

## Applied Relaxation Training for Generalised Anxiety and Panic Attacks:

### The Efficacy of a Learnt Coping Strategy on Subjective Reports

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The results of applied relaxation training in patients with generalised anxiety and panic attacks are reported. ART was taught during one session, by means of participant demonstration, written instructions, taped instructions, or a combination of all three, with instructions to practise at home. All four methods proved superior to a waiting list control, but there were no differences between the treatment groups. There was some evidence for the non-specific effect of expectancy, but this did not completely explain the treatment effect.

The treatment method of progressive Relaxation Training was designed by Jacobson (1938). During the early development of behaviour therapy it became incorporated into the procedure of systematic desensitisation, as a response incompatible with anxiety (Wolpe, 1958). More recently, however, relaxation has been used (as originally suggested) as a treatment in its own right, and numerous conditions such as hypertension, headaches, insomnia, and anxiety disorders have been shown to be suitable for such treatment (Rachman & Wilson, 1980). Anxiety disorders have been investigated in most detail, and relaxation training is reported to be superior to control procedures. It was typically effective when taught for four or more sessions, when instruction was given in person, and when subjects had control over the progress of treatment (Borkovec & Sides, 1979; Hillenber & Collins, 1982). Use of a counter-demand condition indicates that the treatment effect of relaxation cannot be explained purely by non-specific effects (Steinmark & Borkovec, 1974; Borkovec *et al.*, 1978).

Relaxation training may facilitate fear reduction during exposure treatment of situational anxiety (Gillan & Rachman, 1974), though Glaister (1982) concluded that the fear-reducing effect of relaxation alone was less than that of exposure to the feared stimulus. However, in generalised anxiety states where no precipitating situation can be identified *in vivo* exposure is not possible, and relaxation training may then be indicated for reduction of anxiety. Suinn & Richardson (1971) developed anxiety management training (AMT) for such generalised anxiety conditions: patients were taught to control anxiety through muscle relaxation and mental imagery. Although two studies indicated positive results in

student volunteers (Edie, 1972; Nicholetti, 1972), generalisation to a clinical population may not be valid. However, a recent study (Jannoun *et al.*, 1982) reports treatment of 27 out-patients using a modified version of AMT. Patients were allocated to three groups, with a four, six or eight week waiting time. Improvement occurred on all anxiety ratings over the treatment period, and these gains were maintained at three months: significantly greater changes for the groups with less waiting time indicated that the improvement was due to treatment. Furthermore, depression ratings also decreased over this period, and intake of anxiolytic drugs decreased by 60%.

In AMT the therapist assumes a didactic role in helping the patient to acquire a coping skill, and this is in accord with the recent direction of behaviour therapy. However, if the patient is to learn a skill, practice is required. Hillenber & Collins (1983) demonstrated the superiority of home practice relaxation over no such practice in volunteers, but the same authors (1982) found that only 60% of studies reported any type of home practice, and only 19% assessed compliance. A number of studies indicate that subjects exaggerate compliance, although results correlating subjective and objective compliance with outcome are inconsistent (Hillenber & Collins, 1983; Hoelscher *et al.*, 1984; Barr Taylor *et al.*, 1983).

The behaviour literature has been less concerned with aetiology than with the outcome of treatment, but it has been suggested that hyperventilation may play an important role in panic attacks (Lum, 1976; Hibbert, 1984), and breathing control effectively reduces anxiety attacks (Kraft & Hoodguin, 1984; Clark *et al.*, 1985). Abdominal-diaphragmatic breathing is enhanced by relaxation, but suppressed

by conditions of emotional strain (Faulkner, 1941); in view of the effect respiratory function can have on other physiological systems, especially cardiovascular function (Grossman, 1983), some training in breathing exercises or control is therefore strongly indicated for anxiety control techniques.

Recently, the move towards psychological treatment of anxiety has been boosted by the increasing recognition of dependence problems associated with benzodiazapines (Ashton, 1984; Lader, 1983; Tyrer *et al.*, 1983) and of the fact that they do not increase the efficacy of behavioural treatments (Grey *et al.*, 1981; Sartory, 1983). This has been especially true in primary care (e.g. Teare Skinner, 1984). The use of such methods as relaxation training by different professions, often simply by handing out taped instructions, has generally increased, and such taped instructions and booklets are now widely available. However, little is known about the effectiveness of such modes of presentation.

