Brit. J. Psychiat. (1968), 114, 323–328

Desensitization and Phobias: A Cross-over Study

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Introduction

The results of a comparative trial of desensitization and psychotherapy for phobias have been reported (Gelder, Marks and Wolff, 1967). Desensitization was found to have a rapid and rather specific effect on phobic symptoms, which was followed by improvement in social adjustment. During group and individual psychotherapy, phobias and other symptoms changed more slowly and social adjustment often improved without any corresponding improvement in phobias. At the end of the investigation the phobias of 14 of the original 26 psychotherapy patients had shown no worthwhile improvement. Six months later, another follow-up showed that 5 had improved further, leaving 9 still unimproved. It was decided to try the effects of desensitization with these patients, particularly in view of a finding by Lazarus (1961) that desensitization helped patients who had not responded to a very brief form of group psychotherapy. As Lazarus worked with volunteer subjects rather than psychiatric patients, and as his "group therapy" averaged only eight weeks, his finding required confirmation before it could be applied to psychiatric patients.

Of the 9 patients available for the cross-over study, 7 had been in group psychotherapy and 2 in individual psychotherapy. One of the latter refused further treatment, and it was decided to limit the cross-over study to the seven who had originally received group psychotherapy. We report here the results of desensitization in these patients, together with findings in another case, studied intensively, which throw further light on the effects of desensitization.

The Patients

The patients were described in detail in the original paper (Gelder, Marks and Wolff, 1967), where it was shown that the three original treatment groups were well matched. Of the seven patients entering this cross-over study, five had agoraphobia, one a phobia of thunder, one a social phobia. Other characteristics were (means in brackets refer to the 9 improved patients from the original 16): Age 38 (28); sex ratio M/F=2/5 (5/4); duration of illness 13 years (8); IQ 108 (109). EPI neuroticism=32 (26); EPI extraversion=13 (15); symptom check list* 26 (22); mean rating of main phobia 3·9 (3·7); total phobia 2·7 (3·0); anxiety 2·6 (2·4); depression 2·6 (2·0); obsession 2·6 (2·0). (Mean ratings are those made at the start of the original trial.)

The Methods of Assessment

These also were described in detail in the original paper. In brief, four sources of information were used: the patients' ratings, the therapists' ratings, the ratings of another psychiatrist (the "assessor") and those of a psychiatric social worker (P.S.W.). Six groups of symptoms were rated: the main phobia, all phobias, anxiety, depression, obsessional symptoms, and depersonalization. Five-point scales were used. Social adjustment ratings were derived from those of Miles, Barrabee and Finesinger (1951), and took into account work, leisure and sexual adjustment, as well as relationships with family and with other people. The inter-rater reliability of the ratings is given in the original paper: it was found satisfactory for the present purpose, ranging from 0·82 for phobias with which this research is mainly concerned, to 0·58 for social relations, the changes in which are less crucial for our argument.

The Treatment and Therapists

The method of desensitization was that used in the original inquiry. The therapists were the authors and two other psychiatrists, one of whom had previous experience with desensitization. One agoraphobic patient was treated by an inexperienced therapist under close supervision.

Five patients had had no drugs during their group therapy and they were desensitized without the use of drugs. Two agoraphobic patients while in group therapy had taken chlordiazepoxide before travelling, and they continued to do so during desensitization. Both these patients took progressively less as desensitization progressed.

The Individual Case Study

A woman of 29 had had fears of travelling in lifts, planes and tube trains for six years, together with severe marital problems leading to recurrent separations and depression. After six months' group treatment she was no better, and it was decided to attempt to desensitize her phobias while she continued to attend group psychotherapy. Desensitization was carried out weekly, immedi-

* Sections G, I, J and L to R of the Cornell Medical Index.

https://doi.org/10.1192/bjp.114.508.323 Published online by Cambridge University Press

ately after the group session. Practical reasons made it impossible to vary the order in which the two treatments were given. The patient had 13 sessions of desensitization in imagination and carried out graduated tasks between sessions. Ratings were made by the patient, the therapist and an assessor at the beginning of group psychotherapy as well as at the beginning and end of desensitization. The patient also rated herself before and after each group and desensitization session.

Results

No patient dropped out of treatment.

(a) *Main phobia* (Fig. 1 and Table I). The phobias of the seven patients had not responded to eighteen months of group psychotherapy: self ratings had changed on average only 0·2 points, psychiatrists' ratings on average only 0·4 points. Little further change took place in the six months waiting period. During desensitization (average four months) patients' ratings fell by 0·7 points, psychiatrists' by 1·1 points.

