THE STRESS-AROUSAL CHECKLIST AS A MEASURE OF SITUATIONAL STRESS VERSUS SIMPLE AROUSAL

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Summary.—The Stress-Arousal Checklist was developed as a self-report measure both of arousal and of the favorable or unfavorable appraisal of that arousal. Previous studies with the checklist showed differential sensitivity of the two subscales to experimental manipulations. In the present study, the convergent and discriminant validity were further explored by comparing scores with those on the State-Trait Anxiety Inventory-State. The results supported the validity of the two-factor structure.

Self-report measures of stress and arousal, ranging from single questions to elaborate and multidimensional scales, are found frequently in the scientific and clinical literature on human stress. The two constructs—stress and arousal—are treated often as equivalent terms. However, in clinical treatment or research it is frequently useful and necessary to distinguish one from the other. The emotional consequences of an event are determined by the interplay of autonomic arousal and cognitive evaluation (Mandler, 1983).

The Stress-Arousal Checklist is a self-report instrument which has been useful in the differential measurement of stress and arousal. It was developed by Mackay and others from a reanalysis of an adjective checklist based on Thayer's Activation-Deactivation Adjective Checklist (Mackay, Cox, Burrows, & Lazzarini, 1978).

Arousal is defined as a generalized state of increased physiological activity without implication of positive or negative valuation of that state. Stress, on the other hand, is defined as the subjective perception of the current situation as unpleasant or threatening. Theoretically, stress may be perceived whether or not there is arousal. This may be observed in the clinical setting with certain somatoform disorders. More often, arousal may be perceived in the absence of a negative appraisal of the situation. The emotional, and perhaps the neuroendocrine, sequelae of arousal with and without stress may differ significantly (Asterita, 1985; Mandler, 1983).

Despite its apparent usefulness, and the intuitive appeal of its premise, the checklist has not been used frequently by clinical researchers. The instrument is not widely known and has not been extensively validated with

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a variety of clinically relevant subjects and stressors. However, the basic psychometric research has been reported by Mackay (1980), citing a series of studies which demonstrate differential sensitivity of the two factors (stress and arousal) to experimental manipulations. The stressor in these studies was the performance of a psychomotor task under one of three noise conditions. Stress was consistently more sensitive to the noise level. In another study, in which a sales-training exercise was used, the stress decreased across the task period whereas there were no changes in arousal (Burrows, Cox, & Simpson, 1977).

The present data are published to add to the existing literature on the convergent and discriminant validity of this checklist. The two subscales are compared with the “State” scale of the State-Trait Anxiety Inventory (STAI—S) in a potentially stressful situation. The STAI—S is a well known, unidimensional measure of distress. Because the checklist purports to measure both distress and arousal and because not all subjects will respond similarly to a moderate stressor, it is possible to predict the following results. First, scores on the SACL-stress scale will correlate positively with those on the STAI—S since both measure state distress. Second, scores on the SACL-arousal scale will be unreliably related to the STAI—S scores because arousal may or may not be interpreted negatively by the individual. Finally, scores on the SACL-stress scale will be unrelated to those on the SACL-arousal scale for the same reason. That is, the premise of the checklist’s two-factor structure predicts that some subjects will perceive arousal but not stress or, less frequently, stress but not arousal.

**METHOD**

**Subjects**

The sample was comprised of 30 female graduate students who were participating in a broader study of pain perception and state/trait anxiety.

**Measures**

*Stress-Arousal Checklist.*—The checklist consists of 45 adjectives of which 34 are scored. The arousal score is derived from 15 adjectives (e.g., active, energetic, drowsy) and the stress score from 19 adjectives (e.g., tense, uneasy, peaceful). Respondents are instructed to answer according to their feelings at the moment. There is a 4-point response option: (+ +) definitely feel, (+) feel slightly, (?) do not understand, (-) definitely do not feel. A copy of the instrument with scoring instructions may be obtained from the first author.

*State-Trait Anxiety Inventory (STAI).*—This inventory has two 20-item subscales, STAI—State and STAI—Trait (Spielberger, Gorsuch, & Lushene, 1970). The State subscale measures the intensity of anxiety at the moment the scale is being completed. Responses are made on a 4-point Likert scale.
Procedure

The checklist and the STAI—S were administered during a study of pain perception. The scales were administered individually immediately after the informed consent and description of the pain manipulation. Subjects had just been shown a pressure-pain stimulator which was to be used in the study. The STAI—S was always administered first. The subjects were told that they could stop the pain induction at any time. This measure of control reduced the stressfulness of the “objective” situation.

RESULTS

Scores on SACL-stress were significantly correlated with those on STAI—S ($r = .85$, $p < .01$), but scores on SACL-arousal were not related to STAI—S scores ($r = -.25$, $p > .05$). The arousal and stress subscales of the checklist were not correlated ($r = -.03$). The means and standard deviations were for SACL-stress 6.57 and 4.81, for SACL-arousal 9.87 and 3.42, and for STAI—S 37.6 and 8.36.

DISCUSSION

The pattern of correlations is consistent with the assumptions underpinning the two-factor structure of the checklist. Both the STAI—S and the SACL-stress measure unpleasant immediate sensation, so their positive correlation was expected. Arousal did not invariably imply negative affect; hence, the nonsignificant correlation was expected. Two points should be considered for research. First, inspection of the data indicated that the discrepancy between stress and arousal scores more often reflected high arousal and low reported stress. While the low relationship between the two subscales supports the hypothesis, the interpretation of the high arousal-low stress pattern is problematic. It may reflect higher tolerance for arousal and/or the situation, or denial of negative affect. This problem has been recognized by Weinberger, Schwartz, and Davidson (1979), who suggested use of a measure of defensiveness to distinguish between repressors and truly low-anxious persons.

Second, if the stress-inducing situation had been more potent, the distinctiveness of stress and arousal may not have been evident. The present situation was moderated by the stipulation that the subject could end the experience at any time. This measure of control may reduce both pain sensation and stress (Thompson, 1981), allowing for greater variation in arousal and reported stress than might be found with a highly potent stressor. In the latter circumstance, stress and arousal may well covary significantly even though remaining theoretically distinct constructs.

Psychophysiologicalists are often mistrustful of self-report measures because of their “subjective” nature. However, there are many situations in which the direct measurement of physiological activity is not practical. Even
measurement of one or two channels may not provide satisfactory results when the response pattern is not highly idiosyncratic to the stimulus. For these situations, a self-report instrument is a reasonable alternative. Previous studies have demonstrated that individuals can provide a valid and reliable subjective assessment of arousal (Mackay, 1980). The present study adds to the body of evidence suggesting that the Stress-Arousal Checklist is a useful self-report instrument for situations in which simple arousal must be distinguished from the unpleasant interpretation which may or may not be attached to it. Clinically, this distinction will be relevant most often in the context of biobehavioral therapy addressing psychophysiological syndromes. Given the lack of normative data, the checklist cannot be considered an alternative to the STAI—S when one wishes to establish the relative intensity of stress or anxiety perceived by a particular individual or group. More research is warranted to document further this instrument’s validity with clinical or clinically analogous stressors and samples.

REFERENCES


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