The present study was performed to examine a number of questions:

- Would applied relaxation training (ART) be efficacious in generalised anxiety?
- Could ART be taught in a single session and be learnt through home practice?
- Would the mode of instruction differentially affect efficacy?
- Would different types of symptoms be differentially affected?
- If efficacious, could a non-specific effect be responsible for improvement?
- What factors are important in predicting improvement?

#### Method

##### Subjects

Fifty consecutive referrals to a district psychology department were randomly allocated to one of four treatment conditions or to a waiting list control group; patients had been referred either from the Department of Psychiatry or directly from general practitioners.

Patients were included in the study if their main presenting problem and referred problem was that of generalised anxiety. This was defined as:

- experiencing panic attacks that were not situationally determined
- experiencing high levels of general anxiety and tension, and complaining of an inability to relax most of the time
- physical symptoms of anxiety being present and a major source of complaint.

Many patients also complained of other problems such as situational anxiety (e.g. agoraphobia) and mild-to-moderate depression; those whose principal complaint was

of situational anxiety or who were at risk of suicide were excluded. Many patients were on psychotropic drugs, but those who thought their medication was no longer producing any improvement were included, and were asked to continue taking their medication. Details of the characteristics of the sample are presented in Table I.

##### Dependent variables

*Self-report instruments.* At pre-treatment and post-treatment assessment, patients completed the Symptom Rating Test (SRT) (Kellner & Sheffield, 1969; 1973) and the Epstein-Fenz Anxiety Scale (EFAS) (Fenz & Epstein, 1965; Fenz, 1967). The SRT consists of 30 items, each rated on a four point scale, and provides both a total score and four sub-scales: anxiety depression, somatic symptoms and inadequacy. It is designed to measure distress, and has been shown to discriminate between neurotic and normal subjects, and to change in the expected direction in neurotic patients after treatment (Sheffield & Kellner, 1970). The EFAS consists of 43 items, mostly from the Taylor Manifest Anxiety Scale, each rated on a five point scale. The sub-scales relate to autonomic anxiety, striated muscle tension, and feelings of fear and insecurity. All three sub-scales have been shown to differentiate between normal subjects and psychiatric patients 'diagnosed as anxiety neurotics' (Fenz, 1967).

*Benefit gained.* At post-treatment assessment, the subjective benefit of treatment was assessed on a three point scale

TABLE I  
Sample characteristics

No. of subjects	50
Proportion of females	60%
Mean age: years	40.5 (s.d. 10.8)
Mean duration of symptomatology: years	5.34 (s.d. 5.92)
Marital status	
Single	10%
Married	74%
Other	16%
Unemployed	44%
Source of referral	
Psychiatrist	84%
GP	14%
Self-referral	2%
Taking hypnotics	14%
Taking minor tranquillisers	46%
Taking antidepressants	28%
Taking neuroleptics	4%
Previous psychiatric history	42%
Previous treatment	
None	32%
GP <sup>1</sup>	26%
Psychiatrist	42%

1. Patients who had received psychotropic medication from their general practitioner

(0 = none or minimal benefit, 1 = beneficial, 2 = very beneficial). The patient was asked what effect the treatment had had on his anxiety problem; a rating of 2 was only given if the patient responded spontaneously that the treatment had been very beneficial.

*Further treatment.* A number of patients needed further treatment, and it was considered unethical to withhold this from patients so that follow-up data could be collected. However, such data from patients not requiring further treatment would be impossible to interpret, due to the sample being highly biased. A measure of further treatment required was used instead, the scale being 0 = further treatment not required; 1 = further instructions on relaxation methods needed only; 2 = further treatment besides relaxation required. Once patients were discharged, they were advised to contact the department if they needed to; classification was made at post-treatment, or if they contacted the department during a minimum 6 months post-discharge period. Since some patients required other treatments for multiple problems, e.g. exposure for situational anxiety, this measure of improvement is conservative.