Thus the total change in patients' ratings between the beginning of group therapy and end of desensitization was 0·9 points, in psychiatrists' ratings 1·5 points. These changes are to be compared with those in the group of sixteen patients who received desensitization from the start of the original investigation—1·5 and 1·6 points respectively.

(b) *All phobias* (Table I). These changed as the main phobia did, but less strikingly. Patients' ratings improved 0·3 points during the 18 months of group therapy; in four months' desensitization they changed 0·5 points. Psychiatrists' ratings changed 0·8 points in group therapy; they changed a further 0·6 points in desensitization.

(c) *Anxiety and Depression* did not diminish during group therapy, but improved somewhat in the waiting period and a little further during desensitization (Table I).

(d) *Duration of Treatment:* Desensitization lasted on average four months. In the original investigation, the 16 patients who were desensitized from the start had received on average nine months' treatment.

(e) *Psychiatric ratings of social adjustment:* Social adjustment ratings did not change significantly, although there was a tendency for work ratings to improve further. In particular, social adjustment ratings did not worsen in the patients whose phobias improved with desensitization.

(f) *Psychiatric Social Workers' Findings:* A P.S.W. followed up patients and assessed their progress independently, on average six months after treatment. The three patients whose

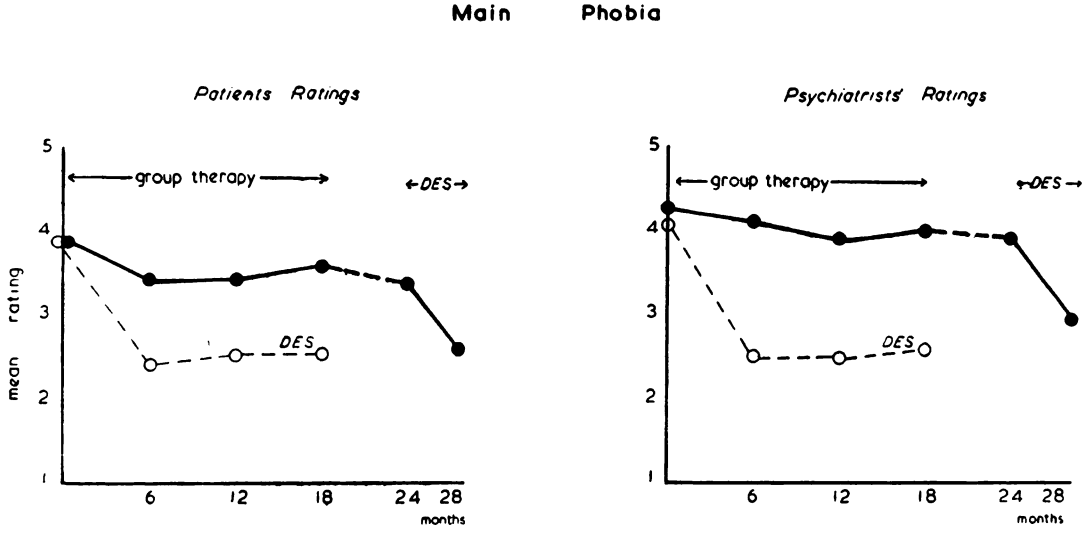


FIG. 1.—Changes in mean rating of main phobia during group therapy and subsequent desensitization. (Changes in original desensitization group shown for comparison.)

————=Cross-over patients (n=7);
- - - - =Original desensitization group (n=16)

https://doi.org/10.1192/bjp.114.508.323 Published online by Cambridge University Press

TABLE I

Cross-Over Study

(*a*) *Patients' Mean Ratings*

	Group Therapy				Desensitization	
	Start	6 ms.	12 ms.	End*	Start	End†
Main phobia	3·9	3·4	3·4	3·7	3·3	2·6
All phobias	2·7	2·4	2·4	2·4	2·4	1·9
Anxiety	2·6	2·6	2·9	2·8	2·6	2·4
Depression	2·6	2·1	2·7	2·6	2·8	2·4
Obsession	2·6	2·3	2·4	2·5	2·3	1·9

(*b*) *Psychiatrists' mean ratings*

	Group Therapy				Desensitization	
	Start	6 ms.	12 ms.	End*	Start	End†
Main Phobia	4·4	4·1	4·0	4·0	4·0	2·9
All phobias	3·1	2·6	2·6	2·3	2·0	1·9
Anxiety	2·5	2·3	2·5	2·5	2·0	1·7
Depression	1·8	2·1	2·0	1·9	1·5	1·3
Obsession	1·7	1·6	1·4	1·7	1·0	1·0

* mean duration of group therapy = 18 months; † mean duration of desensitization = 4 months

phobias were rated much improved at the end of treatment had retained and even extended their improvement. Of the four who had shown lesser degrees of improvement two had retained it and two had relapsed partially. The P.S.W.'s mean follow-up rating of improvement for the cross-over patients was 0·9; the psychiatrist's mean rating made at the end of treatment was 1·1.

