

## A follow-up study on short-term treatment of agoraphobia

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**Summary**—The differential effectiveness of three treatment packages for agoraphobia was tested. Patients received one of three short-term treatments: Breathing Retraining and Cognitive Restructuring, graded Self-Exposure *in vivo*, or a combination of both. No differential effects were found between the treatment conditions at posttest and at an 18 months follow-up. Improvement at follow-up assessment was associated with whether patients had further treatment during the follow-up period. No relationship was found between further improvement and demographic variables, pre- and posttest scores on psychological questionnaires or the use of medication at follow-up. Implications of these findings are examined.

### INTRODUCTION

In the evaluation of therapeutic interventions, follow-up data are essential. Jacobson, Wilson and Tupper (1988) reanalysed the outcome data from a series of 11 studies on the efficacy of exposure-based treatments for agoraphobia and concluded that treatment gains are generally maintained and, in some studies, increased over the course of a 6-month follow-up period. Similar results were reported for studies with longer follow-up periods such as 15 months (Jansson, Jerremalm & Ost, 1986), 4 yr (Emmelkamp & Kuipers, 1979), 3–6 yr (McPherson, Brougham & McLaren, 1980) and 5–9 yr (Munby & Johnson, 1980). This does not mean that all patients in these studies are completely recovered at follow-up. Jacobson *et al.* (1988) reported an average rate of clinically significant improvement at follow-up of 60%. The percentage of patients who were completely recovered was considerably lower: only 34% of the patients had little or no residual agoraphobic behavior. Less than 10% of the patients manifested clinically significant deterioration during the follow-up interval. The interpretation of recovery and improvement rates in these studies is complicated by differences in the continuation of treatment during the follow-up period. If treatment is continued, which was the case in three of the studies in Jacobson *et al.*'s reanalysis, follow-up results cannot be considered evidence for the maintenance of improvement due to the original therapeutic intervention.

In this study we will report the outcome at 18 months follow-up of a sample of 40 agoraphobic outpatients, treated with three different behavioral therapeutic programmes of short-term duration. These treatments were Breathing Retraining and Cognitive Restructuring, Self-exposure *in vivo*, or a combination of both. In line with the cognitive/psychophysiological model of panic attacks (Clark, 1986) and on account of treatment-studies based on this model (Bonn, Readhead & Timmons, 1984; Clark, Salkovskis & Chalkley, 1985; Rapee, 1985; Salkovskis, Jones & Clark, 1986), we expected that breathing retraining and the reattribution of symptoms to hyperventilation would offer agoraphobic patients a means of coping with their panic attacks. Consequently, one of our hypotheses was that exposure with additional breathing retraining and cognitive restructuring would be more effective than exposure alone. However, our posttest data did not support this hypothesis. After treatment a statistically significant improvement of target complaints and related psychological symptoms was observed, but no differences in effectiveness between the three treatment conditions were found (de Ruiter, Rijken, Garssen & Kraaimaat, 1989). For the present study we will reassess our patients to investigate whether these findings remain the same 18 months after termination. Secondly, we will examine whether patients sought additional treatment in the follow-up period and, if so, whether this influenced their scores at follow-up.

### METHOD

#### Subjects

The sample consisted of 40 agoraphobic outpatients (16 men, 24 women) who had completed a short-term treatment. The three treatment conditions consisted of eight sessions of either Breathing Retraining and Cognitive Restructuring (BRCR), Self-exposure *in vivo* (EXP), or a combination of both treatments (BRCR + EXP), and have been described in detail elsewhere (de Ruiter *et al.*, 1989). Mean age of the sample was 34.0 yr (SD = 9.2). Nineteen patients (48%) were taking psychotropic medication when treatment started. They had agreed to maintain the same dosage during the treatment period. Before treatment started, patients had been informed of the short-term and experimental nature of the study and of the fact that there would be no further therapeutic contact after the 8 weeks of treatment. However, if a patient wished, he/she was referred to other therapists or agencies after the experimental treatment. The follow-up study had not been mentioned to the patients at the end of treatment, but they were contacted by letter 18 months after the posttest. They were asked in this letter to visit the hospital for a follow-up assessment, consisting of an interview by the first author and completion of self-report questionnaires. Patients received 25 Dutch guilders for their visit. Four patients refused to participate in the study and two patients could not be traced. The 6 patients who did not participate in this follow-up study did not differ from those who did participate with regard to sex [ $\chi^2(1, n = 40) = 0.00$ , NS], age ( $t = -1.21$ , NS), duration of the disorder ( $t = 0.12$ , NS) and scores on the posttreatment measures (measures are presented in Table 1; all  $t$ -test-values  $P > 0.05$ ).

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### Measures

Each patient completed the self-report questionnaires stated below.

*Fear Survey Schedule-III (FSS-III)*. (Wolpe & Lang, 1964; Arrindell, Emmelkamp & Van der Ende, 1984.) Only the Agoraphobia subscale was used in this study.