*Subjective compliance.* Patients were instructed to practise their exercises at least once a day. If they felt these were helpful, or if they were troubled either by a panic attack or by high levels of tension, then they could practise more frequently. Patients were asked to keep a record, on a provided record sheet, of every time they practised the full exercise procedure, and to estimate their anxiety levels before and after on a scale of 0–100. They were told that the purpose of the record keeping was to see if their anxiety levels decreased after the exercises. Compliance of 100% would be achieved if the exercise routine was practised once a day, and practice in excess of this would be regarded as a behavioural index of perceived usefulness of the exercises.

#### Procedure

Patients were randomly allocated to one of four treatment groups or to a waiting list control; those in each of the treatment groups were consecutively allocated to either an expectancy or counter-expectancy condition (see below). Patients in the waiting list control group were sent an appointment for approximately six weeks ahead, together with the SRT and EFAS and instructions to complete these (indicating how they had felt over the past week) and to return them in the envelope provided. Assessment of suitability was made both from the referral letter and at interview. Patients in the four ART treatment groups were interviewed, and recruited if suitable for study. They then completed the SRT and EFAS; a further appointment was given for one week later.

#### Treatment groups

The four ART treatment groups were each instructed by a different method: (a) handout (written instructions); (b) tape (taped instructions); (c) participant demonstration

(verbal instruction and practice); and (d) combined methods (written and taped instructions to take home, with verbal instruction and practice during the session).

All patients received a rationale for applied relaxation training, which emphasised the ability to control physical symptoms through the use of correct breathing and tension release exercises, and the use of imagery to distract attention from anxiety-associated cognitions.

The ART method has the following components: (a) self-monitoring of anxiety levels; (b) correct breathing—monitoring of breathing and the use of exercises to encourage diaphragmatic breathing; (c) progressive muscle relaxation, consisting of tension release exercises; (d) positive mental imagery.

In each of the treatment groups the content of the material was the same but the mode of presentation differed. After the basic rationale, the Handout group received written instructions on the ART exercise routine. Patients in the Tape group were given taped instructions only. Patients in the Participant Demonstration group were given a demonstration of the ART exercise routine in which they participated by following the instructions and model of the therapist. The Combined Treatment Group received the live instruction during the therapy session, as had the Participant Demonstration Group, and were also given written instructions and a tape as in the other two groups.

#### Expectancy conditions

The ten patients in each treatment group were alternately allocated to either an expectancy or counter-expectancy group. Patients in the former group were told that they should expect continued benefit every time they fully practised the exercise routine, which would increase the more they practised. This point was strongly emphasised. Patients in the counter-expectancy group were told that benefit was slow to become apparent, and that they should not expect to feel any benefits from the exercise routine before the next appointment (post-treatment assessment); they should, however, practise as instructed. Again, these points were strongly emphasised. The counter-expectancy condition was designed to reduce the non-specific effects of the expectancy of improvement from receiving treatment.

Patients were given a further appointment for approximately five weeks later, during which the post-treatment assessment took place. Four patients failed to attend for this assessment (two from the Handout group and two from the Combined Treatment group).

#### Statistical analysis

Results were analysed using a standard statistical package. Results are presented in terms of percentages or of means and standard deviations. Bivariate comparisons are presented in terms of analysis of variance, while outcome is described in terms of analysis of variance of paired *t*-tests. Correlation coefficients (*r*) between variables are also presented. Attempts were made to incorporate multiple regression techniques in the prediction of the various outcome measures. To do this, the  $\epsilon^2$  coefficient was calculated; this can be interpreted as the proportion of the total

variability in the dependent variable that can be accounted for by knowing the value of the independent variable (Nie *et al.*, 1980).

## Results

### Success of the experimental design

There were no differences across the groups in age, marital or employment status, duration of symptomatology, source of referral, or medication usage (whether minor tranquilisers, antidepressants, hypnotics, or neuroleptics). By chance, there were no males in the demonstration group, leading to a gender imbalance, but since there was no gender difference on any of the outcome measures this did not seem to merit further consideration. As would be expected, the average time of treatment sessions was less for the Handout and Tape groups than for the Demonstration and Combined groups.