The P.S.W. agreed that no patient's social adjustment had deteriorated when phobias improved; improvement of fears had not been bought at the expense of more limited activities. It was also agreed that ratings of work and leisure adjustment changed further in patients whose fears lessened, but that only two patients showed any improvement in sexual adjustment. The P.S.W. saw more evidence of improvement in family relations than the psychiatrist had recorded, rating five patients improved against the psychiatrist's two. However, she agreed that relationships with people outside the family had not changed further, although they had already shown improvement during the period of group psychotherapy.

The two patients whose phobias had relapsed were judged by the P.S.W. to have persisting marital difficulties.

(g) *Single case study.* Table II shows the course of four symptoms in this one patient over the period studied. Anxiety and depression improved with group treatment, but phobias and marital anxieties did not. When desensitization was added, phobias improved gradually, general anxiety fluctuated and marital anxieties still did not improve. Detailed examination showed that when the patient's marital anxieties increased she also became more depressed and more generally anxious; however, her phobias did not increase. The psychiatrists' ratings agreed closely with those of the patient.

Table III shows how each treatment contributed to the improvement of the phobias: group treatment had very little immediate effect, desensitization was followed by an immediate improvement in those phobias which had been treated during the session. This improvement was significantly greater than that produced by group therapy ($p<0·001$). However, much of the improvement which was seen immediately after desensitization was lost by the end of the week (Table III). Even so, desensitized phobias

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TABLE II

Individual Case Study: Mean Score for Each Symptom (10 Point Scale)

		Start of Group	Start of Desensitization	End of Group and Desensitization
Phobias	Patient	6·8	6·8	4·0
	Psychiatrist	9·0	9·0	4·8
General anxiety	Patient	5·8	4·0	5·0
	Psychiatrist	5·0	3·0	5·0
Depression	Patient	5·0	2·0	6·0
	Psychiatrist	4·0	2·0	5·5
Marital anxieties	Patient	8·0	8·0	10·0
	Psychiatrist	8·0	8·0	10·0

TABLE III

Individual Case Study: Mean Improvement per Session (Self-rating on 10 Point Scale)

	Immediately after		Between beginning and end of each week of combined treatment
	Group Session	Desensitization Session	
A. Phobias:			
Desensitized phobias	0·18	1·82*	0·65
Untreated phobias	0·06	0·76	0·35
B. Other symptoms:			
General anxiety	0·17	2·25	−0·17
Depression	0·67	0·08	−0·17
Marital anxieties	−0·25	1·75	−0·17
Sexual dissatisfaction	−0·17	0·25	0·00

* $p<0·001$ on t test for difference from other cells in Table I (a)

retained twice as much improvement as the other phobias. No other rated symptom improved consistently week by week. The relief of depression which immediately followed group therapy was no longer present a week later; the relief of general anxiety and marital worries by desensitization was equally transient.

DISCUSSION

The reliability of our methods of assessment and the efficacy of our treatment have been discussed in detail elsewhere (Gelder, Marks and Wolff, 1967). The methods were shown to be sufficiently reliable for the present purpose.

These seven patients had been in group psychotherapy for 18 months and had waited on average six months after this before starting desensitization. It is reasonable to suppose that any spontaneous improvement or response to non-specific factors would have taken place before desensitization began. The possibility remains that the further response during desensitization might have resulted from the *individual* attention which patients in this treatment received in contrast to their previous treatment in a group. In the original investigation, phobias of patients in individual therapy did improve rather more than phobias of patients in group therapy, so this factor may be of some importance, but the difference was insufficient to

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account for all the changes observed in the cross-over.

The findings are further evidence that desensitization is effective in relieving phobias. They also confirm the original findings (Gelder, Marks and Wolff, 1967) that treated phobias changed more than untreated phobias, while general anxiety and depression changed least. It is particularly striking that changes occurred in so few months in these patients who had resisted so much earlier treatment, and we consider that the findings are of clinical significance even though numbers are too small for tests of statistical significance.

It might be argued that we have merely observed the spontaneous recovery of patients rather than their response to treatment. However, if we take, as an arbitrary criterion, an agreed rating of improvement of two points in the main phobia or the attainment of a rating of two or less, then five patients in the original report of 16 improved in the 24 months before the cross-over. In the four months of the cross-over, however, four patients improved—almost a five-fold increase of improvement rate. It seems likely, therefore, that any tendency for spontaneous recovery has been enhanced by desensitization.

