

## Simple techniques to treat medical phobias

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### Summary

**Participant modelling, a behaviourally-orientated treatment technique, is an effective method of treating phobias associated with minor medical procedures or apparatus such as needles or intravenous catheters. The steps in this technique are described and two cases of severe needle phobias successfully treated with participant modelling are presented to illustrate further its application.**

PHOBIAS associated with minor medical procedures or apparatus such as needles and intravenous catheters can be a nuisance and even life-threatening when they present an obstacle to a necessary surgery or diagnostic procedure. In an epidemiological study of common fears and phobias, Agras, Sylvester and Oliveau (1969) found a prevalence of reported injection phobias of 140/1000 population at the age of 20 years. The prevalence sharply declined after this age suggesting that these phobias are relatively short-lived in the general population. From the response to questions concerning treatment obtained from the study, they found that an estimated 57/1000 individuals had seen a physician about a severe fear or phobia of a medical procedure. The actual incidence of phobias of medical procedures requiring psychiatric intervention is unknown but most consultation services see several such cases every year.

There is a paucity of literature on the aetiology of medical phobias in general. In his classic analysis of Hans, a child suffering from multiple phobias, Freud (1919) described what has become the standard psychoanalytical viewpoint on the origins of phobias. Freud stated that phobias arise from anxiety displaced from an internal drive and a realistically threatening external stimulus on to an otherwise neutral phobic object. On the other hand, Eysenck

and Beech (1971), representative of the learning theorists, view phobia as learned and have described various ways in which this could occur. The treatment of phobias has ranged, in accordance with the theoretical persuasion of the therapist, from long-term analysis to rapid behaviourally orientated interventions. In several controlled studies, the behaviourally orientated therapies have been demonstrated to offer a quicker, cheaper and more effective treatment for phobias in patients with no other psychiatric pathology than other therapies. Thus, in a hospital setting, the behavioural techniques offer the most reasonable approach to treat phobias.

The behavioural therapies for phobias are generally classified as either 'flooding' or 'desensitization'. The difference between these approaches is primarily one of degree of exposure to the feared situation. In flooding, the individual is directly faced with the situation that provokes the distress and continues to face the situation or object until the fear is eliminated, while in desensitization, the individual is gradually exposed to the feared situation or object, taking one step at a time and usually not facing the feared situation until he has mastered and feels comfortable with the preliminary steps. Other related techniques that share the common element of exposing the patient to the feared situation include implosion, a variation of flooding in which the patient faces his feared situation in a series of imagined situations; therapist modelling, in which the therapist interacts with the feared object or situation and gradually encourages the patient to do the same; and shaping, usually using social reinforcement, in which the therapist reinforces the patient's gradual approach to the feared object or situation. All of these techniques have been applied to medical phobias or phobias that would appear to be analogous treatment problems to medical phobias. For instance, in less than five sessions, Katz (1974) used systematic desensitization to treat a haemodialysis phobia, Wijesinghe (1974) used flooding with

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hypnosis to overcome a vomiting phobia, Turnage (1975) used *in vivo* systematic desensitization to treat a hypodermic needle phobia, and others have used a combination of these methods rapidly to treat other phobias (Nesbitt, 1974; Mahoney, 1971; Naud, Boisvert and Lamontagne, 1973; Nimmer and Kapp, 1974).

Several authors have argued that the crucial variable in all of these procedures is length of exposure to the feared object (Marks, 1973; Staub, 1968; Leitenberg *et al.*, 1974). Although the procedure seems to be a useful method of persuading a phobic subject to encounter the feared situation, the particular elements of the procedure, such as relaxation in systematic desensitization, may not be as important as the length of exposure to the feared situation (Daniels, 1974). Freud, (1919) stressed the importance of having patients experience these feared situations. 'One can hardly ever master a phobia if he waits till the patient lets the analysis influence him to give it up... one succeeds only when he can induce them through the influence of the analysis to... go about alone and struggle with the anxiety while they make the attempt'. From this perspective, we now have a battery of procedures that are helpful in encouraging people to 'struggle with the anxiety'. While some of these procedures (e.g. hypnosis) require considerable skill and training, a recently developed method called participant modelling offers a simply learned, effective procedure quite suitable for treating medical phobias. In this procedure, developed by Bandura, Jeffery and Wright (1974), the core ingredients are a series of steps that are designed to achieve what Bandura considers to be the most important vehicle of extinction (or elimination of fears), 'successful performance in presence of the feared object or situation'.

In this procedure, the therapist arranges a learning situation for the patient in which he is confronted with aspects of his fears one small step at a time. The steps in participant modelling are:

(1) *Instruction*. The patient is given information about the feared object or situation in a way that demonstrates the fear to be unfounded. At the same time, the desensitization procedure is described and the positive expectation is given the patient that the procedure will work without inducing undue anxiety. He is told to ask the therapist to wait if he is asked to encounter a situation that he finds frightening.

