UvA-DARE (Digital Academic Repository)

Treatment of obsessive-compulsive patients: The contribution of self-instructional training to the effectiveness of exposure

Emmelkamp, P.M.G.; van der Helm, M.; van Zanten, B.L.; Plochg, I.

DOI

[10.1016/0005-7967\(80\)90070-4](https://doi.org/10.1016/0005-7967(80)90070-4)

Publication date

1980

Document Version

Final published version

Published in

Behaviour Research and Therapy

[Link to publication](#)

Citation for published version (APA):

Emmelkamp, P. M. G., van der Helm, M., van Zanten, B. L., & Plochg, I. (1980). Treatment of obsessive-compulsive patients: The contribution of self-instructional training to the effectiveness of exposure. *Behaviour Research and Therapy*, 18(1), 61-66.
[https://doi.org/10.1016/0005-7967\(80\)90070-4](https://doi.org/10.1016/0005-7967(80)90070-4)

General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

UvA-DARE is a service provided by the library of the University of Amsterdam (<https://dare.uva.nl>)

TREATMENT OF OBSESSIVE-COMPULSIVE PATIENTS: THE CONTRIBUTION OF SELF-INSTRUCTIONAL TRAINING TO THE EFFECTIVENESS OF EXPOSURE

PAUL M. G. EMMELKAMP,* MIEKE VAN DER HELM, BERENDIEN L. VAN ZANTEN
and IVO PLOCHG

Academic Hospital, Department of Clinical Psychology, 9713 EZ Groningen, Oostersingel 59,
The Netherlands

(Received 3 July 1979)

Summary—Fifteen obsessive-compulsive patients were given treatment consisting of ten sessions of gradual exposure *in vivo*. For half of the patients gradual exposure *in vivo* was preceded by self-instructional training.

Treatment resulted in significant improvement on anxiety and avoidance scales, Leyton Obsessional Inventory, Self-rating Depression Scale and on ratings for anxious mood and depression. Neither the post-test nor the follow-ups 1 month and 6 months later indicated a difference between the effects of the two conditions. Self-instructional training did not enhance the effectiveness of gradual exposure *in vivo*.

Exposure *in vivo* has been shown to be quite effective in the treatment of obsessive-compulsive disorders. Controlled studies conducted in different countries have consistently demonstrated that exposure *in vivo* procedures, combined with self- or therapist-controlled response prevention, is the treatment of choice for obsessive-compulsive patients who are hindered by clear rituals (Boersma, Den Hengst, Dekker and Emmelkamp, 1976; Emmelkamp and Kraanen, 1977; Marks, Hodgson and Rachman, 1975; Rabavilas, Boulougouris and Stefanis, 1977; Röper, Rachman and Marks, 1975).

Treatment by exposure and response prevention focuses on a modification of both passive and active avoidance behaviour. No attempt is made to alter the cognitions of obsessive-compulsive patients directly. However, cognitions are presumably of paramount importance in mediating the overt compulsive behaviour. For instance, most washing rituals are mediated by unrealistic beliefs about the possibility of contamination; obsessions about harming oneself or others may lead to extensive checking rituals. Patients with extensive cognitive compulsions seem to have little benefit from our treatment through exposure *in vivo* and response prevention alone (Emmelkamp and Kraanen, 1977). Therefore, one might assume that a direct modification of cognitions may be a valuable adjunct to treatment by exposure *in vivo* and response prevention.

Cognitive modification procedures have been found to be quite effective in the treatment of volunteer subjects with minor fears (Emmelkamp, 1979). However, only one controlled clinical trial (Emmelkamp, Kuipers and Eggeraat, 1978) has been conducted to date. Cognitive modification for agoraphobics was found to be far less effective than prolonged exposure *in vivo*. No controlled study demonstrating the usefulness of cognitive modification for obsessive-compulsive patients has been published.

The aim of the present study was to investigate whether cognitive modification (e.g. self-instructional training) would enhance the effectiveness of gradual exposure *in vivo* plus response prevention.

