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Spontaneous and Deliberate Dissociative States in Military Personnel: Relationships to Objective Performance Under Stress

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ABSTRACT We recently distinguished between spontaneous and deliberate dissociative states in military personnel exposed to stressful survival training, demonstrating not only that a substantial subset of participants (13%) deliberately dissociate under intense stress but also that most deliberate dissociators (76%) find it helpful (facilitative) to coping. In this brief report, we examine the relationship between spontaneous and deliberate subtypes of dissociation, and objective military performance in Special Forces and non Special Forces personnel enrolled in survival school. Inverse relationships between dissociation and military performance were observed in both Special Forces and general soldier subgroups. Military performance did not differ between spontaneous and deliberate dissociators, nor did it differ between those who appraised dissociative states as facilitative versus debilitating to stress coping. This study evolves our understanding of factors influencing human performance in the high stakes survival context.

INTRODUCTION

Peritraumatic dissociation is a situationally bound disruption in integrated functions of consciousness, memory, identity, and/or perception of environment in response to extreme stress or trauma.^{1,2} Many consider it prognostic of post-traumatic stress disorder and it is believed to be a critical element in defining traumatic stress.³

We recently reported, for the first time, distinctions between spontaneous (i.e., occurring, automatically, without intentional induction) and deliberate (i.e., intentionally induced) dissociative states in military personnel exposed to stressful survival training.⁴ A majority (95.4%) endorsed dissociative states during stress. More than half (57.4%) described dissociative experiences as spontaneous, 13.0% as deliberate, and 29.5% endorsed neither. Seventy-three percent of spontaneous dissociators described the experience as debilitating to coping with

stress; conversely, 76% of deliberate dissociators said these experiences facilitated coping with stress. Before this report, it was generally presumed that dissociative states in high-stress military contexts occurred spontaneously. However, recurring testimonies from individuals enrolled in our survival training studies^{5,6} prompted us to hypothesize that some individuals deliberately induce dissociative states as a way to cope with intense stress. This resonated with a broader literature concerning coping strategies in victims of trauma and that of competitive athletes suggesting that some individuals attempt to mentally disengage from their immediate physical environment in order to cope with stress.⁷⁻⁹

Despite the discovery that dissociative states may be either spontaneous or deliberate, a crucial gap in our understanding remains, given that the relationships of these dissociative subtypes to military performance are not known. In this brief report, we further examined dissociation, its spontaneous and deliberate subtypes, and military performance under survival stress in Special Forces and non Special Forces personnel. In light of prior evidence,^{5,10} we hypothesized that, overall, dissociative states would associate with poor military performance. Because spontaneous and deliberate dissociative states have not been studied in relation to human performance in past research, directional hypotheses were not advanced regarding these dissociative subtypes.

METHODS

Military Survival Training

The structure and focus of military survival school training (also known as Survival, Evasion, Resistance, and Escape

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[SERE] training) is described in our prior reports.^{4,11–17} Briefly, survival school training is Code of Conduct training and designed for U.S. military members who are deemed “high risk for capture” because of their military work. The course consists of didactic and experiential phases. The didactic phase is classroom based; during this phase students learn the U.S. Code of Conduct and basic survival skills. The experiential phase requires students to demonstrate field survival skills and resistance to exploitation in a highly realistic mock-captivity setting. Recent studies confirm its validity as a sustained stressor, as evidenced by substantial increases in both physiological (e.g., heart rate, blood pressure, and cortisol)^{11,17} and self-report indices (e.g., dissociative states and psychological impact of events).^{11,14,17}

Subjects

Subjects included 335 healthy, male, active duty military members. Detailed subject characteristics are provided in our prior report.⁴ Mean $\pm$ SE age and years of military experience were 25.0 ± 6.0 , and 5.2 ± 5.0 , respectively. Approximately one-third (31.0%) were married. Most participants (57.2%) were general soldiers, whereas 41.3% were Special Forces. All subjects underwent medical and psychological screening by the SERE medical officer before enrollment in survival training. Examples of criteria for exclusion from SERE training include endocrine, renal, cardiovascular, psychological, or musculoskeletal disorders. Subjects who were deemed medically fit to undergo SERE training and were enrolled in the SERE course were thus considered eligible for this study. Those who expressed an interest in participating attended an in-person meeting on the first day of the academic phase of training to review the details of the study and provide written informed consent. Participants were recruited from seven consecutive SERE courses, with approximately 45 to 50 participants enrolled per course. This protocol was approved by the Institutional Review Board of Yale University and Veteran Affairs Connecticut Healthcare System.

