BEHAVIOR THERAPY (1973) 4, 264–266

A Covert Reinforcement Program for the Treatment of Text Anxiety: Brief Report[1]

PATRICIA A. WISOCKI[2]
Boston Institute for Behavior Modification, Framingham, Massachusetts 01701

To test the efficacy of five sessions of covert reinforcement in reducing the test anxiety of 18 college students, pre- and post-treatment scores on the Suinn Test Anxiety Behavior Scale and the Otis–Lennon Mental Ability Test were compared for an experimental group and a matched group of 18 control subjects given no treatment. The results indicate a significant decrease in anxiety scale scores for the experimental subjects, but no significant change in I.Q. test scores. A significant correlation was found between the reduction of anxiety scores and the reported intensity of vivid imagery.

The application of covert reinforcement (Cautela, 1970) to the reduction of test anxiety, has not previously been put to empirical test and there has been no reported attempt to automate the technique for group presentation. The present study, designed to attain those objecives, also evaluates the contributions of the specific effects of practice and imagery vividness on changes in the dependent measures: self-report anxiety scale scores (i.e., the STABS, developed by Suinn, 1969) and scores on the Otis–Lennon Mental Ability Test.

METHOD

Eighteen pairs of females were matched on the basis of pre-treatment test scores and one member of each pair was randomly assigned to either a treatment or a control group. All subjects had experienced test anxiety for at least the previous year.

Group treatment sessions consisted of five 50-min periods spread over 4 wk, with a taped recording of the experimenter's voice employed after the initial instruction session.

Experimental Group Treatment

Prior to treatment each subject selected 15 highly reinforcing items from the Reinforcement Survey Schedule (Cautela & Kastenbaum, 1967). Any item unable to be visualized clearly within 5 sec of its presentation was replaced by another item. Each stimulus, together with its designating rank number, was then written on a

[1] This paper is based on a dissertation submitted to Boston College in partial fulfillment of the requirements for the Ph.D. degree.

[2] Requests for reprints should be sent to Patricia A. Wisocki, Boston Institute for Behavior Modification, 354A Waverly St., Framingham, Mass. 01701.

card for later use. At this time a demonstration of the covert reinforcement technique was also given.

A 5-min written report of the number of times each subject had practiced the assigned scenes at home (data later analyzed to assess the effects of outside trials on test performance) was followed by a 45-min taped presentation of anxiety-provoking test situations involving going to the exam, feeling calm during the exam, and doing well on the exam. Scenes were presented in sequence for 30 sec apiece. After a 10-sec pause the experimenter described a positive response. A 5-sec pause was then followed by the word "reinforcement," a 30-sec pause while subjects imagined the reinforcing item, and a 1-min interval before the next scene presentation. During this interval, subjects were told to erase the scenes from their minds and to record how clear and vivid the image was for that particular scene.

Before presentation of the next scene, subjects were reminded of the need to visualize the imagery as clearly as possible. After each scene presentation they were told to imagine the same scene and to deliver the reinforcing stimulus immediately after it became clear. The experimenter and subjects alternated descriptions of scenes throughout the remainder of the session until four trials of the entire sequence had been given. Subjects were asked to practice each set of scenes at home at least 10 times a day.

To avoid satiation, the reinforcing items used were varied for each scene. Three reinforcers were selected for each week from the five top, middle and bottom items obtained from the Reinforcement Survey Schedule.

After the final session the STABS and the Otis–Lennon Mental Ability Test were administered.

Control Group Treatment

Subjects were initially told that the study could not accommodate them and that no plan had been made to repeat the study later. After 4 wk, they were contacted and asked to retake the Otis–Lennon test and the STABS. Students who then requested treatment were given the same program as the experimental group.

Follow-up

Six weeks after completion of the program, all subjects in the experimental group were asked to compare their levels of anxiety and relaxation, respectively, during first and second semester examinations.

DISCUSSION AND RESULTS

Covert reinforcement significantly ($p < .01$) decreased scores on the self-report anxiety scale, a result consistent with the majority of desensitization studies involving test anxiety self-report instruments, but there was no significant improvement in I.Q.

The anxiety scores from five subjects who attended only three of the five treatment sessions did not differ significantly from the scores of their matched controls, suggesting that the number of sessions attended is a relevant variable in treatment outcome. The reported amount of imagery "vividness" correlated significantly ($p < .05$) with the amount of decrease in STABS scores.

Six weeks after termination of the program and 2 wk after final examinations, 13 experimental subjects reported feeling more relaxed both during exams and in general than they had in the previous semester; eight reported improvement in grades; seven reported increased self-confidence and a more positive attitude toward school without grade improvement. Only one subject reported no change.

Beforehand, there were five reports of severe physical problems, such as vomiting and abdominal pain, in association with test-taking activities. After the program was terminated none of these subjects experienced any physical discomfort prior to examinations.

It must be noted that, while the present design takes into consideration extraexperimental errors, it does not adequately control for nonspecific placebo effects and the confounding of experimenter and client characteristics (see Paul, 1969). Conceivably, such effects could be minimized by the inclusion of an attention-placebo group. Further research into the revelant variables operating within the group covert reinforcement setting is needed.

REFERENCES

CAUTELA, J. R. Covert reinforcement. *Behavior Therapy,* 1970, **1,** 33–50.

CAUTELA, J. R., & KASTENBAUM, R. A reinforcement survey schedule for use in therapy, training, and research. *Psychological Reports,* 1967, **20,** 1115–1130.

PAUL, G. Behavior modification research: design and tactics. In C. M. Franks (Ed.), *Behavior therapy: appraisal and status.* New York: McGraw–Hill, 1969, 29–62.

SUINN, R. The STABS, a measure of test anxiety for behavior therapy: normative data. *Behaviour Research and Therapy,* 1969 **7,** 335–339.