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ORIGINAL ARTICLE

Self-Efficacy, State Anxiety, and Motivation during Mandatory Combative Training

Abstract

U.S. Army soldiers (n = 52) attending Instructor Combative Training (ICT) courses at two military installations in the US were examined before, during and at the end of the course on self-defense efficacy (SDE), teaching combatives self-efficacy (TCSE), combatives state anxiety (CSA), and motivation. In a quasi-experimental design, a cognitive-behavioral coping intervention targeting combative anxiety was implemented. Two classes (n = 32) constituted the interventions and one class as a control group (n = 20). RM ANOVAs revealed a significant increase in SDE and TCSE across the course for the experimental groups. Specifically, the intervention group soldiers scored lower in CSA during high anxiety driven events and higher in motivation than the control group soldiers along the course progression. The results provide preliminary evidence that a combatives anxiety coping strategy can influence SDE, TCSE, CSA, and motivation during mandatory psychologically demanding training.

Key Words: *Combatives Self-Efficacy, Anxiety, Motivation*

Introduction

In order for soldiers to efficiently carry out combative and hand-to-hand situations, they must have a sense of efficacy in combatives-related tasks. If individuals are not self-efficacious about self-defense and their ability to teach self-defense, their potential to be successful in a combatives environment may be diminished. In addition, their motivation to participate or promote the program may be affected. This study examines the development of these dispositions when soldiers are exposed to Instructor Combative Training (ICT), which consists of cognitive-behavioral coping principles.

Introduction of the Evaluated Combatives Environment

In a 2004 Memorandum for Record, the Chief of Staff of the Army characterized the objectives of the Army Combative Program as follows:

The intent is for every soldier to experience *the physical and emotional demands* [italics added] of hand-to-hand fighting prior to engaging in combat. Combatives training is an important component of the warrior ethos. The purpose of combatives training is to *instill confidence and fighting skill* [italics added] that can only be gained through engagement with an opponent in a combative situation. Hand-to-hand combat training is a fundamental building block for preparing our soldiers for current and future operations. Soldiers must be prepared to use different levels of physical force across the operational spectrum in an uncertain environment. Combatives training will provide this critical capability. (p. 1)

The combatives program is composed of four levels of certification for instructors. Level one provides certification for the initial entry instructor, and provides the foundation for the program. At this level, the program focuses on grappling situations and skills that include dominant ground positions, choking, and joint locking techniques. The level one instructor certification course is 40 hours in length, and is conducted from Monday to Friday at a Combatives facility. Day 4 of the training includes a practical self-defense scenario that is mandatory for graduation. Soldiers training to become instructors are required to execute the acquired skills by participating in fighting situations with their classmates on a daily basis, and at an evaluated event at the end of the week. Because of this interaction, participants get to find out if their techniques are effective every time they enter the training environment.

Psychological Aspects of the Mixed Martial Arts Environment

Hand-to-hand combat activities such as wrestling, boxing, karate, and mixed martial arts present a psychologically demanding environment for soldiers. The environment entails individual confrontations and constant threat to the individual's ego. Individuals who choose to participate in these types of activities must have a certain set of skills enabling them to cope with the confrontations effectively.

Milton (2004) conducted a qualitative study with five mixed martial art athletes in the UK. Through an in-depth analysis of the data, Milton identified several themes that described a multidimensional experience of the self for this core of participants. He divided this multidimensional experience into several categories such as *self-self relations*, *spirituality*, *self-other relations*, and *emotional considerations* among others. One of these categories dealt specifically with the mindset of the fighter. The participants in Milton's study identified several key components about the mental strategies and skills required to be a fighter. These components included being more *focused*, *disciplined*, *relaxed*, *having confidence*, and *being in control of their emotions* during competition. All of the participants in this qualitative study were fighters by choice with more than 5 years of fighting experience, and provided a solid foundation, from their perspective, of what type

of mental skills are needed to succeed or survive in a competitive hand-to-hand combat environment.

Because the U.S. Army combatives program is based on the mixed martial arts principles, the skills identified in Milton's (2004) qualitative study must be taken into consideration when developing applied cognitive-behavioral intervention strategies for individuals attending mandatory training. In addition, it is believed that the combatives program targets specific emotional and motivational qualities of the soldiers, such as self-efficacy and anxiety along with teaching qualities. These qualities were examined in the present study.

Self-efficacy is associated with higher levels of motivation and adherence in a variety of activities (Bandura, 1986, 1997; Lane & Lane, 2002; Multon, Brown, & Lent, 1991), thus crucial for performing under combat conditions. In addition, individuals rely on their somatic and emotional states when judging their capabilities; therefore, they interpret their stress reactions and tension as signs of vulnerability to poor performance (Bandura, 1997).