Measures

Dissociative States

During the mock-captivity phase of training (after the evasion exercise), SERE staff escorted subjects to a secure area directly after a stressful event. The 19 self-report items from the Clinician-Administered Dissociative States Scale (CADSS)¹⁸ were used to assess the frequency and intensity of state symptoms of dissociation with respect to the stressful mock-captivity event. Although the CADSS includes additional items used for clinical observation, the set of 19 self-report items is a valid, reliable, and independent indicator of dissociative states.^{4,17} This scale is designed to assess how perceptually connected or disconnected an individual is relative to his or her environment. Although some items measure one’s sense of physical self (e.g., Did you feel as if

you were watching the situation as an observer or spectator?), other items address cognitive or perceptual distortions (e.g., Did you space out or in some way lose track of what is going on?). The self-report items are rated on a Likert scale of 0 (not at all) to 4 (extremely), with a maximum possible score of 76. Cronbach’s α reliability for the 19 CADSS items was 0.91.

In this study, each subject was asked two additional questions. First, he was asked to indicate whether the reported experiences “just happened” (i.e., spontaneous), or whether he “chose” to have them happen (i.e., deliberate). This item was rank ordered on a scale of -2 (“totally spontaneous; I made no conscious choice to have them”) to $+2$ (not spontaneous at all; I chose to have them). A score of zero corresponds to “neither.” Second, subjects were asked to indicate the degree to which these experiences did or did not help him cope with the stress he was experiencing. This item was rank ordered on a scale of -2 (made it worse/did not help) to $+2$ (helped a great deal). For this item, a score of zero corresponds to “didn’t help but didn’t make things worse.”

Military Performance

Performance during the mock-captivity event was measured in standardized fashion by trained observers. Specifically, survival training instructors created a performance score that was the sum of observed, classified, target skills that survival students are expected to demonstrate during a high-intensity mock-captivity challenge. Thus, the scores were created independent of the research team (see Morgan et al¹⁹ for a more detailed description) and were provided to the research team after the conclusion of SERE training. The degree to which this scale relates to more traditional cognitive, psychological, or behavioral performance scores has not been established.

Analyses

Data were analyzed using SPSS software, version 19 (SPSS, Chicago, Illinois). Characteristics of the distributions were examined to ensure assumptions of normality were met.²⁰ Pearson product moment correlations assessed the relationship between dissociative states and military performance in both Special Forces and general soldiers. Subjects were then grouped into “spontaneous” and “deliberate” dissociation groups, after which independent t tests compared military performance scores of spontaneous versus deliberate dissociators and facilitative versus debilitating dissociators, respectively. All hypothesis tests were two-sided and the probability of committing a type I error was set at 0.05, although it was reported when more stringent probabilities were achieved ($p < 0.01$ or $p < 0.001$).

RESULTS

As discussed in Morgan et al,⁴ the majority of subjects (95.4%) endorsed dissociative symptoms during military stress, and the mean $\pm$ SD dissociation score was $18.5 \pm$

TABLE I. Dissociative Symptoms and Military Performance

Characteristic	Total Sample	Special Forces	General Soldiers	<i>t</i>	<i>p</i>
Dissociative Symptom Score	18.5 ± 14.2	11.8 ± 11.9	23.3 ± 13.8	8.1	<0.001
Military Performance	4.5 ± 2.0	6.0 ± 1.6	3.5 ± 1.5	14.8	<0.001
Dissociation Performance Relationship	<i>r</i> 0.65*	<i>r</i> 0.60*	<i>r</i> 0.54*		

* $p < 0.001$.