METHOD

Design

The patients were assigned at random to two conditions: (1) exposure *in vivo* and (2) self-instructions and exposure *in vivo*.

* Requests for reprints can be addressed to Paul M. G. Emmelkamp, Academic Hospital, Department of Clinical Psychology, Groningen, The Netherlands.

Fig. 1. Design.

The first three sessions were devoted to the pretest and preparation for treatment. In both conditions two relaxation sessions followed. Then, ten treatment sessions followed. Sessions were held on the average twice a week. After treatment a posttest followed, and follow-up I took place 1 month later. No treatment was provided during this period, but this rule was broken in one case because of a crisis. Six months after the posttest follow-up II was held. In a number of cases treatment had been continued during this period. The main features of the design are summarized in Fig. 1.

Treatment

Patients were instructed not to take any anxiety reducing or anti-depressant drugs during the experimental trial. In two cases it proved to be impossible for the patients to stop taking medicines altogether, but the amount taken was reduced.

The first three sessions were devoted to collecting information. An inventory was drawn up for each patient of the stimuli which might trigger passive and active (e.g. compulsive rituals) avoidance behaviour. Next, a hierarchy was constructed with the help of a fear thermometer. The degree of exposure and the degree of response prevention were together structured into one hierarchy. Treatment in both conditions took place at the patient's home. Each session lasted 2 h. Family members were instructed to be absent during the sessions.

Sessions four and five consisted of progressive relaxation training (Wolpe and Lazarus, 1966). Relaxation training is an integral part of self-instructional training (Meichenbaum, 1975) and is conceptualized as a coping response. Although this procedure was only necessary for the self-instructional condition, the patients in the exposure condition also received relaxation training in order to keep both conditions identical apart from cognitive modification.

(1) *Exposure in vivo*. At the start of each session patients had to relax for half an hour. Then, 90 min exposure *in vivo* followed. The exposure treatment was the same as in our earlier studies (Boersma *et al.*, 1976; Emmelkamp and Kraanen, 1977) and consisted of gradual exposure plus gradual response prevention. The items of the hierarchy were practiced *in vivo*, starting with the easiest in the company of the therapist. As a rule the patients themselves determined the speed at which they worked through the hierarchy. If a patient tried to avoid exposure by not choosing new items for practice, some pressure was exerted to induce the patient to carry on practicing. If the whole hierarchy of items had been worked through before the end of treatment, practice of the most difficult items was repeated during the last sessions. The patients were not allowed to perform compulsive rituals during the sessions.

Patients were instructed not to avoid the situations which had been practised and not to perform the associated compulsive rituals (self-imposed response prevention) in between treatment sessions.

(2) *Self-instructional training and exposure in vivo*. The first half-hour of each session was devoted to self-instructional training. Patients were trained to emit more productive self-statements. After a short relaxation period the patients cognitively rehearsed self-instructional means (including relaxation) of handling anxiety by means of an imagination procedure. The therapist asked the patient to imagine situations described by the therapist as vividly as possible. The patient was then instructed to determine how anxious he felt, to become conscious of his negative self-statements and then to replace them by productive self-statements and relaxation. Situations which were cognitively rehearsed were taken from the hierarchy. Both (1) preparing, (2) confronting, (3) coping and (4) reinforcing self-statements were practiced (Meichenbaum, 1975).

After the self-instructional phase, exposure *in vivo* followed. The exposure treatment was conducted along the same lines as the exposure-only condition with the important addition that patients were instructed to use their productive self-statements during practice *in vivo*: items which had been cognitively rehearsed were used during exposure *in vivo*.

Therapists

Therapists were five advanced clinical psychology students who had received training in behaviour therapy and one clinical psychologist. Therapists applied both treatments. Twice a week group sessions were held. Here, problems which occurred during the treatments were discussed. The therapists were supervised by the senior author.