Anxiety is an additional crucial component in the combative environment. To better capture state anxiety, consideration must be given to the person, the situation, and the ongoing interactive process (Gill, 2000). Because of its relationship with performance, anxiety has been studied extensively with athletes. Martens, Vealey, and Burton (1990) distinguished between cognitive and somatic state anxiety symptoms. Cognitive anxiety refers to the mental aspects of experiencing concern or worry about one's performance, and somatic anxiety refers to the individual's negative perceptions of physical arousal such as sweaty palms, butterflies, and shakiness. Individuals who experience higher levels of anxiety may choose avoiding a particular activity. Some evidence in the academic setting indicates that anxiety negatively affects motivation for studying (Tapia & Marsh, 2004; Sprengel & Job, 2004). It is assumed therefore that motivation to adhere to military tasks will be more evident in an environment where coping with anxiety is inherent occurrence.

Stress and anxiety have been studied in military settings because of the impact they can have on soldier performance. Barak, Bodner, Klayman, Ring, and Elizur (2000) studied the impact of stress on Israeli soldiers during the Gulf War. They evaluated 40 healthy soldiers who belonged to two different groups during the operation; combatants and auxiliary personnel. Their study revealed that individuals in combative-like situations are more affected by stress than those in auxiliary positions. Duarte, Ribas, and Ribeiro (2004) studied anxiety reactions during parachute jumping operations and found that when the environment becomes more challenging, such as during a night time parachute jump, the participants' levels of anxiety significantly increased. They concluded that there were not significant differences between more and less experience parachutists; therefore, the exposure to the training alone may have not been sufficient to minimize the anxiety levels of the participants. Harris, Hancock, and Harris (2005) evaluated military personnel after exposure to extended periods of stress, and identified significant decreases of psychological states and cognitive performance capacity. Wallenious, Larsson, and Johansson (2004) evaluated the cognitive performance of military observers during military operations, and reported anxiety as a possible contributor to self-reported cognitive limitations. These studies support the notion that, similarly to sport, anxiety can impact performance in military settings. The combatives environment in which this study will be performed, also presents changes in environmental stressors and demands; therefore, we can expect anxiety to influence the soldiers' self-efficacy, motivation, and performance as they participate in the training environment.

Cognitive-behavioral techniques

Cognitive-behavioral techniques, such as relaxation and imagery, are the most commonly used strategies for coping with anxiety (Williams & Leffingwell, 1996). Cognitive strategies, such as self-talk and schema reconstruction are used to identify and adjust problematic thinking that has the potential to negatively impact performance (Williams & Leffingwell, 1996). These techniques have been integrated into coping training programs such as Stress Inoculation Training (SIT), and Stress Management Training (SMT) that have been used successfully in different settings. Consequently, one of the current study's aims is to examine the effectiveness of cognitive-behavioral techniques in a mandatory combative training environment.

The purpose here was to study changes in soldiers' self-defense efficacy, self-efficacy for teaching combatives, levels of competitive state anxiety, and levels of motivation to participate in combatives training during of a one-week US Army CIT course and implementation of cognitive-behavioral intervention . It was expected that (a) combative self-efficacy would increase in both groups across the training period, but increases would be larger for the participants in the cognitive-behavioral intervention group than controls, (b) combative state anxiety before each fighting scenario would not change for the control group, but would decrease for the cognitive-behavioral group throughout the course.

Method

Participants

Participants were army soldiers (N = 52; 47 males and 5 females) attending three Army Combatives Level One Instructor Certification Courses in two military installations in the United States. Participants were predominately male with limited previous combatives training experience. They came from different army military occupational skills areas; however, the majority of them were in the combat arms field. The participants' age ranged between 18-47 years old. Thirty-eight participants volunteered for the combatives training while fourteen were ordered to attend by their leaders.

Instrumentation

Administrative Data Questionnaire. General information, such as age, gender, military rank and occupation, training status (volunteer or ordered to attend), and previous martial arts training outside of army combative was collected and was presented above.