(2) *Response modelling*. The therapist handles the feared object and interacts with it in a way to demonstrate that the patient's fear is unfounded.

(3) *Joint performance with the therapist*. The patient is encouraged by the therapist to join with him in a series of interactions with the feared object starting with situations that provoke relatively little anxiety, and ending with accomplishment of the

feared behaviour. These sub-steps or response induction aids can be increased length of time of exposure to the feared object, inclusion of protective devices, e.g. gloves, and exposure to a series of related but much less fear-inducing objects, e.g. smaller needles.

(4) *Self-directed practice*. The patient is encouraged to practise his new skills or fearlessness alone and in varied settings to ensure that he can generalize his learning to new situations and that he does not attribute his sudden braveness to either the therapist or the therapeutic situation.

Information alone during the instruction step is sufficient to allow some patients to perform their feared act. For others, seeing the therapist model or act out the feared situation will reduce the fears sufficiently for their own participation. Still other patients need a battery of response induction aids or sub-steps in the desensitization process carried out with the help of the therapist to enable them to engage in the feared behaviour.

Bandura has used this technique to eliminate snake phobias rapidly and completely; furthermore, the success in the laboratory situation seems to generalize to other situations. Bandura (Bandura, Jeffery and Gajdos, 1975) feels that the overall goals of a treatment should not only be to extinguish a fear but to have the patient develop a sense of self-competency, transfer the extinction to other areas and treatment settings and acquire a generalizable skill for coping with fear-provoking situations. Although his recent studies have suggested that some subjects do use the participant modelling method as a general skill, in a medical setting, the extinction and generalization of this extinction to other treatment settings is usually a sufficient goal. The following two cases illustrate the use of participant modelling rapidly to extinguish severe needle phobias.

#### Case history no. 1

A 47-year-old white male with terminal cancer was referred to the Stanford consultation service when he reportedly developed bradycardia (pulse <45/min) and hypotension (systolic BP, 80 mmHg), diastolic BP, uncertain) when blood was drawn. The referring physicians kept an electrocardiogram (ECG), ammonium salts and atropine at the bedside in case he became hypotensive during a procedure. His general practitioner had reported similar episodes and always performed minor procedures in the emergency room in case the patient became hypotensive or bradycardic.

#### Past history

The patient had had an extreme fear of needles for as long as he could remember. He avoided most injections as a child and was given oral medication

whenever possible. He screamed and on several occasions fainted when given anaesthetic injections in the dentist's surgery. At the age of 20 years, while in the Navy, a dentist referred him for psychiatric help for his needle phobia because his dental work was being delayed. He saw the psychiatrist for eight to ten sessions of insight-orientated crisis intervention which helped somewhat so that the dental work was completed, but several months later, the patient reacted with terror and fainted when blood was being drawn for a marital blood test. In 1958, he had a left nephrectomy for renal carcinoma and was heavily sedated before an intravenous needle was inserted. Post-operatively, he felt extremely uncomfortable with the needle in his arm and again fainted when injections were given. He was put on coumarin 7 years ago, following a myocardial infarction and fainted each time blood was drawn for a prothrombin test. The necessity for multiple invasive diagnostic therapeutic and palliative procedures, which involve the use of needles, had been extremely difficult on the patient, as well as his medical team.

#### *Treatment course*

The patient was treated using the participant modelling procedure outlined above.

*Instruction.* The treating resident explained the procedure briefly to the patient, told him it would take approximately 1 hr and that he would be asked to touch and experiment with some of the intravenous equipment, syringes and needles. He was told that after this hour he would feel more comfortable with these items and blood-drawing, and that the treatment would culminate with the therapist drawing his blood.

The patient was brought into a treatment room and an ECG machine was attached. His attending physician then entered the room and drew blood for haematocrit while the patient's vital signs were being monitored. One of the experimenters stood outside the room during this procedure and heard the patient screaming and protesting.

*Response modelling and joint performance.* Five minutes later the other experimenter entered the room and began the treatment procedure. He brought a tray with packaged tubing, syringes, tape, local anaesthetics, gauze, alcohol swabs, needles, etc., into the treatment room and asked the patient if he was comfortable with the instrument-filled tray in the room. (If the patient had reported discomfort, the therapist would have taken the tray out of the room and introduced one item at a time.) The therapist then picked up the packaged materials one at a time, identified them, and handed them to the patient, each time pausing until the patient felt comfortable touching the packages. The patient was asked to

remove the articles from the packages, which he did slowly. He was then asked to examine progressively larger covered needles. When the patient was able to accomplish these tasks comfortably, the therapist removed the cover from a needle and handed it to the patient. This was done with progressively larger sized needles. When the patient no longer felt anxious holding a syringe with a bared needle, the therapist touched the needle to his own skin. The patient was able to copy this action and proceeded to rub the needle up and down his arm. Then the therapist put a needle on a second syringe and filled it with procaine. The patient held the medication-filled syringe until he felt at ease. The experimenter then injected procaine into an orange and asked the patient to copy his actions, which he did several times without reporting any fear. He was able to use progressively larger needles to inject the orange. Then the experimenter attached a tuberculin-sized needle to a syringe and lightly stroked the back of his arm and then stuck it in the back of his arm. The patient was then asked to, and was able to have this done to him. The experimenter then put a larger needle on the syringe and said that he was going to draw blood. He asked the patient to watch as he applied a tourniquet and stuck the needle into the patient's arm to draw blood. The patient complained that he didn't like the procedure and looked away. The therapist gently coaxed him to look at the needle in his arm which the patient was able to do. Approximately 1 hr was needed for the entire procedure.

