PILOT STUDY OF SUBJECTIVE AND PHYSIOLOGICAL RESPONSES TO EXPOSURE TO PICTURES OF DEAD BODIES AND BODY PARTS.

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This pilot study is done in connection with a cooperative research effort which has been conducted by the Department of Military, Walter Reed Army Institute of Research (WRAIR) and the Department of Psychology at the College of William and Mary.

PROBLEM

Exposure to disaster-related trauma and stress results in significant psychological sequelae in approximately 20-40% of all emergency and relief workers. Problems reported include disturbances of attention, concentration, depression, irritability, insomnia, anxiety, memory problems, and intrusive flashbacks of traumatic scenes. Acute symptoms are reportedly less common to overwhelming stressors, such as disasters and combat experiences, than are delayed reactions.

Exposure to dead bodies and remains constitutes an extraordinary stressor that appears to be an important contributor to the etiology of Post Traumatic Stress Disorder (PTSD). There is clear empirical evidence that individual differences affect the risk of developing PTSD symptoms.

Wickramasekera has proposed a multidimensional model of people at high risk for developing chronic stress-related symptoms. The risk factors identified in this model include: a) high and low hypnotizability b) autonomic lability or neurotism c) habitual catastrophizing cognitions and pessimistic belief systems d) multiple major life changes or multiple minor hassles over a short period of time, and e) a deficit in coping skills, support systems or both. This model provides one of the few available multidimensional predictive frameworks applicable to the area of stress related disorders: A. Factors that will attenuate relationship between stress and symptoms:
1. High Social Support.
2. High Coping Skills.
3. Density of Major Life Changes.
B. Factors that will potentiate relationship between stress and symptoms:
5. High or low hypnotizability.
6. High catastrophizing.
7. High Neuroticism.

The goal of this pilot study is to explore the relationship between the risk factors identified in the high-risk model and the physiological reactions to exposure to pictures of dead bodies and body parts, as a step towards finding a way to predict which individuals are able to be "body handlers" and rescue workers on disaster sites without high risk of developing stress-related psychological and physiological symptoms. The extensive literature on PTSD and disasters includes little empirical data on this.
HYPOTHESIS

Subjects who have a high (9-12) or low (0-3) hypnotizibility score and high neuroticism, catastrophizing and hazzles scores, will show stronger physiological responses to pictures of dead bodies and body parts than other subjects, especially if they have low coping skills and support system scores.

Highly hypnotizable subjects will show both a strong physiological reaction and high subjective self-reported stress reaction to the pictures. Subjects with low hypnotizability will show strong physiological reaction but less self-reported stress reaction than highly hypnotizable subjects.

SUBJECTS

The subjects (N=15) in this study are volunteers, most of whom are students in the Art Therapy and Psy. D. programs at the Eastern Virginia Medical School.

METHOD

All subjects will be measured on the Harvard Group Scale of Hypnotizibility, and given the standard paper-and-pencil tests used in the Behavior Medicine Clinic to assess the level of neuroticism and catastrophizing and the amount of life hazzles, coping skills and social support for each subject.

The following physiological reactions will be measured continuously during the presentation of the pictures:

a) Skin conductance, measured by sensors attached to the subject's fingers.

b) Hand temperature, measured by sensors attached to the subject's finger.

c) Muscle tension (EMG), measured by sensors on the subject's forehead and shoulders.

d) Heart rate, measured by a plethysmographic sensor attached to the subject's finger.

e) Blood pulse volume, measured with a sensor on the subject's finger.

25 slides will be presented to the subjects in the research laboratory, of which 5 are neutral control slides and 20 are pictures of dead bodies and body parts. The slides will be projected onto a wall, with equal picture size and distance from the picture for all subjects. Each picture will be presented for 20 seconds. The subjects will be asked to make a subjective assessment of their stress level five times, at regular intervals, during the slide presentation. The laboratory procedure will take approximately 60 minutes for each subject, and the completion of the paper-and-pencil tests and the hypnotizability test require additional 90 minute

RESULTS

The data is currently being collected (September '90) and the results will not be available until December ('90). Due to the limitations imposed by the small number of subjects in this pilot study, only the correlation of each of the factors in
the high-risk model, and the subjective assessment of stress, with the physiological reaction levels, will be calculated and tested for significance. Non-parametric statistics will be used.

If a full-scale study based on this research model will be conducted later, multiple regression would be used to assess the contribution of each factor to the overall stress reaction, and create the best predictive equation which could have practical value as a preventive measure when applied to select people for work which includes high probability of exposure to dead bodies and remains.

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