letters to the editor

Bio-Feedback

We wish to make the following comments regarding the article, "Tension Perception in Patients Having Pain Associated with Chronic Muscle Tension," by R. S. Fowler and G. H. Kraft, which appeared in the January 1974 issue of the Archives.

It is a well documented finding that in man there is a low correlation between verbal report measures and direct psychophysiological measures (that is, EMG, heart rate, G.S.R.) of tension, anxiety, and under certain conditions, even pain. This finding is clearly replicated by Fowler and Kraft. In their discussion, the authors recognize the frequent "transfer gap" in clinical biofeedback training between the laboratory situation and the patient’s natural habitat. They recommended that patients be trained to recognize muscle tension to promote this transfer. At this point, their recommendation is not supported by data and is reminiscent of the suggestion made by Edmund Jacobson in the late 1930's.

Our preliminary studies which attempted to minimize this "transfer gap" in relaxation, support the following procedures: (1) alternating periods of contingent and non-contingent EMG feedback training under variable laboratory conditions; and (2) the cultivation in the patient of an altered "cognitive attitude" toward stress. The latter is a poorly defined and understood concept. It refers to a clinically recognizable phenomenon which nearly always characterizes patients who successfully transfer the laboratory learned skill to the natural habitat. There is some preliminary evidence that this facilitation of EMG feedback of low arousal states facilitates the alteration of central and higher brain center events.

Further, we have hypothesized that EMG and temperature feedback simply provides an index of change in an as yet unknown more central response system which should properly be the focus of more efficient biofeedback training. There is considerable evidence in the well-known work of Hess, Gelhorn, Budzynski, and Germania that reductions in EMG levels are associated with parasympathetic activation and also changes in the central nervous system.

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References


Drs. Fowler and Kraft reply:

We appreciate the interest shown by Drs. Wickramasekera and Truong in our article on muscle tension perception. They quite appropriately point out that the transfer of learning from the laboratory to other areas of one's life can be difficult. They also are correct in their statement that our recommendation that patients be trained in muscle tension perception as an aid to generalization, has not been supported by research data. Our original suggestion seemed a logical conclusion from the study presented and for the last two years we have been involved in testing this hypothesis. The research has been supported by grants from the Center for Research in Oral Biology, National Institute for Dental Research, and Social and Rehabilitation Services Grant No. 16-P-56818/0-12. Unfortunately, the study is not yet complete, but pre-
liminary data analysis suggests that tension perception training is indeed a useful technique for increasing generalization and enhancing treatment effectiveness. Drs. Wickramasekera and Truong have offered what appear to be useful suggestions regarding techniques for coping with the transfer gap problem. Unfortunately, they too fail to present data to support their suggestions.

Following are some techniques developed by other researchers in the field. Budzinsky suggests that patients should be encouraged to describe their sensations so that they will develop useful phrases or a series of phrases which will become conditioned to the desired physiological pattern. He also suggests the use of home practice cassette tapes which give programmed verbal instructions to be followed by the patient. Progress from one tape to another is based on the patient's ability to demonstrate a certain level of control over a particular function. Sargent, Walters and Green provide a set of verbal cues in the form of their autogenic suggestions. In addition, they train subjects to exercise their skills with and without the assistance of the feedback trainer. Subjects are also provided with a portable feedback device which can be used to practice outside of the laboratory. Whatmore, who has been using EMG-based feedback treatment techniques for more than 20 years, has developed a tiny programmable timer. Patients are instructed to practice their skills whenever the timer signals, wherever they may be. Caldwell has suggested that patients use the cue associated with passing through a doorway as a signal to practice relaxation skill.

It seems that most researchers recognize the generalization problem. We have each developed techniques designed to cope. Unfortunately, to date the programs appear to be based largely on intuition rather than data. Let us hope that this deficit will be soon remedied.

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References
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