Patients

Altogether 21 obsessive-compulsive referrals were considered for this study. Four patients were not included in the study. In three of these the obsessive-compulsive complaints were judged to be too mild. A fourth patient, judged to be suitable, was unwilling to accept the treatment requirements after the first treatment session, thus leaving 17 patients. Two patients dropped out (after eight and nine treatment sessions respectively). In both cases the patients' partner wanted the patient to stop treatment. In one of these, the husband could not accept that his wife was visited by a male therapist in their home; treatment was continued outside the experimental trial, including conjoint marital therapy. Thus, 15 patients completed the project, eight in the exposure-only condition and seven in the self-instruction and exposure condition. Five of the patients who completed the project were men and 10 were women. Their average age was 37, the range 22–68 yr. The average duration of the complaint was 9 yr, the range 1–50 yr. Unfortunately, as a result of the random assignment of patients to conditions, the self-instructional training condition contained no men.

Assessments

Pretest, posttest, follow-up I and follow-up II were carried out by patient and therapist. In addition an independent assessor, a clinical psychologist rated the patient before and after the treatment. As in our previous studies, the assessor was blind with respect to the treatment patients received.

(1) *Anxiety and avoidance scales*. Patient, therapist and assessor rated five situations on 0–8 scales for anxiety and avoidance (Watson and Marks, 1971). The scores for the situation relevant to the main compulsive problem were calculated separately, the scores for the other compulsive problems were averaged.

(2) *Anxious mood and depression*. Therapist and assessor rated the patient on 0–8 scales for anxious mood and depression (Watson and Marks, 1971). The patients also filled in the following questionnaires:

(3) *Leyton Obsessional Inventory*. (LOI—Cooper, 1970). The scales results in four scores: (1) Symptom; (2) Trait; (3) Resistance and (4) Interference.

Table 1. Treatment effects

		Pretest		Posttest		Follow-up I		Follow-up II		Time-effect	
		$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	F	$p <$
Anxiety											
main	P	5.60	1.50	2.93	2.60	2.67	1.99	2.27	2.34	14.57	0.001
	T	6.47	0.83	2.73	2.63	2.73	2.19	2.07	2.12	20.62	0.001
	O	7.53	0.74	3.33	2.70	—	—	—	—	37.04	0.001
other	P	4.40	1.55	1.60	1.55	1.60	1.99	1.07	1.53	30.22	0.001
	T	5.40	1.12	1.27	1.16	1.47	1.68	1.27	1.33	77.93	0.001
	O	6.07	1.62	2.00	1.93	—	—	—	—	84.58	0.001
Avoidance											
main	P	6.33	1.84	2.40	2.82	3.13	3.00	2.87	3.16	10.05	0.001
	T	7.20	1.21	2.60	2.64	3.33	2.97	2.93	3.26	12.67	0.001
	O	7.80	0.56	3.33	3.31	—	—	—	—	29.14	0.001
other	P	6.07	1.33	1.27	1.39	1.73	1.98	1.60	1.45	60.30	0.001
	T	6.80	1.26	1.20	1.21	1.87	1.73	1.27	1.39	84.16	0.001
	O	7.13	0.83	1.67	1.76	—	—	—	—	103.85	0.001
Anxious	T	4.40	1.80	2.73	1.94	3.07	1.79	1.80	2.08	14.44	0.001
Mood	O	6.13	1.30	3.40	2.03	—	—	—	—	18.00	0.001
Depression	T	3.50	2.36	2.20	1.93	2.13	1.96	1.20	1.47	7.56	0.001
	O	3.07	2.32	1.87	1.60	—	—	—	—	3.24	0.01
L.O.I.											
Symptom		29.07	6.30	17.20	9.46	16.93	8.66	15.29	8.89	17.77	0.001
Trait		12.40	4.20	8.73	3.99	8.20	4.71	8.36	4.88	7.52	0.001
Resistance		45.60	21.58	25.53	21.47	27.33	20.56	20.57	16.20	15.50	0.001
Interference		43.20	24.90	20.87	21.51	20.60	20.93	16.14	17.95	17.28	0.001
S.D.S.		59.07	11.53	48.27	14.05	51.13	14.30	46.71	14.21	8.30	0.001

P = patient; T = therapist; O = independent observer.