Situational Motivation Scale (Guay, Vallerand, & Blanchard, 2000). The 16-item Situational Motivation Scale (Guay et al., 2000) is a measure of situational (or state) motivation toward a chosen activity. This self-report inventory contains four items per subscale, and is designed to measure intrinsic motivation, identified regulation, external regulation, and amotivation. Participants were asked to respond to the stem, "Why are you currently engaged in this activity?" Each item is rated on a 7-point Likert scale anchored by the descriptors of *corresponds not at all* (1) and *corresponds exactly* (7). Items aimed at measuring intrinsic motivation ask questions such as "Because I think that this activity is interesting". Those asking about identified regulation ask questions such as "Because I am doing it for my own good." Those aimed at external regulation ask questions such as "Because I am supposed to do it." Lastly, those aimed at amotivation ask questions such as "There may be reasons to do this activity but personally I don't see any". Standage, Duda, Treasure, and Prusac, (2003) reported the internal consistencies (Cronbach, 1951) for all

the subscales to equal or be above Nunnally's (1978) criteria of .70 deemed acceptable reliability in the psychological domain. In this study, observed alpha coefficients for intrinsic motivation and identified regulation measurements ranged between .87 - .91 and .77 - .87 respectively. Alpha coefficients for external regulation and amotivation measurements ranged between .83 - .87 and .77 - .85 before and after the course, respectively.

For this study, the *Self-Determination Index* (SDI; Grolnick & Ryan, 1987) was used to analyze the data gathered by the SMS. The SDI measures relative autonomy and self-regulated behavior. The SDI integrates scores of each motivation subscale into a single score corresponding to the participant's position on a self-determination continuum (Lemyre, Treasure, & Roberts, 2006). Grolnick and Ryan's (1987) formula for calculating the SDI is: (2 * Intrinsic Motivation + 1 * Identified Regulation) – (1 * External Regulation + 2 * Amotivation). The SDI approach employed in this investigation is also described in the Deci and Ryan's (2002) *Handbook of Self-Determination Research,* and has been utilized by several self-determination theory researchers (e.g., Vallerand & Bissonnettee, 1992; Vallerand, 1997).

Martial Arts Self-Efficacy Scale (MASES). The development of the MASES followed guidelines listed on the Information on Self-Efficacy, community of scholars' website and Bandura's (1997) book. It mirrors the format utilized by many self-efficacy studies over the past two decades. Bandura (1977, 1986a, 1986b) advocated using specific self-efficacy measures for the particular task, rather than assessing self-efficacy as a global disposition. This measure included subscales to measure Self-Defense Efficacy (SDE), and Teaching Self-Efficacy (TSE). It is composed of ten items that employ a 5-point Likert-type response format ranging from *1* (*strongly disagree)* to *5(strongly agree)*. Items number 4 and 9 are aimed at measuring self-efficacy for teaching martial arts skills. The remaining items are intended to measure self-efficacy for self defense. Items on this scale asked self-defense questions such as "to what degree do you believe that you can defend yourself if you are attacked?" and teaching combatives questions such as to "what degree are you confident that you can teach martial arts skills to others?" During this study, observed alpha coefficients for TSE measurements ranged between .92 - .97, and for SDE between .72 - .87 before and after the course respectively.

*State Anxiety Rating Scale (*Cox, Ruffin, & Robb, 1999*).* Cox et al. modified Martens, Vealey, and Burton (1990) Competitive State Anxiety Inventory (CSAI-2) to afford rapid assessment of competitive anxiety during participation in competitive activities. The three items on this scale measure, respectively, cognitive anxiety, somatic anxiety, and self-confidence. Because of the nature of the training, it was critical to obtain a quick and effective measure of anxiety prior to any significant event in training. The single item per construct measurement by this scale provides an accurate and speedy assessment of the individual's state anxiety prior to a fight situation on a daily basis. Each item employs a 5-point Likert-type scale ranging from 1 *(not at all)* to 5 *(very much)*. Results of previous investigations (Cox et al., 1998, 1999) have shown scores on the short version to be moderately correlated (.60 to .70) with anxiety and self-confidence components of Martens et al.'s (1990) original inventory. The results of the self-confidence item will be briefly discussed; however, the specific self-defense efficacy constructs are addressed by more relevant measurements. The item measuring cognitive anxiety asked, "I feel concerned about performing poorly, choking under pressure, and that others will be disappointed with my performance." The somatic anxiety item asked, "I feel jittery, my body feels tense, and my heart is racing." Because of the nature of the training, it was

critical to obtain a quick and effective measure of anxiety prior to any significant event in training. The single item per construct measurement by this scale provides an accurate and speedy assessment of the individual's state anxiety prior to a fight situation on a daily basis. During this study, the observed alpha coefficients were .81 for cognitive anxiety measurements and .87 for somatic anxiety.