There was no difference on initial psychometric scores between the expectancy conditions, demonstrating that random allocation had been successful. At outcome, the counter-expectancy group showed a trend towards high SRT total scores, ( $\epsilon^2 = 9.9\%$ ,  $P < 0.07$ ) and SRT depression subscale scores ( $\epsilon^2 = 10.7\%$ ,  $P < 0.06$ ). A clear difference was evident on the SRT anxiety sub-scale ( $\epsilon^2 = 13.9\%$ ,  $P < 0.03$ ). No difference was evident on the other scales.

### Association between variables

There was a significant negative correlation between the psychologist's assessment of further treatment need and the patient's self-rating of perceived benefit ( $r = -0.6$ ,  $P < 0.001$ ). A complete association between the two measures would not be expected, since although a patient may perceive benefit for his generalised anxiety he may still need treatment for other problems such as situational anxiety or depression. There are also significant positive correlations between further treatment need and SRT (total score) ( $r = +0.33$ ,  $P < 0.05$ ), SRT (anxiety) ( $r = +0.43$ ,  $P < 0.05$ ) and insecurity ( $r = +0.38$ ,  $P < 0.05$ ) at post-test. There were no significant correlations with pre-test measures. There were significant negative correlations between perceived benefit and SRT (total score) ( $r = -0.38$ ,  $P < 0.05$ ), SRT (anxiety) ( $r = -0.42$ ,  $P < 0.01$ ), SRT (depression) ( $r = -0.37$ ,  $P < 0.05$ ), and SRT (inadequacy) ( $r = -0.39$ ,  $P < 0.02$ ). There were no significant correlations with pre-test measures: this indicates a high agreement between the psychologist and patient on improvement. The agreement between the interview ratings and the standardised self-rating tests is significant, but fails to explain a considerable amount of the variance.

### Outcome of study

**Perceived benefit.** Approximately 70% of the treated groups reported at least some benefit. The difference among the four treatment groups was minimal ( $\epsilon^2 = 2.0\%$ , NS) (Table II).

**Further treatment needs.** The therapist considered that about 60% of subjects were in need of further treatment;

differences among the treated groups were not significant ( $\epsilon^2 = 7.4\%$ , NS) (Table II).

**Self-reported compliance.** One third of the group had complied with the instructions on 14 days or less; about 25% practised on 29 days or more. The mean number of days practice was 23.1 (s.d. 15.7). There were no significant differences between treatment groups. Compliance was also calculated as the percentage of times practised, where once per day would indicate 100% compliance; 24% of patients had a compliance of 76% or more, and there was a mean compliance of 68% s.d. 42.0, range 0–200%. There were no significant differences between groups ( $\epsilon^2 = 4.9\%$ , NS). Compliance was significantly correlated to perceived benefit ( $r = +0.68$ ,  $P < 0.001$ ) and significantly negatively correlated to further treatment need ( $r = -0.40$ ,  $P < 0.02$ ).

**Psychometric scores.** No differences were found between the pre-treatment psychometric scores for the different treatment groups, confirming that random allocation had not by chance produced any pre-treatment psychometric differences. Results for all patients are given in Table III. Significant differences were found between pre-treatment and post-treatment on SRT (total score), SRT (somatic), and the three EFAS subscales and approached significance on SRT (anxiety). No differences were found in the Waiting List group.

Some psychometric differences among the treatment groups are evident. The Handout group showed a reduction only in autonomic anxiety ( $t = 2.61$ ,  $P < 0.05$ ). The only clear difference evident in the Tape group was a reduction in insecurity ( $t = 2.29$ ,  $P < 0.05$ ), although non-significant trends were noted in SRT (total) ( $t = 2.00$ ), SRT (anxiety) ( $t = 2.06$ ), SRT (somatic) ( $t = 2.15$ ), and autonomic anxiety ( $t = 2.05$ ). The Participant Demonstration group showed a significant reduction in autonomic anxiety ( $t = 2.37$ ,  $P < 0.05$ ), as did the Combined group ( $t = 3.27$ ,  $P < 0.02$ ); the latter group also showed a significant reduction in insecurity ( $t = 2.08$ ,  $P < 0.05$ ).