*Phobic anxiety and avoidance scales*. (Watson & Marks, 1971.)

*Fear of Bodily Sensations Questionnaire (FBSQ)*. The FBSQ asks Ss to rate on a 5-point scale how fearful they are of each of 14 bodily sensations.

*Symptom Checklist-90 (SCL-90)*. (Derogatis, Lipman & Covi, 1973; Arrindell & Ettema, 1986.) Only the subscales Agoraphobia, Anxiety, Depression and Somatic Complaints were used in this study.

For a complete description of these measures, the reader is referred to our original report (de Ruiter *et al.*, 1989). In the structured interview at follow-up questions were asked about the patients' condition since the end of treatment, the emergence of any new symptoms, the use of medication and if further therapy had been sought.

### RESULTS

Table 1 presents mean scores and standard deviations on the self-report measures at pretreatment, posttreatment and follow-up for the three treatment conditions.

To examine follow-up effects, univariate two-factor analyses of variance (ANOVA) with repeated measures on one factor (posttreatment—follow-up) were conducted. The pretest score on a variable was used as a covariate in the analysis to control for differences between treatment groups. A significant decrease was found from posttest to follow-up for the following subscales: FSS agoraphobia [ $F(1, 29) = 10.95, P = 0.003$ ], SCL-90 agoraphobia [ $F(1, 29) = 6.15, P = 0.02$ ] and the phobic anxiety scale [ $F(1, 29) = 5.29, P = 0.03$ ]. No significant treatment condition or interaction effects were detected. Thus, the patients as a group showed continued improvement in the follow-up period but, as in our prior study, no differences between the three treatment packages were revealed.

Seven of the 34 patients (20%) deteriorated during the follow-up interval, i.e. their follow-up score was more than one standard deviation below their posttest score on one or more of the eight outcome variables. These patients did not differ significantly from the other patients with regard to sex [ $\chi^2(1, n = 40) = 1.22, NS$ ], age ( $t = 0.10, NS$ ), duration of disorder ( $t = 0.34, NS$ ) or any of the pre- or posttest measures (all  $t$ -test-values  $P > 0.05$ ). Nor did these patients continue treatment more often than the other patients during the follow-up period [ $\chi^2(1, n = 34) = 0.00, NS$ ].

With regard to our second research question, we found that 13 (38%) of the 34 patients received no further therapy after the experimental treatment. Twenty-one patients (62%) continued treatment. Five of them received psychotherapy (behaviorally or otherwise) for less than 3 months and 12 for more than 3 months; three patients were treated with medication, and one patient received breathing therapy. The group of patients who had continued therapy was not different from the group who had not, with regard to sex ( $\chi^2$ -test), age, duration of disorder or any of the pre- or posttest measures (all  $t$ -test values  $P > 0.05$ ).

To examine follow-up effects, univariate two-factor analyses of variance (ANOVA) with repeated measures on one factor (posttreatment—follow-up) were conducted. No significant condition effects (yes/no further treatment) were revealed. However, significant interaction effects (continuation of treatment  $\times$  posttest—follow-up) were found for the FSS

Table 1. Means and standard deviations on self-report measures at pretest, posttest and follow-up for three treatment groups

Self-report measures	Treatment group	Assessment phase					
		Pretest		Posttest		Follow-up	
		Mean	SD	Mean	SD	Mean	SD
FSS agoraphobia	BRCR	2.8	0.7	2.8	0.8	2.3	1.0
	EXP	3.1	0.6	2.6	1.0	1.9	0.9
	BRCR + EXP	2.7	1.0	2.2	0.8	2.0	0.9
Phobic anxiety scale	BRCR	19.6	9.2	17.3	8.3	12.7	10.6
	EXP	20.3	7.6	15.0	10.3	9.8	9.7
	BRCR + EXP	14.6	7.0	10.4	6.2	7.4	7.8
Phobic avoidance scale	BRCR	21.1	8.4	20.1	9.9	13.3	11.3
	EXP	22.2	8.2	15.4	9.7	11.2	10.7
	BRCR + EXP	17.9	9.7	10.7	8.4	9.8	9.6
Fear of Bodily Sensations Questionnaire	BRCR	32.3	9.2	27.0	11.7	13.3	11.3
	EXP	30.3	8.0	23.7	11.2	17.0	11.0
	BRCR + EXP	26.6	12.5	18.6	9.5	21.1	13.1
SCL-90 agoraphobia	BRCR	24.4	6.9	21.5	7.4	18.2	9.6
	EXP	24.8	6.6	20.9	8.2	15.1	7.9
	BRCR + EXP	20.1	6.3	16.4	7.0	14.0	5.8
SCL-90 anxiety	BRCR	30.7	10.0	28.8	11.4	22.7	11.6
	EXP	29.0	9.1	26.0	10.3	20.2	9.2
	BRCR + EXP	25.8	7.5	21.1	8.4	19.6	7.4
SCL-90 depression	BRCR	42.4	12.8	39.5	19.3	34.4	18.8
	EXP	39.0	13.1	36.8	13.8	30.0	13.1
	BRCR + EXP	30.3	12.3	27.0	13.8	23.7	7.1
SCL-90 somatic complaints	BRCR	33.0	10.5	32.5	11.5	27.6	14.0
	EXP	31.0	8.1	27.5	7.2	24.8	10.5
	BRCR + EXP	30.1	10.9	24.7	11.6	22.6	8.4

