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Implosion (Flooding)—a New Treatment for Phobias

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Summary: A new technique is described for the treatment of phobic patients which may be more effective than other available methods to date. Three out of four patients treated by implosion (flooding) became almost symptom-free after a mean of 14 sessions and remained so over six-and-a-half months' follow-up. The mechanism of action of the method is not yet clear.

Introduction

A decade ago the introduction of desensitization by Wolpe (1958) marked an important milestone in the treatment of phobic disorders. The technique, however, is time-consuming and only partly effective (Gelder *et al.*, 1967; Marks, 1969). Recently the different technique of implosion, or flooding, has also been shown to reduce avoidance behaviour in volunteers (Kirchner and Hogan, 1966; Hogan and Kirchner, 1967), and early indications suggest that it might be a more potent treatment than desensitization.

The present paper is a preliminary report on results of implosion in psychiatric patients. The only other report of its application in phobic patients is a single case report by Malleon (1959).

Method

In desensitization treatment the patient is taught to relax while slowly re-entering the phobic situation first in imagination and then in real life, the anxiety being kept to a minimum at all times. By contrast, in flooding treatment the patient is instead asked to enter the worst possible phobic situation and to experience the fear at maximum intensity for up to an hour until he is no longer capable of experiencing further fear. The procedure is first done in imagination and then in real life. In successive sessions the patient finds it increasingly difficult to feel frightened in the phobic situation until finally he can enter it with equanimity. As an example, a patient with a spider phobia might have two or three hour-long sessions a week, as follows: she would sit in a comfortable chair and be asked to imagine as vividly as possible that she was alone in a room in which there were numerous black hairy spiders which surrounded her on all sides and began to crawl up her legs and arms and bite her and enter her mouth and nose, while she screamed uncontrollably and helplessly. The therapist would maintain a running commentary on the scenes she was to

imagine for the full hour, aiming to produce maximum anxiety as long as possible. Similarly, agoraphobic patients were asked to imagine themselves travelling in public places while feeling terrified, fainting, and being ridiculed by family and strangers.

The degree of phobic anxiety was judged by the patient's behaviour—for example, by grimaces and clenching of fists—by the patient's self-report, and by continuous monitoring on a polygraph of galvanic skin resistance and heart rate during the session. As soon as anxiety appeared to be diminishing new variations of the phobic scene were introduced into the fantasy material. At the end of the session the patient was asked to repeat to herself at home those of the fantasied experiences in therapy which had produced anxiety during the session. After a few sessions on these lines in fantasy the patient lost her anxiety to the fantasied scenes and was then asked to re-enter the phobic situation in real life, both by herself and in the presence of the therapist—for example, when a patient with a spider phobia was shown a spider by the therapist she would be asked to touch it immediately, and was told that it was a dangerous creature which would bite her slowly and painfully, etc.

Before treatment began all patients were told that the treatment was experimental, that it would be unpleasant at first, and that they were free to terminate any session at any time, but that for the treatment to be effective it was necessary for them to experience fear as long as possible until it became tolerable.

All patients were taken off drugs during treatment by implosion.

Experimental Basis of the Treatment

Conditioned avoidance responses in animals are in some ways paradigms of human phobias and are very hard to extinguish unless the avoidance response is blocked (Baum, 1966). Phobic patients usually avoid the phobic situation as much as possible, or if placed in it will attempt to escape immediately. There is thus little opportunity for phobic patients to learn that prolonged exposure to the phobic situation will cause no harm, just as conditioned avoidance responses prevent animals from learning that harmful consequences may not follow exposure to the conditioned stimulus. The only way to produce this learning is by preventing the avoidance responses from being made, thereby ensuring that the animal is placed in prolonged contact with the conditioned stimulus without noxious consequences ensuing. Flooding, or implosion, can be seen as analogous in certain ways to this procedure.

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The Patients

Four patients were treated, three of them on an outpatient basis.

Case 1.—A man aged 41 had had agoraphobia and travel phobia since the age of 28 but without current free-floating anxiety. Over the past four years he had been unable to go more than 150 yards (140 m.) away from home by himself or to go to cinemas or theatres, nor was he able to travel by any means of public transport. He could, however, drive his own car up to 45 miles (72 km.) away from home.

Case 2.—A man aged 42 had had agoraphobia since the age of 26, and had been taking high doses of sedative drugs and alcohol over the past eight years. He avoided travel by any public transport, and for the previous six months even with excessive sedation had been unable to go to work or leave his house.

Case 3.—A woman aged 23 had had a severe phobia of spiders since the age of 5. She came for treatment because she was due to marry and feared that the spider phobia might prevent her from looking after children.

Case 4.—A woman aged 34 had had a fear of herself and other people vomiting since the age of 17, together with moderate free-floating anxiety. Over the past two years the fear that either she or her husband would be sick at night was so intense that she was often kept awake all night.

Results

Patients rated their phobic and other symptoms twice weekly on scales described by Gelder and Marks (1966), and careful clinical assessment was made at each session.

The course of the main phobia is seen in Fig. 1. It is of some interest to compare results in the four patients who were treated by implosion with those which were obtained in an earlier series of 16 phobic outpatients who were treated by desensitization (Gelder *et al.*, 1967). The patients who were treated by implosion showed steady improvement in their main phobia and other phobias until after eight weeks' treatment they were considerably improved, and this improvement was maintained over the next four months' follow-up. Though improvement was faster and greater than in patients who were treated in another study by desensitization, it must be emphasized that this comparison is not controlled. Furthermore, implosion was

given twice weekly, whereas desensitization was given only once a week in the series displayed in Fig. 1.