**Expectancy.** There were no significant differences between the expectancy conditions on any of the four major treatment variables, so that it was unnecessary to consider expectancy as a covariate in the rest of the analyses.

TABLE II  
Results of treatment

Perceived benefit	
No benefit	30.6%
Some benefit	50.0%
Great benefit	19.4%
Further treatment	
None	38.9%
Relaxation therapy	16.7%
Other behaviour therapy	44.4%

TABLE III  
Effect of treatment

Scale	All treatment groups (n=36)			t	P <	Waiting list (n=10) <sup>1</sup>		
	Pre-treatment score	Post-treatment score	t			Pre-treatment score	Post-treatment score	t
<b>SRT</b>								
Total	60.56	55.33	2.32	0.03	65.00	63.20	0.59	
Anxiety	18.50	16.86	2.01	0.06	19.20	18.50	0.65	
Depression	15.11	14.17	1.75	NS	17.80	16.40	1.83	
Somatic	13.22	11.75	2.60	0.02	13.60	13.40	0.22	
Inadequacy	13.89	13.03	1.36	NS	15.10	15.10	0.00	
<b>Epstein-Fenz</b>								
Autonomic anxiety	38.39	33.81	4.65	0.001	36.50	36.80	0.20	
Muscle tension	34.47	31.92	2.55	0.02	33.70	33.10	0.03	
Insecurity	50.14	45.67	3.51	0.002	49.50	50.30	0.42	

1. P not significant for any scale

### Conclusion

In general, treatment groups improved significantly more than the Waiting List control group, but there were few differences among the different types of treatment. Random allocation to experimental and control groups proved successful. The initial demographic and clinical variables were unrelated to outcome, but initial psychometric scores, unsurprisingly, were highly correlated with final levels. Manipulation of the expectancy condition was influential in terms of differences on some of the psychometric measures at outcome, but showed no relationship with perceived benefit, further treatment need, or the two measures of compliance.

### Discussion

The results will initially be discussed in terms of the questions previously formulated.

(a) The results indicate that ART does produce short-term improvements in patients with generalised anxiety, compared with a waiting list control group (who showed no improvement).

(b) It does appear to be possible to teach a therapeutically effective self-help skill in a single session followed by home practice. Approximately 70% of patients reported having received some benefit from the single session and home practice, and nearly 20% reported receiving great benefit. However, approximately 60% required some form of further intervention. Although reported compliance with home practice was extremely variable, it appeared to be associated both with the patients' and the psychologist's assessment of improvement; however,

correlations do not allow an interpretation of the direction of this relationship. This subjective rate of compliance is approximately equal to the 71% found by Barr Taylor *et al* (1983) with hypertensive patients.

(c) The type of instruction given did not significantly effect outcome. There was no consistent superiority in any of these four methods of presentation.

(d) Measures that reflected the physical and somatic aspects of anxiety, e.g. the SRT anxiety and somatic scales and the EFAS, responded best to treatment. There was no significant improvement in the SRT inadequacy scale, which represents a more cognitive dimension of anxiety, and no evidence that ART had any effect on depression. Hence there is a differential treatment effect on types of symptoms, reflecting an improvement in physical and somatic symptoms, but with little generalisation to cognitive and mood-related symptoms. This is also reflected when the four treatment groups are examined separately. Surprisingly, the muscle tension scale did not show significant improvement. It would have been expected that a treatment method that included progressive muscle relaxation would have an effect on reports of striated muscle tension, but this was not demonstrated.

(e) There was evidence of a non-specific effect in treatment: two scales of the SRT showed a significant difference, and two other scales approached significance. The results indicated a better outcome for patients who had an expectancy of improvement with practice. These differences were not related to



any of the treatment groups, and can therefore be thought of as a generalised expectancy effect. However, expectancy of improvement was not related to subjective estimates of benefit, nor to the psychologist's estimate of further treatment needed. Nor was there a relationship between expectancy and compliance, so the effect of expectancy was not mediated by amount of practice. The evidence suggests that non-specific effects manipulated by the therapist do contribute to treatment outcome, but that not all improvement can be explained solely by expectancy manipulation.