$n = 15$.

(4) *Self-rating Depression Scale*. (SDS—Zung, 1965) Range 23–92. Versions adapted for use in the Netherlands were used.

RESULTS

The data, presented in Table 1 and Fig. 2, were analysed by two-way analyses of variance with repeated measures. The analyses revealed a significant time effect on all variables (see Table 1).

A significant difference between groups was found on one variable only: Avoidance, main compulsion, as rated by the assessor ($F = 5.50$, $p < 0.05$). Newman-Keuls test revealed that exposure was superior to self-instructional training on the posttest. No significant interaction effects were found.

Post hoc analyses for the time effect (Newman-Keuls tests) revealed that the pretest means on the one hand differed significantly from the means at both posttest, and follow-up I and follow-up II on the other. No significant differences were found between the means at posttest, follow-up I and follow-up II. This picture, i.e. improvement in between pretest and posttest and no significant differences between posttest and follow-ups was found for all variables except for anxious mood as rated by the therapist. Here, not only a significant decrease was found between pretest and posttest, but also between follow-up I and II ($p < 0.05$).

DISCUSSION

Treatment led to both statistical and clinically significant improvements. These improvements were not only found on measures for the obsessive-compulsive behaviour (anxiety and avoidance scales and Leyton Obsessional Inventory) but the effects of treatment generalized to anxious mood and depression. The results are roughly comparable to those achieved in earlier experimental trials into the effects of exposure *in vivo* by us (Boersma *et al.*, 1976; Emmelkamp and Kraanen, 1977) and by other workers (Marks, Hodgson and Rachman, 1975; Rabavilas, Boulougouris and Stefanis, 1977; Röper, Rachman and Marks, 1975). However, the improvement of depression (as measured by the Self-rating Depression Scale) found in both the present study and in the studies of

Fig. 2. Contributions of self-instructional training.

Boersma *et al.* (1976) and Emmelkamp and Kraanen (1977) was not revealed in the other studies. It should be noted that the assessment of depression varied from study to study which makes cross-study comparisons rather difficult. The amelioration of depression after treatment by exposure *in vivo* suggests that depression was caused by the obsessive-compulsive problems. However, this does not apply to all patients. For instance, one patient who had been treated successfully with respect to their obsessive-compulsive problems remained so depressive that hospitalization was thought to be necessary. Thus, the relationship between depression and obsessive-compulsive behaviour remains unclear and deserves further study.

Self-instructional training did not enhance the effectiveness of gradual exposure *in vivo*. Only on one variable (avoidance, main compulsion, as rated by the assessor) a between group difference was found, but this was in favour of the exposure-only condition. The same trend was found on avoidance main compulsion as rated by both patient and therapist, but the difference between groups did not reach statistical significance. Presumably, time devoted to self-instructional practice during the exposure *in vivo* phase had slowed down the tempo in which exposure *in vivo* had been carried out.

The meagre results of self-instructional training corroborate the results of the Emmelkamp *et al.* (1978) study with agoraphobics, in which cognitive modification (including self-instructional training) was found to produce no clinically significant effects.

The results of both studies, conducted on clinical patients, contrast with those of analogue studies with volunteer students as subjects. In the latter studies cognitive modification was found to be quite effective. The difference in outcome between clinical studies and analogue studies clearly demonstrate the necessity of testing therapeutic procedures with clinical patients (Emmelkamp, 1979).

One important difference between analogue studies and clinical studies might be the degree of anxiety experienced during exposure. In the present study several patients questioned the usefulness of the self-instructional training, since they did not experience that their positive self-statements were helpful during exposure *in vivo*. In spite of their attempts at controlling their anxiety they became as anxious as before. This suggests that cognitive modification procedures might work only with patients who experience relatively low-levels of arousal.

