, mood and psychodynamic change

1. Visual analogue scale of dyspnoea (Aitken *et al.* 1970)

Please make a cross (×) on the line below to show how you have been feeling about your breathlessness over the *past 24 hours.*

Not breathless _____ Extremely breathless

2. Fletcher scale of dyspnoea (Fletcher *et al.* 1959)

1. Are you short of breath on strenuous exercise?
2. Are you short of breath when hurrying on the level?
   Or
   Walking up slight hills?
3. Does shortness of breath make you walk slower than most people of your age on the flat?
   Or
   Have you had to stop after a mile or so (or after ¼ hour) on the level at your own pace due to shortness of breath?
4. Have you been stopping for breath after walking 100 yards (or after 4 minutes) on the level at your own pace?
5. Have you got short of breath after walking a few yards at your own pace?
   Or
   Did getting undressed last night make you short of breath? (Check that it was the slight effort involved and not bending over etc.)

Note. Score 0 if Q1 is answered NO, otherwise score the highest number answered YES.

3. Breathlessness questionnaire to detect disproportionately severe breathlessness (based on Burns, 1967)

Sometimes you have trouble with your breathing which people call 'shortness of breath' or 'breathlessness'.

Please answer these questions about it by ticking in the appropriate box.

The first question has been completed for you as an example.

	Yes	No
1. Do you have shortness of breath at times?	✓	
2. Does it get worse when you exert yourself?		
3. Does it get better when you rest?		
4. Does it ever come on when you are not moving around?		
5. Is the main trouble getting air *into* your chest?		
6. Do your breathing troubles vary a lot for no reason?		
7. Do you find that having an alcoholic drink helps your breathing? (If you never drink, tick NO.)		
8. Do you find that taking a tranquillizer (pills for your nerves) helps your breathing? (If you never take them tick NO.)		
9. Some people sometimes get worried by the presence of other people and find this makes their breathlessness worse. Does this happen to you?		
10. Do you get more short of breath in the evening?		
11. Does a smoky atmosphere, change in the weather or a stuffy room affect your breathing?		
12. Do you get panicky about dying when your breathlessness comes on?		
13. Does your morning breathlessness get helped by bringing up sputum? (If you do not have morning breathlessness, leave both boxes blank.)		

'Abnormal' responses are shaded.

4. Visual analogue scales of mood (Aitken *et al.* 1969)

Please make a cross (×) on each line to show how you have been feeling in the past 24 hours.

Not anxious _____ Extremely anxious

Not depressed _____ Extremely depressed

5. Scale of resolution of focal conflict (Malan, 1963, 1976*a*, *b*)

4 Recovered.

3 Evidence for substantial resolution in main problem.

2 Evidence for limited resolution in the main problem.

1 (*a*) Substantial symptomatic improvement without appreciable changes in the problems of human relations.
(*b*) Valuable false solution.

0 All other changes or no change.

6. Health Sickness Rating Scale (Luborsky & Bachrach, 1974)

Definition of scale points		Examples of scale points
At 100: An ideal state of complete functioning integration, of resiliency in the face of stress, of happiness and social effectiveness.	100	Some patients who complete treatment and some who come for and need only 'situational' counselling.
(From 99 to 76: Degrees of 'everyday' adjustment. Few individuals in this range seek treatment.)		
At 75: Inhibition, symptoms, character problems become severe enough to cause more than 'everyday' discomfort. These individuals may occasionally seek treatment.	75	Patients with very mild neuroses or mild addictions and behaviour disorders *begin here* and go on down, depending on severity.
At 65: Generally functioning pretty well but have *focalized* problem or more generalized lack of effectiveness without specific symptoms.	65	Clearly neurotic conditions (most phobias, anxiety neuroses, neurotic characters).
At 50: Definitely needs treatment to continue work satisfactorily and has increasing difficulty in maintaining himself autonomously (even without expressed or recognized need for formal treatment). Patient may either be in a stable unsatisfactory adjustment (where most energy is bound in the conflicts) or an unstable adjustment from which he will likely regress.	50	Severe neuroses such as severe obsessive–compulsive, may be rated at 50 or lower, rarely below 35. Some *compensated* psychoses. Many character disorders, neurotic depressions.
	35	*Most* borderline schizophrenias; severe character problems. Psychotic depressions may be this high, or go all the way to 0.
At 25: Obviously unable to function autonomously. Needs hospital protection, or would need it if it were not for the support of the therapist. The fact that the patient is in the hospital does not mean he *must* be rated at this point – he may have changed since admission or be hospitalized for any of a variety of reasons.	25	Most clear-cut, overt psychoses, psychotic characters, severe addictions (which require hospital care).
(From 24 to 1: Increased loss of contact with reality: need for protection of patient or others from the patient; high degree of regression.)		
At 10: Extremely difficult to make any contact with patient. Needs closed ward care. Not much chance of continued existence without care.	10	'Closed ward' patients, such as chronic schizophrenics, excited manics, profound suicidal depressions.
At 0: Any condition which, if unattended, would quickly result in the patient's death, but not necessarily by his own hand.	0	Completely regressed schizophrenics (incontinent, out of contact) who require complete nursing care, tube feedings.

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