(f) Attempts to identify predictors of improvement were unsuccessful. It was interesting that different types of psychotropic medication did not affect outcome.

This was a clinical trial of a method of anxiety reduction. The subjects, 42% of whom had a previous psychiatric history, included patients who had experienced symptoms for long periods (mean 5.34 years, s.d. 5.92, range 2.4 months to 18 years). Only 30% of those who received ART were not taking psychotropic medication. Although this population included many patients with a chronic anxiety problem who were not improving on other treatment regimes, one session during which instruction in ART was given produced small but significant improvements. Of these patients, 39% needed no further treatment, and a further 17% needed only further instruction in relaxation. Although 44% needed further behavioural treatment, some had also presented with other clinical problems.

In a trial of AMT with a similar clinical population of generalised anxiety patients, Jannoun *et al* (1982)

demonstrated the superiority of AMT over a no-treatment waiting list period; their treatment method can be thought of as most comparable to the combined treatment group in the present study, although their patients received further instruction in relaxation as part of the procedure. The results of the present study support those of Jannoun *et al* in demonstrating the usefulness of anxiety management-type techniques in generalised anxiety. No evidence was found in the present study to demonstrate a consistent reduction in depression.

In contrast to previous studies on relaxation (Borkovec & Sides, 1979; Hillenberg & Collins, 1982), we found no advantage in live presentation of relaxation methods during the treatment session. This may be due to the fact that only one treatment session was given; if treatment had been extended over a number of sessions it is possible such differences would have become apparent. However, since there is no advantage in a single session live participant demonstration, giving taped or written instructions may be desirable, due to a significant economy of time. If patients do not improve, then more intensive efforts can be employed. The fact that the patient's expectancy of improvement—manipulated by the therapist—can affect outcome signifies the importance of presentation of the treatment rationale, and the method employed is probably crucial.

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#### References

- ASHTON, H. (1984) Benzodiazepine withdrawal: an unfinished story. *British Medical Journal*, **288**, 1135–1140.
- BARR TAYLOR, C., AGRAS, W. S., SCHNEIDER, J. A. & ALLEN, R. A. (1983) Adherence to instructions to practice relaxation exercises. *Journal of Consulting and Clinical Psychology*, **51**, 952–953.
- BORKOVEC, T. D. & SIDES, J. K. (1979) Critical procedural variables related to the physiological effects of progressive relaxation: a review. *Behaviour Research and Therapy*, **17**, 119–126.
- , GRAYSON, J. B. & COOPER, K. M. (1978) Treatment of general tension: subjective and physiological effects of progressive relaxation. *Journal of Consulting and Clinical Psychology*, **46**, 518–528.
- CLARK, D. M., SALKOVSKIS, P. M. & CHALKLEY, J. (1985) Respiratory control as a treatment for panic attacks. *Journal of Behaviour Therapy and Experimental Psychiatry*, **16**, 23–30.
- EDIE, C. (1972) *Uses of AMT in treating trait anxiety*. Doctoral dissertation, Colorado State University (cited by Jannoun *et al*, 1982)
- FAULKNER, W. B. (1941) Effects of emotions upon diaphragmatic function. *Psychosomatic Medicine*, **3**, 187–189.
- FENZ, W. D. (1967) Specificity in somatic responses to anxiety. *Perceptual and Motor Skills*, **24**, 1183–1190.
- & EPSTEIN, S. (1965) Manifest anxiety: unifactorial or multifactorial composition. *Perceptual and Motor Skills*, **20**, 773–780.
- GILLAN, P. & RACHMAN, S. (1974) An experimental investigation of desensitization in phobic patients. *British Journal of Psychiatry*, **124**, 392–401.
- GLAISTER, B. (1982) Muscle relaxation training for fear reduction of patients with psychological problems: a review of controlled studies. *Behaviour Research and Therapy*, **20**, 493–504.
- GRAY, J., DAVIES, N., FELDON, J., OWEN, S. & BOARDER, M. (1981) Stress tolerance: possible neural mechanisms. In *Foundations of Psychosomatics* (eds M. Christie & P. Mellett). Chichester: John Wiley.
- GROSSMAN, P. (1983) Respiration, stress and cardio-vascular function. *Psychophysiology*, **20**, 284–299.
- HIBBERT, G. A. (1984) Hyperventilation as a cause of panic attacks. *British Medical Journal*, **288**, 263–264.