Intervention

Participants in the intervention group received instruction on anxiety coping strategies while the control group did not receive any such instructions. The instructions were aimed at modifying combative training using Brent's (2004) model for cognitive-behavioral stress management intervention. The outline for the intervention was administered during two daily twenty minute sessions and presented the following areas of focus: (a) indentifying anxiety, how it is manifested, and how it relates to combatives? How to identify physiological, emotional, and psychological signs of combative anxiety, (b) teaching strategies to cope with anxiety, arousal regulation and Progressive Relaxation (c) teaching and practicing cognitive reconstruction for combative situations, and application of anxiety coping strategies (d) application of coping strategies, transferability of coping strategies to other combat situations, (e) introducing basic coping strategies to others.

Procedures

Following the provision of IRB approved informed consent form; soldiers completed all the self-efficacy and anxiety scales. Specifically, before the beginning of Day One training, soldiers completed the administrative data questionnaire, CSE scale, the SMS-SDI, and the SCAS. Prior to the combative sparring session occurring on each of the five days of the course, soldiers completed the SDTCSE and the SARS. On Day Three, the SMS was completed in addition to the SDSAS. After the training program concluded on Day Five, soldiers once again completed the CSES, SMS-SDI, and SAS.

Results

Self-Defense Efficacy (SDE)

The means and standard deviations for SDE scores at each measurement point for both intervention and control groups during the course are presented in Table 1. A mixed RM ANOVA was conducted to examine the observed trends in self-defense efficacy, and to identify if there were any significant differences between the two groups throughout the course. Figure 1 provides a depiction of the self-defense efficacy scores observed across the training course. Mauchly's test indicated that the assumption of sphericity had been violated in the repeated measures, $\chi^2(2) = 97.4$, $p < .01$, thus requiring the use of *Greenhouse-Geisser* estimates of sphericity ($\varepsilon = .55$) with adjusted degrees of freedom. SDE scores observed across the course differed significantly, $F(3.3, 166.1) = 35.2$, $p < .01$, $\eta^2 = .41$, and a significant positive linear trend was observed over the training course period, $F(1, 50) = 87.7$, $p < .01$, $\eta^2 = .64$. The trials by group interaction failed to reach significance, $F(3.3, 166.1) = .50$, $p > .01$, $\eta^2 = .10$. Though increase in self-defense efficacy was noted, there were not significant differences between the two groups, $F(1,50) = .22$, $p > .01$, $\eta^2 = .004$.

Teaching Self-Efficacy (TSE)

Mixed RM ANOVA was performed to test any significant changes in teaching self-efficacy. Table 1 depicts the teaching self-efficacy (TSE) scores of the two groups throughout the duration of the course. Figure 2 provides a depiction of the teaching self-efficacy scores across the training program. Mauchly's test indicated that assumption of sphericity was violated, $\chi^2(2) = 67.6$, $p <. 01$, and *Greenhouse-Geisser* estimates of sphericity ($\varepsilon = .63$) resulted in main effect for time, $F(3.7, 189.1) = 29.7$, $p < .01$, $\eta^2 = .37$ that was manifested as a significant positive linear trend, $F(1, 50) = 79.5$, $p < .01$, $\eta^2 = .61$. There was no significant group by time (trails) interaction, $F(3.7, 189.1) = .64$, $p > .01$, $\eta^2 = .13$. In addition, there were no significant differences between groups, $F(1, 50) = 2.14$, $p > .01$, $\eta^2 = .04$.

Table 1. Pre, during, and post-training self-defense efficacy (SDE) and teaching self efficacy (TSE)

	Self-Defense Efficacy						Teaching Self-Efficacy					
	Control			Intervention			Control			Intervention		
Measurement	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*
Pre	20	3.21	0.64	32	3.2	0.7	20	2.8	1.2	32	2.5	1.1
Day 1	20	3.33	0.58	32	3.3	0.5	20	3.05	0.95	32	2.6	1
Day 2	20	3.47	0.54	32	3.4	0.49	20	3.3	1.1	32	2.7	1.02
Day 3	20	3.66	0.54	32	3.6	0.5	20	3.47	1.2	32	3.2	0.96
Day 4	20	3.61	0.6	32	3.6	0.62	20	3.47	1.09	32	3.1	1.09
Day 5	20	3.93	0.62	32	3.9	0.54	20	3.77	1	32	3.5	0.99
Post	20	4.21	0.43	32	4	0.45	20	4.05	0.96	32	3.6	0.91