To see if the treatment had generalized, the other experimenter told the patient that he wanted to see if he could tolerate blood being drawn by someone else. The patient protested that this was unexpected, but reluctantly agreed. The next experimenter then quickly drew the patient's blood in the standard manner. The patient complained but his protestations were mild compared to those of the baseline blood drawing. *Self-directed practice* was not used in this case as it was felt the patient would have numerous opportunities during his admission for further treatment.

Blood was drawn for an intravenous pyelogram on the day following the treatment by the attending physicians who had already drawn blood from the patient. They reported that the patient was considerably more co-operative and did not appear nearly as distressed. Pulse and blood pressure remained stable during this attempt. A 2-month follow-up from the oncology clinic physician was that the patient was tolerating blood drawing much better and had no fainting episodes. The patient said that he felt he was tolerating the procedure better, although he still didn't like to have it done. There was no indication that another symptom had substituted for the needle phobia.

### Case history no. 2

A 23-year-old white female was admitted to Stanford for a staging laparotomy for Hodgkin's disease. Although she understood the necessity for the operation, she cried, screamed, and pulled away when approached by anyone with a hypodermic needle. Despite several hours of pleading and exhortation by the house staff and nurses, she would not allow blood to be drawn or an intravenous catheter to be inserted. Because of her resistance, surgery was postponed indefinitely.

#### Past history

The patient remembers being terrified of needles as a child and reacting to all injections by crying. When she was 13 years old, she developed an acute allergic response after an injection of penicillin and lost consciousness. During her second delivery, when she was 20 years old, she became acutely hysterical when an intravenous needle was inserted, and demanded its immediate removal. She was able to undergo a series of allergy injections over a 20-week period at the age of 22 years, but when her Hodgkin's disease was diagnosed 6 months before the present admission, she again began to experience an extreme fear of needles. Her initial lymph node biopsy was conducted under general anaesthesia. For this procedure she was so fearful that the anaesthetist decided to insert the intravenous catheter after she was unconscious and to remove it before she awakened.

The patient has no other significant psychiatric symptoms. She appears to be an energetic, intelligent, sensitive young woman with an isolated fear of hypodermic needles and intravenous equipment.

#### Course of therapy

The process of participant modelling was similar to that described in case no. 1 and required about 1 hr. She was able to proceed through the hierarchy of items and procedures without difficulty. In this case, self-directed practice was used. As the patient was scheduled for surgery, she was encouraged to walk around the room with her intravenous needle attached to a bottle suspended from an intravenous bottle pole, and then asked to take a tour of the hospital pushing the pole with her.

On the day of surgery, she tolerated the taking of several blood samples and the placement of several intravenous catheters and needles, both pre- and post-operatively, without incident. The patient reports a sense of pride in her accomplishment and feels more relaxed in the hospital. She has a much better attitude towards her surgery, doctors, and illness than before the desensitization procedure. Follow-up 1 year later revealed that the patient had maintained these gains, and again there was no indication of symptom substitution.

### Discussion

These two cases illustrate the use of participant modelling to overcome severe needle phobias in patients with no other psychiatric problems. The same techniques can be used to overcome other medical phobias and non-medical phobias (this technique has since been used successfully to treat two spider phobias). The treatment seems to occur without substitution of other symptoms for the phobia, and is simple enough to be carried out by untrained therapists.

Physicians or allied personnel using this technique should keep the following principles in mind: (a) the patient must not be encouraged to undergo steps prematurely. Premature or excessive performance demands may increase the fears and the patient may refuse further treatment. This problem can be avoided by carefully constructing a hierarchy with small steps and by asking the patient to report any undue anxiety. Patience on the therapist's part will be rewarded by successful treatment; (b) the programme might have to be varied from one subject to another. Each individual focuses on a particular aspect of a phobia—some needle phobias are concerned about the needle, others about the injection. The treatment programme must be adjusted to these differences; (c) some fears will require more than one session to be eliminated; (d) many fears can be prevented: in general, the prevention involves careful instructions to the patient about the nature of the procedure, inquiring about his fears and understanding of the procedure, and generally alleviating anxiety by support, education, and reassurance.

Also, the patients described in this paper and in most cases reported in the literature have single phobias and no other psychiatric pathology. Therefore, physicians or other individuals using these techniques to treat individuals with more complex problems should consult an experienced therapist before commencing the treatment.

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