FIG. 1.—Course of main phobia. Patients' rating.

Three of the four imploded patients rated their main phobia as normal—that is, score 1—12 weeks after treatment began (compared with 2 out of 16 desensitized patients in the earlier series who reached the same score at a later phase of treatment). One of the four imploded patients remained unchanged in her ratings after slight initial improvement. This was the woman (Case 4) with the fear of vomiting who also had moderate free-floating anxiety.

Clinical assessment confirmed that three out of the four imploded patients showed definite improvement. One (Case 1) had 16 sessions of implosion (14 in fantasy and two in practice). Improvement began soon after the first seven sessions, which included the two sessions in practice; he became able to travel alone and enjoy holidays, which he had not done for 10 years, and his work became more satisfactory. His improvement continued until last seen at seven months' follow-up, at which time he was free of phobias. The second patient had 16 sessions of implosion (nine in fantasy and seven in practice). He became able to travel by bus after four sessions in fantasy as an inpatient and later continued treatment as an outpatient because he was not able to travel and go back to work. He enjoyed his leisure time, became more confident,

FIG. 2.—Case 2. Heart rate and galvanic skin resistance during visualization of a phobic fantasy (A and C) and of a neutral fantasy (B and D).

and no longer felt miserable. Improvement was maintained at five months' follow-up. The third patient had seven sessions of implosion (two in fantasy and five in practice). The main changes occurred after the fifth session (third in practice), during which she was able to pick up a spider and have it crawling on her hand. She married and looked forward to having children. At eight months' follow-up she remained able to pick up a live spider without fear. The fourth patient had 18 sessions of implosion (16 in fantasy and two in practice). Minor transient changes occurred which did not last. This patient had shown more free-floating anxiety at the start of treatment than the other three patients (a mean of 2.8 against 1.7 on a 1-5 self-rating scale). At six months' follow-up she showed the same picture she had presented before treatment began.

Physiological changes paralleled clinical ones, and are seen in detail for Case 2 in Fig. 2. Fig. 2 A shows the galvanic skin resistance and heart rate during visualization of a phobic fantasy. The periods during which the fantasy was held are indicated by the solid black lines. Heart rate increased during this period, as did spontaneous fluctuations in skin resistance. In contrast there were no changes during visualization of a neutral fantasy (Fig. 2 B). After six sessions of implosion the same phobic fantasy as in Fig. 2 A no longer produced any tachycardia or increase in fluctuations of galvanic skin resistance (Fig. 2 C), while the neutral fantasy again produced no changes (Fig. 2 D). To minimize the influence of habituation the examples on each of the two occasions are chosen from similar points on the patient's polygraph record.

Discussion

The main point of this preliminary report is that three out of four patients who were treated by implosion showed pronounced improvement, and this was greater than that usually obtained with the most effective treatment of phobias to date—namely, desensitization. These results warrant a proper con-

trolled trial of implosion, but are only suggestive of its value, since the effects of enthusiasm and unwitting modelling by the therapist may also have played a part. It is not clear how much improvement was due to implosion in imagination and how much to implosion in the real life situation, and whether there is not an optimum balance in the way implosion should be given. The most interesting question of all is whether implosion is a special form of abreaction or whether it constitutes a specific learning experience. All these problems require to be worked out in future controlled trials.

The two agoraphobic patients had received much treatment elsewhere to no avail and were not considered particularly easy candidates for desensitization. The spider-phobic patient would probably have responded anyway to desensitization. The only patient with free-floating anxiety did badly. This would be expected with desensitization as well, and suggests that though implosion might eventually be a faster treatment for some patients who would in any case respond to desensitization it may not be applicable to patients who are unsuitable for desensitization—that is, those with free-floating anxiety.

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Clinical Significance of Skin Reactions to Mite Extracts in Children with Asthma

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Summary: The mite *Dermatophagoides pteronyssinus* has been identified in dust from the houses of children in Birmingham suffering from asthma. Skin tests were carried out on 150 asthmatic children with extracts of *D. pteronyssinus*, of the related species *D. farinae*, of other mites found in house dust, and of crude house dust. Though positive reactions to *D. pteronyssinus* were obtained more frequently and were of greater size than those to the other extracts, it was considered that *D. farinae* is a suitable substitute for *D. pteronyssinus* for skin testing.

In further tests on 302 asthmatic children with mite extracts and with extracts of allergens obtained commercially reactions to the former extracts were much more common than reactions to the latter.

Major skin reactions (weals with diameter of 5 mm. or more) were present in 77% of children with a history of

perennial asthma and house-dust sensitivity. Hence allergy to house-dust mites, particularly *D. pteronyssinus*, is of considerable importance in childhood asthma, and further study of the ecology and control of the mites in dust is desirable.

Introduction

House dust has long been known to cause sneezing and wheezing in sensitive subjects (Storm van Leeuwen, 1922; Maunsell, 1960). In Birmingham, house dust appears to be the most common allergen precipitating asthma in children as judged by the clinical pattern and skin tests with crude dust extracts (Smith, 1960).

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