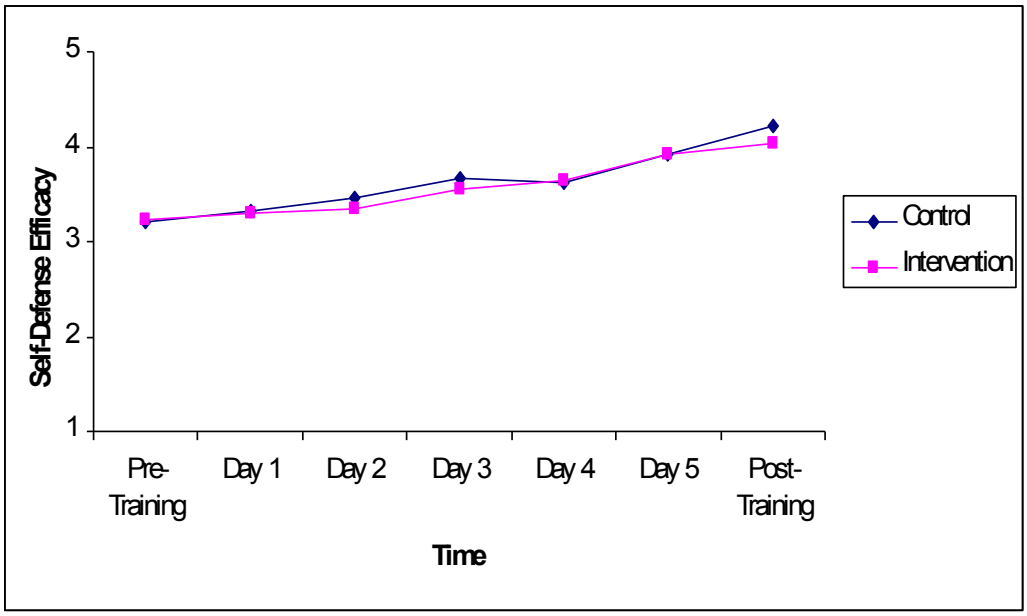

Figure 1. Self-Defense Efficacy

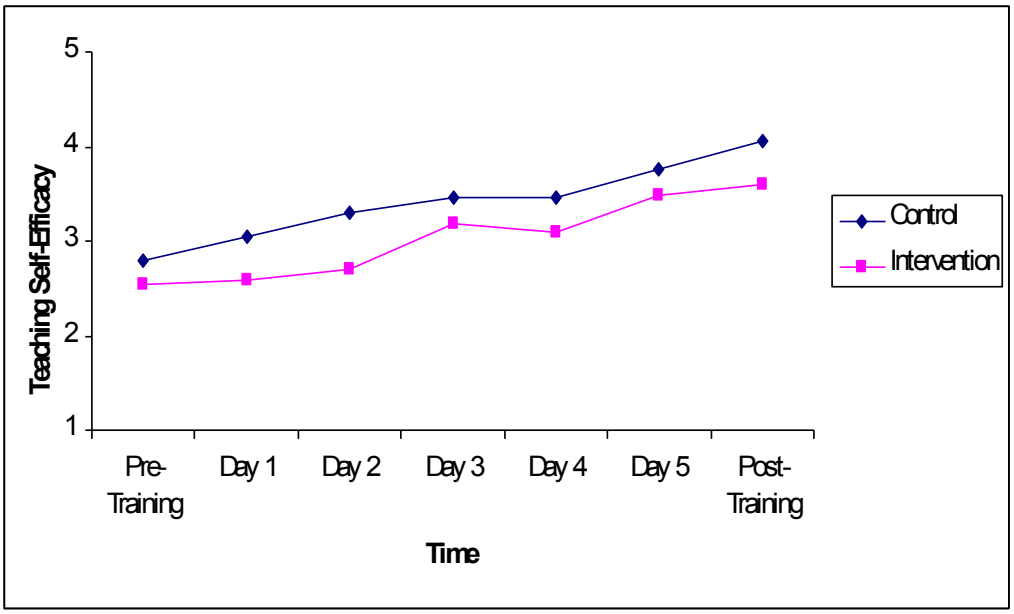

Figure 2. Teaching Self-Efficacy

Cognitive Combative State Anxiety (CCSA)

The mean scores for cognitive combatives state anxiety during the course of the study for all the participants are presented in Table 2. Figure 3 illustrates the changes in cognitive state anxiety during the course for both control and intervention groups. Mauchly's test indicated sphericity violation, $\chi^2(2) = 41.2$, $p <. 05$, thus using *Greenhouse-Geisser* procedure ($\varepsilon = .80$). A significant main effect for time was revealed, $F(4.8, 240.3) = 11.9$, $p < .01$, $\eta^2 = .19$ along with a linear trend, $F(1, 50) = 22.7$, $p < .001$, $\eta^2 = .31$. A significant group by time interaction was observed, $F(4.8, 240.3) = 3.53$ $p < .01$, $\eta^2 = .07$, but the group differences were non-significant, $F(1, 50) = .19$ $p > .01$, $\eta^2 = .004$.