Obviously, on the basis of this study *no* conclusions can be drawn with respect to the effects of other cognitive procedures than self-instructional training with obsessive-compulsives. Although exposure *in vivo* does not directly focus on a modification of cognitions, such a modification nevertheless is achieved with some patients. The same spontaneous change in cognitions is found with agoraphobics treated by exposure *in vivo*. It seems that for agoraphobics the anxiety reduction during exposure is often sufficient to let them change their unproductive thoughts, while this proves to be insufficient for a number of obsessive-compulsive patients. Obviously, one can hardly expect that a patient, who believes that someone unknown to him may die unless he carries out checking rituals, will change these unrealistic beliefs after the experiencing of anxiety reduction during treatment by exposure.

The optimum duration of an exposure session and the optimum number of sessions are still unknown. As can be seen in Fig. 2, a slight but non-significant relapse was observed at one-month follow-up on most measures in the exposure condition. This suggests that 10 sessions of 90 min exposure are too short to result in lasting improvements with severe obsessive-compulsive patients. For most patients ($n = 12$) treatment was continued after follow-up I. The mean number of sessions between follow-up I and follow-up II was 14.7 (range 0–47). With most patients treatment involved further exposure *in vivo*, but a change from therapist controlled exposure to self-controlled exposure was often found to be necessary. Besides further treatment by exposure, in a number of cases treatment was directed to other problems of the patients. Five patients received additional assertive training and with two patients conjoint marital therapy was conducted. In our opinion, in a number of cases the obsessive-compulsive complaints play a functional role in the relationships of patients.

Acknowledgements—The authors are grateful to the independent observer Frans Albersnagel and to B. Kohl and R. van Boven for their assistance in the treatment of the patients.

REFERENCES

- BOERSMA K., DEN HENGST S., DEKKER J. and EMMELKAMP P. M. G. (1976) Exposure and response prevention in the natural environment: A comparison with obsessive-compulsive patients. *Behav. Res. Ther.* **14**, 19–24.
- COOPER J. (1970) The Leyton Obsessional Inventory. *Psychol. Med.* **1**, 48–64.
- EMMELKAMP P. M. G. (1979) The behavioral study of clinical phobias. In *Progress in Behavior Modification* (Edited by M. HERSEN, R. M. EISLER and P. M. MILLER), Vol. 8. Academic Press, New York.
- EMMELKAMP P. M. G. and KRAANEN J. (1977) Therapist controlled exposure *in vivo* vs self-controlled exposure *in vivo*: A comparison with obsessive-compulsive patients. *Behav. Res. Ther.* **15**, 491–495.
- EMMELKAMP P. M. G., KUIPERS A. and EGGERAAT J. (1978) Cognitive modification vs prolonged exposure *in vivo*: A comparison with agoraphobics. *Behav. Res. Ther.* **16**, 33–41.
- MARKS I., HODGSON R. and RACHMAN S. (1975) Treatment of chronic obsessive-compulsive neurosis by *in vivo* exposure. *Br. J. Psychiat.* **127**, 349–364.
- MEICHENBAUM D. H. (1975) Self-instructional methods. In *Helping People Change* (Edited by F. H. KANFER and A. P. GOLDSTEIN). Pergamon Press, New York.
- RABAVILAS A. D., BOULOUGOURIS J. C. and STEFANIS C. (1976) Duration of flooding sessions in the treatment of obsessive-compulsive patients. *Behav. Res. Ther.* **14**, 349–356.
- RÖPER G., RACHMAN S. and MARKS I. Passive and participant modelling in exposure treatment of obsessive-compulsive neurotics. *Behav. Res. Ther.* **13**, 271–279.
- WATSON J. P. and MARKS I. (1971) Relevant and irrelevant fear in flooding: A cross-over study of phobic patients. *Behav. Ther.* **2**, 275–295.
- WOLPE J. and LAZARUS A. A. (1966) *Behavior Therapy Techniques. A Guide to the Treatment of Neuroses*. Pergamon Press, Oxford.
- ZUNG W. K. (1965) A self-rating depression scale. *Arch Gen. Psychiat.* **12**, 63–70.