14.2. Dissociation scores for Special Forces soldiers were lower than general soldiers ($t = -8.1$, $p < 0.001$). Inverse relationships between dissociation and military performance were moderately high in the total sample, and this relationship was consistent across Special Forces and general soldier subgroups (Table I). Spontaneous and deliberate dissociators did not differ with respect to military performance (spontaneous = 4.8 ± 2.0 vs. deliberate = 4.6 ± 2.1 , $t = 0.5$, $p = 0.61$). Because fewer Special Forces soldiers (37 of 103; 36.0%) reported a facilitative impact of dissociative symptoms compared with general soldiers (67 of 127; 52.8%) ($\chi^2 = 6.5$, $p < 0.05$; see Morgan et al⁴), facilitative-debilitative comparisons were performed separately for each group. Facilitative and debilitative subgroups did not differ with respect to military performance among Special Forces soldiers (facilitative: 5.9 ± 1.5 vs. debilitative: 6.2 ± 1.5 , $t = 1.1$, $p = 0.27$) or general soldiers (facilitative: 3.4 ± 1.4 vs. debilitative: 3.4 ± 1.6 , $t = 0.2$, $p = 0.83$).

DISCUSSION

In this study, dissociation was related to poorer objective military performance in all survival trainees. Furthermore, this pattern remained whether dissociative states were characterized as spontaneous, deliberate, facilitative, or debilitative.

The observed connection between stress-induced dissociative states and poorer military performance is consistent with several prior reports.^{10,11,21,22} For example, Morgan et al²¹ showed a relatively strong inverse relationship between dissociative states and performance in U.S. Army survival trainees, whereas similar effects have been revealed in Navy survival trainees¹¹ as well as military cadets.¹⁰ Still other work has shown that baseline dissociation predicts attrition in Special Forces assessment and selection participants.²² Taken together, this expected finding resonates with prior literature suggesting that, overall, dissociation associates with poor military performance.

This study also raised the question of whether specific dissociative subtypes might differentially influence military performance. Spontaneous and deliberate dissociative subgroups, however, did not differ on objectively assessed military performance, nor did facilitative and debilitative subgroups. Although to our knowledge there is no prior literature on this topic per se, there is a conceptually relevant literature found in the sport sciences. As discussed in Morgan et al,⁴ sport scientists have examined differences between so-called dissociative and associative cognitive strategies in athletes experiencing stress. In the sports context, a dissociative

strategy involves a focus on external cues to restrict sensory input, whereas an associative strategy involves a focus on the body's internal cues.²³ Although some research suggests that an associative strategy yields superior performance effects over dissociative strategies in certain contexts (e.g., endurance sporting events^{23–25}), evidence to the contrary has also been obtained in a resistance training condition.²⁶ In sum, although the dissociative subtypes studied here did not differentially influence military performance, the sports literature provides clues that such effects may depend on unique demands of the task.

Although it is widely accepted that stress responses emanate from factors unique to the person (e.g., coping) and the environment (e.g., task demands), how such factors coalesce to predict “human performance” is not well understood. It is plausible that effectiveness of dissociative subtypes on performance is modulated by a similar interaction of individual and environmental factors. Accordingly, future research should examine whether individual differences govern the usefulness of these dissociative subtypes, and, in turn, if some subtypes are better matched to certain military contexts than others. More specifically, the potential utility of deliberate dissociation may depend on whether the context requires cognitive engagement with a dynamic environment, whether the scenario is simple or complex, and/or whether active versus passive coping is more adaptive to the circumstance. With this in mind, studies evaluating sex differences,¹⁷ individual differences in locus of control,²⁷ individual differences in coping styles,²⁸ and unique characteristics of the stressor (e.g., controllability) may prove useful. Once future research determines whether and how dissociative subtypes could benefit performance under specific circumstances, it would be important to next explore whether it is a teachable skill and whether this approach may modulate stress performance relationships.²⁹

In summary, this study was designed to explore dissociation, its spontaneous and deliberate subtypes, and performance in military personnel exposed to acute stress. Robust inverse associations between dissociative states and military performance were shown. Spontaneous and deliberate dissociators, however, did not differ on military performance, nor did those individuals who appraised dissociative states as facilitative versus debilitative to stress coping. Synthesizing these findings with our prior report,⁴ we now know that some military members intentionally dissociate under stress and this deliberate dissociation appears to positively influence stress coping, but its effect on objective human performance is yet to be determined.

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