These seven cross-over patients differed from the nine patients who improved in group therapy in being older, and tending to have more symptoms and higher neuroticism scores. However, the phobias of the cross-over patients were *not* more intense than those of the others.

Desensitization lasted only four months on average in the cross-over patients. The patients who were desensitized from the start needed on average 9 months' treatment. This finding resembles that of Lazarus (1961) with volunteer subjects who had isolated phobias: he too found that patients who had received group treatment (in this case for only a few weeks) improved faster when desensitized than others with equally severe phobias who were desensitized from the start. Now, Gelder, Marks and Wolff (1967) found that patients with many widespread symptoms, complicated social problems or marked personality disorder did less well with desensitization. It may be, therefore, that desensitization takes place more speedily after group therapy because some of these other problems improve, leaving the phobias as a more isolated disorder and thus more amenable to desensitization. The finding that increasing age does not diminish the effect of desensitization (though it diminishes the effect of psychotherapy) might be explained in the same way: other problems tend to improve with the passage of time, again leaving the way clear for desensitization.

The design of the single case study had two unavoidable weaknesses. First, the treatments were always given in the same order, desensitization immediately following group therapy. Second, there was no opportunity to measure the separate delayed effect of each treatment. The second defect can be filled in partly by comparing the progress of the phobias desensitized during a session with those not dealt with directly, taking both the ratings immediately after a session and those done a week later. Immediately after desensitization the effect on the treated fears was specific and statistically significant. A week later both had lost some ground, but the phobias desensitized in the previous session still retained more improvement than those not treated directly. No other symptom showed this consistent improvement, which gradually accumulated week by week until eventually the effect was seen in the patient's daily life.

It might be argued that the increase of depression and marital anxieties after desensitization (Table II) indicates symptom substitution or "symptom emergence" (Crisp, 1966). It is known that phobic patients occasionally show an increase of some symptoms as others diminish, both with and without any form of treatment; however, this phenomenon does not occur any more frequently with desensitization than with a variety of control treatments, including brief psychotherapy (Marks and Gelder, 1965; Gelder and Marks, 1966). In assessing its importance in this single case, it can be noted that the depression at the end of treatment occurred during one of the recurrent separations from her husband which the patient had experienced before with the same result. When the husband returned again on this occasion, the depression cleared without a corresponding increase in

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phobias. Thus the depression was related more to the marital problems than to the phobias. It could of course be maintained that improvement in phobias removed a defence and so aggravated the marital problems, but there was nothing in the history to suggest this, and in any case the marital problems were part of a long-standing pattern. Thus although symptom emergence cannot be disproved, the context of the case makes it rather unlikely. Whatever conclusion is reached about this, it does not affect the main purpose of the case study, which was to observe the time relations of changes of phobias to the treatment process.

How much clinical significance do we attach to an improvement of 20 per cent. in phobias? In the individual case this meant that the patient (a journalist) was able to make three overseas plane trips which she had previously avoided, and several long-distance train journeys which she had put off before because of her fear of long tunnels. She was also more ready to go in lifts, but she remained unable to go by underground train. The change of two points in a ten-point scale thus reflected a worthwhile increase in her activities. In the seven patients in the cross-over investigation a change of about one point in five indicated a corresponding degree of improvement. A change from rating 4 to rating 3 implied that the feared situation was no longer almost wholly avoided, but that it was still avoided at times in certain limited circumstances.

The results add to the previous evidence that desensitization has a specific effect on phobic symptoms. It is most effective either when the patient presents few other symptoms, social problems or personality difficulties; or, should these be present when the patient is first seen, after such symptoms and difficulties have subsided either as a result of psychotherapy, or with the passage of time.

Summary

1. Of 16 phobic patients who had group therapy in a previous investigation, 7 had not improved 6 months after treatment ended.

2. These 7 patients were desensitized. On average, phobias improved about three times as much in the 4 months' desensitization as they had done in the previous two years. Changes in other symptoms were less striking.

3. Another case received both group therapy and desensitization. Detailed assessment of the changes after each treatment showed that desensitization effected an immediate improvement on the phobias treated in the session. Although some of this was lost by the next week, this improvement accumulated gradually week by week and was significantly greater than that seen in group therapy.

4. The findings are discussed in relation to the indications for desensitization.

Acknowledgments

This work was made possible by a grant from the Medical Research Council. We are grateful to Dr. G. Palmai for help in treating one case; the Physicians of the Maudsley Hospital who referred patients; and to Drs. J. G. Edwards and H. H. Wolff for constructive advice about the manuscript.

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(*Received 19 December, 1966*)

https://doi.org/10.1192/bjp.114.508.323 Published online by Cambridge University Press