To further explore the group by time interactions, independent samples' t-tests were conducted for each training day. Significant differences were found only on Day One ($p < .01$). Descriptively, the mean scores reflected a high level of cognitive anxiety during pre-training measures for the control soldiers. Measures reflected a decrease from pre-training means; however, increases on CCSA were noted until Day Four. For the control group, the highest cognitive anxiety mean score for a training day was observed on Day Four. Contrasting both groups during their transition from Day Three to the evaluated bouts on Day Four, a moderate effect size for the intervention was identified (*ES* = .44). On the other hand, the intervention group showed steady decreases of cognitive anxiety throughout the course to include day Four, and the highest state anxiety score was reported during pre-training measures.

Somatic Combative State Anxiety (SCSA)

The mean scores for SCSA during the course of the study for all the participants are presented in Table 2. Figure 4 illustrates the changes in somatic state anxiety during the course for both control and intervention groups. Mauchly's test indicated violation of sphericity assumption, $\chi^2(2) = 55.1$, $p <. 01$. *Greenhouse-Geisser* estimates of sphericity ($\varepsilon = .73$) was used and indicated a significant main effect for time, $F(4.3, 217.4) = 12.2$, $p <$

.001, $\eta^2 = .20$ that was manifested as a significant linear trend, $F(1, 50) = 9.04$, $p < .01$, $\eta^2 = .15$. A significant group by time interaction was also observed, $F(4.3, 217.4) = 3.97$ $p < .01$, $\eta^2 = .07$. The group differences were non-significant, $F(1, 50) = 2.77$ $p > .01$, $\eta^2 = .05$.

A series of independent sample t-tests were conducted to specify the group by time interaction. T-test results indicated that the two groups were significantly different on Day One – ($p < .01$), and Day Two ($p < .05$). Descriptively, the somatic combative state anxiety patterns are very similar to those reported for CCSA; however, somatic combative state anxiety increased for the soldiers in the control group from Days 2 and 3 to Day 4. For the control group, the highest somatic combatives state anxiety mean score for a training day was also observed during the evaluated bouts on Day Four. The intervention group soldiers showed steady decreases of somatic anxiety throughout the course to include Day Four. For the intervention group, the highest reported state of somatic anxiety was again noted during pre-training measurements. Even though the intervention group's CCSA also increased during Day 4, the level of somatic anxiety for that day was not as high as the one observed in the control group soldiers. When comparing both groups during the transition from Day 3 to Day 4, a large effect size for the intervention group was identified (*ES* = .91).

Table 2. Pre, during, and post-training Cognitive Combatives State Anxiety (CCSA) and Somatic Combatives State Anxiety (SCSA)

	Cognitive State Anxiety						Somatic State Anxiety					
	Control			Intervention			Control			Intervention		
Measurement	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*
Pre	20	2.95	1.4	32	2.87	1.2	20	2.55	1.2	32	3.00	1.2
Day 1	20	1.65	0.75	32	2.47	0.95	20	1.65	0.75	32	2.56	0.84
Day 2	20	1.95	0.94	32	2.28	0.85	20	1.65	0.74	32	2.18	0.93
Day 3	20	2.05	1.1	32	1.96	0.59	20	1.75	0.85	32	2.18	0.73
Day 4	20	2.60	1.3	32	2.15	0.99	20	2.80	1.1	32	2.50	0.95
Day 5	20	1.80	0.95	32	1.96	0.93	20	1.80	0.83	32	2.09	0.92
Post	20	1.90	0.91	32	1.78	0.91	NA	NA	NA	NA	NA	NA