BRCR: Breathing Retraining/Cognitive Restructuring; EXP: Exposure Therapy; BRCR + EXP: Breathing Retraining/Cognitive Restructuring plus Exposure Therapy.

agoraphobia subscale [ $F(1, 31) = 12.24, P = 0.001$ ], SCL-90 agoraphobia [ $F(1, 32) = 5.30, P = 0.03$ ], SCL-90 anxiety [ $F(1, 32) = 4.28, P = 0.05$ ], the phobic anxiety scale [ $F(1, 30) = 5.72, P = 0.02$ ] and the Fear of Bodily Sensations Questionnaire [ $F(1, 32) = 5.10, P = 0.03$ ]. To gain a better understanding of the nature of the interaction, paired  $t$ -tests were performed separately for the patients with and without further treatment. The results revealed no significant differences between posttest and follow-up for the no-further-treatment group. A significant decrease from the posttest to follow-up was found on all five above-mentioned measures in Ss who received further treatment.

Fifteen (44%) of the 34 patients still regularly used psychotropic medication. No significant differences were found with regard to sex ( $\chi^2$ -test), duration of disorder, or any of the pre- or posttest measures ( $t$ -tests) between patients who did and who did not use medication. However, the mean age of patients who still used medication at follow-up was higher than of those who did not (mean ages respectively 31.2 and 39.1 yr;  $t = 2.58, P = 0.02$ ). To examine follow-up effects, univariate two-factor analyses of variance (ANOVA) with repeated measures on one factor (posttreatment—follow-up) were performed. Neither significant main effects for yes/no medication nor interaction effects were revealed. The use of medication was not associated with whether or not further treatment was sought [ $\chi^2(1, n = 34) = 0.00, NS$ ].

#### DISCUSSION

In our previous article (de Ruiter *et al.*, 1989), we concluded that Breathing Retraining and Cognitive Restructuring plus Exposure was no more effective than Exposure alone for treatment of agoraphobic symptomatology. In this follow-up study also, no differential effect of the three treatment conditions could be demonstrated. We must conclude that, at long-term as well, breathing retraining and reattribution of symptoms to hyperventilation in combination with exposure is not more effective than exposure alone. This is in contrast with a study by Bonn *et al.* (1984) who found that at 6 months' follow-up, patients who had been given breathing retraining followed by real-life exposure, showed further improvement, whereas patients treated with exposure alone were worse than at posttest.

The finding that the agoraphobic patients as a group showed continued improvement during the follow-up period is generally in line with findings from other studies in which long-term effects of behavioral treatment for agoraphobia are investigated (Marks, 1986; Jansson *et al.*, 1986; Jacobson *et al.*, 1988). An important question is which patients improve further after therapy. In our study, further improvement appeared not to be associated with sex, age, duration of disorder, or the level of complaints at pre- or posttest. A relationship was found, however, with whether patients sought further therapy after the experimental treatment. The group of patients who did so, improved further, while the patients who did not, remained at their post-treatment level.

The percentage of patients who deteriorate is higher in our study than the 10% stated by Jacobson *et al.* (1988). However, the criteria we used to define deterioration were more strict. Deterioration in our patients appeared to be associated neither with demographic variables and level of complaints at pre- or posttest nor with seeking further therapy. Whether patients used anxiolytic medication at follow-up was not related to the degree of further improvement. Our findings about the important role of whether treatment is continued in the follow-up period, and the minor part played by medication are in contrast with a study by Lelliott, Marks, Monteiro, Tsakiris and Noshirvani (1987) who found that patients who continued treatment performed worse at 5-yr follow-up compared to patients who had no further treatment. In the same study patients who regularly used psychotropic medication were more phobic than those who did not. It might be that the differences between Lelliott's study and ours are due to the differences in length of the follow-up period, 5 yr and 18 months respectively.

None of our demographic or psychopathology measures distinguished patients who did and who did not improve at follow-up. What other factors could distinguish these patients? Mavissakalian and Hamann (1987) investigated whether these patients differed in personality functioning. They found that symptomatic improvement in agoraphobic patients was accompanied by improvement in personality functioning. In the same study, it was shown that 75% of patients with low initial personality traits were responders, compared with 25% of patients with high personality traits. This suggests that personality factors may have prognostic significance in the treatment of these patients.

Finally, it may be concluded that follow-up data are important for interpreting success or failure after treatment, but that they are of limited value if it is unknown whether further therapy took place during the follow-up period.

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