- HILLENBERG, J. B. & COLLINS, F. L. (1982) A procedural analysis and review of relaxation training research. *Behaviour Research and Therapy*, **20**, 251–260.
- & — (1983) The importance of home practice for progressive relaxation training. *Behaviour Research and Therapy*, **21**, 633–642.
- HOELSCHER, T. L., LICHSTEIN, K. L. & ROSENTHAL, T. L. (1984) Objective versus subjective assessment of relaxation among anxious individuals. *Behaviour Research and Therapy*, **22**, 187–193.
- JACOBSON, E. (1938) *Progressive Relaxation*. Chicago: University of Chicago Press.
- JANNOUN, L., OPPENHEIMER, C. & GELDER, M. (1982) A self-help treatment programme for anxiety state patients. *Behaviour Therapy*, **13**, 103–111.
- KELLNER, R. & SHEFFIELD, B. F. (1969) A cross-over trial of chlordiazepoxide-with-amitriptyline and amitriptyline alone. *British Journal of Clinical Practice*, **23**, 459–461.
- & — (1973) A self-rating scale of distress. *Psychological Medicine*, **3**, 88–100.
- KRAFT, A. R. & HOODGUIN, C. A. L. (1984) The hyperventilation syndrome—pilot study on the effectiveness of treatment. *British Journal of Psychiatry*, **145**, 538–542.
- LADER, M. (1983) Dependence on benzodiazepines. *Journal of Clinical Psychiatry*, **44**, 121–127.
- LUM, L. C. (1976) The syndrome of habitual chronic hyperventilation. In *Modern Trends in Psychosomatic Medicine*, **3**, (ed. O. W. Hill), London: Butterworths.
- NICHOLETTI, J. (1972) *Anxiety Management Training*. Doctoral dissertation, Colorado State University (cited by Jannoun *et al*, 1982).
- NIE, N. H., HULL, C. H., FRANKLIN, M. N., JENKINS, N. G., SOURS, K. J., NORUSIS, M. J. & BEADLE, V. (1980) *SCSS: A User's Guide to the SCSS Conversion System*. New York: McGraw-Hill.
- RACHMAN, S. & WILSON, G. T. (1980) *The Effects of Psychological Therapy* (2nd edn). Oxford: Pergamon Press.
- SARTORY, G. (1983) Benzodiazepines and behavioural treatment of phobic anxiety. *Behavioural Psychotherapy*, **11**, 204–217.
- SHEFFIELD, B. F. & KELLNER, R. (1970) The temporal stability of self-rating of neurotic symptoms. *British Journal of Abnormal and Social Psychology*, **9**, 46–53.
- STEINMARK, S. W. & BORKOVEC, T. D. (1974) Active and placebo treatment effects on moderate insomnia under counterdemand and positive demand instructions. *Journal of Abnormal Psychology*, **83**, 157–163.
- SUINN, R. & RICHARDSON, F. (1971) Anxiety management training: a non-specific behavioural therapy programme for anxiety control. *Behaviour Therapy*, **2**, 498–511.
- TEARE SKINNER, P. (1984) Skills not pills: learning to cope with anxiety symptoms. *Journal of the Royal College of General Practitioners*, **34**, 258–260.
- TYRER, P., OWEN, R. & DAWLING, S. (1983) Gradual withdrawal of diazepam after long term therapy. *The Lancet*, *i*, 1402–1406.
- WOLPE, J. (1958) *Psychotherapy by Reciprocal Inhibition*. Stanford: Stanford University Press.

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