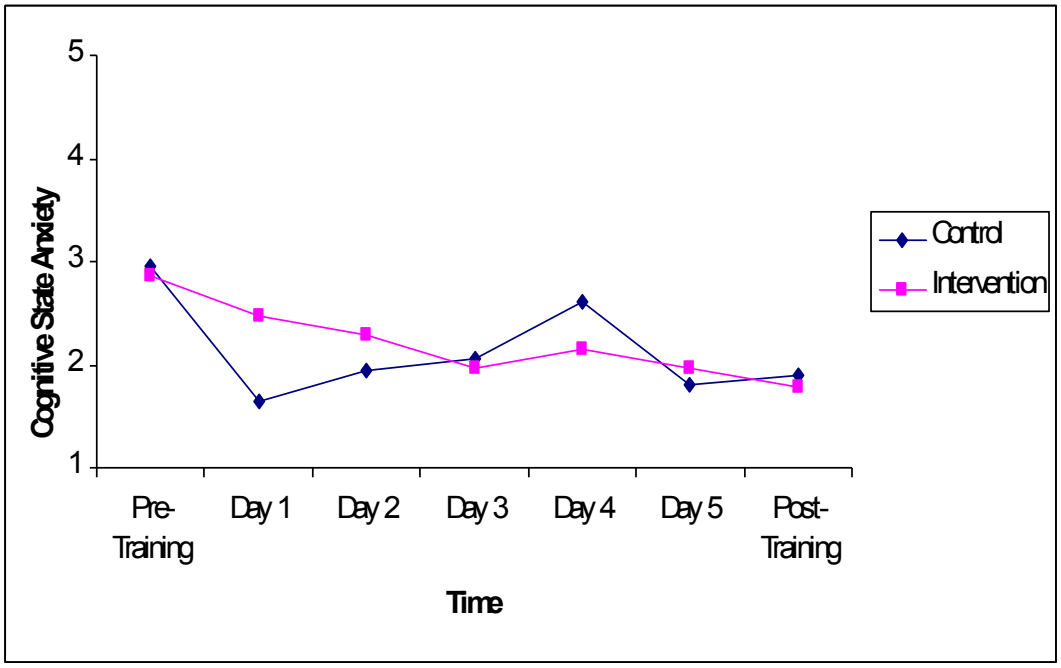

Figure 3: Cognitive State Anxiety

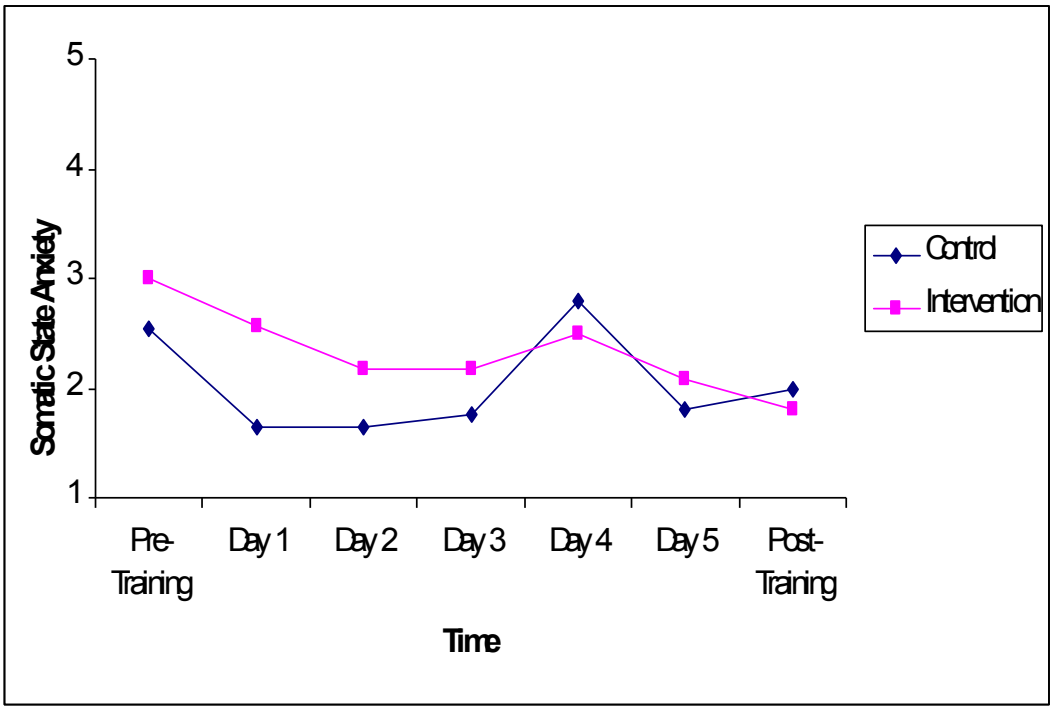

Figure 4: Somatic State Anxiety

Motivation

Table 3 and Figure 5 illustrate the SDI scores for both groups at the three measurement points. Mauchly's test indicated sphericity violation, $\chi^2(2) = 15.9$, $p < .01$, *thus* Greenhouse-Geisser *estimates of sphericity* ($\varepsilon = .78$) *were used, indicating self-determination increased significantly throughout the course of study,* $F(1.6, 78.2) = 5.29$, $p < .01$, $\eta^2 = .10$, *with a significant linear trend,* $F(1, 31) = 5.8$, $p < .01$, $\eta^2 = .16$. *The group by time interaction was non-significant,* $F(1.6, 78.2) = .19$, $p > .05$, $\eta^2 = .004$, *and no group effect was observed,* $F(1, 50) = .09$, $p > .01$, $\eta^2 = .002$.

Table 3. Pre, mid, and post-training Self-Determination Index (SDI)

		Self-Determination Index (SDI)				
		Control			*Intervention*	
Measurement Occasion	*n*	*M*	*SD*	*n*	*M*	*SD*
Pre-Training	20	9.45	6.7	32	9.59	8.4
Mid-Training	20	9.54	6.3	32	10.23	6.4
Post-Training	20	10.86	6.18	32	11.65	5.7

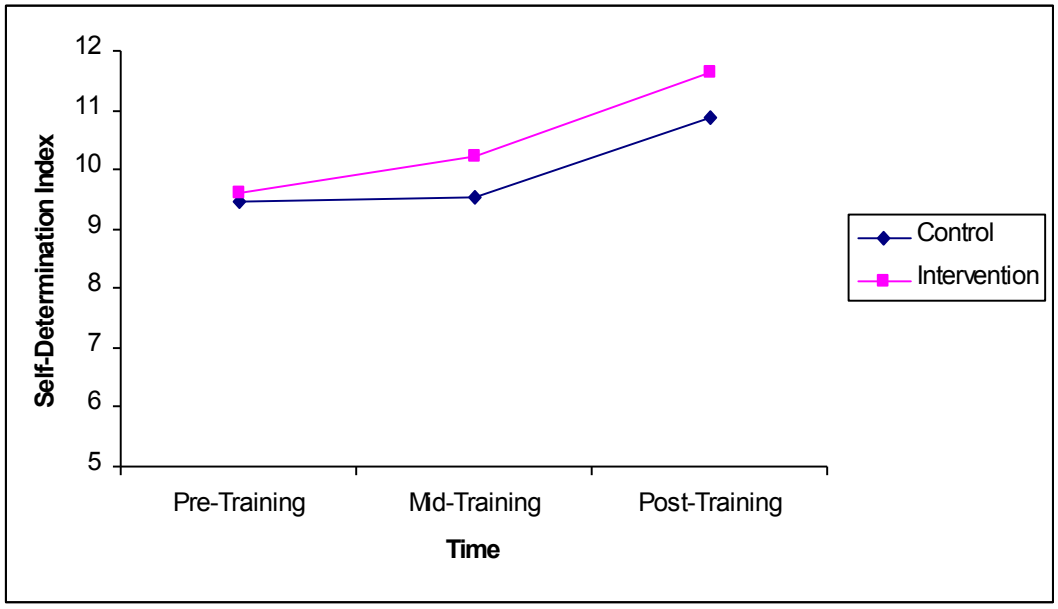

Figure 5. Self-Determination Index

Discussion

The results of this study indicate that combative self-efficacy increases after participation in the 40-hour Army combatives instructor program. The training was found to improve soldiers' belief that they can defend themselves and that they can teach these techniques to others. For the purpose of this study, the results only provided partial evidence to support the first assumption, stating that combatives self-efficacy would increase in both groups, but increases will be stronger for the soldiers in the intervention group. While both groups increased in combatives self-efficacy, the control group ended the course with higher levels of self-defense efficacy and teaching self-efficacy. However, supporting Bandura's theory that learning how to interpret bodily states is a major contributor to self-efficacy beliefs, the intervention group participants demonstrated higher levels of self-defense efficacy during the critical evaluated bouts on Day Four and competitive setting on Day Five. Because of the competitive associated with the events on these two training days, the environment tends produce higher levels of stress and anxiety than the other days of just training. Descriptively, it appears that individuals who were exposed to the PST protocol during the course were able to sustain their development of self-defense efficacy throughout the training program.

It was also expected that the levels of combatives state anxiety would decrease across the course for the intervention group participants, and would remain stable for the control group. Findings revealed significant changes in combatives state anxiety throughout the course for both groups. Descriptively, observed cognitive and somatic state anxiety means appeared to increase on Day Four of the training for both groups. In a combative setting, the appraisals that lead to anxiety include many factors that can change from day-to-day or from situation to situation in line with Lazarus's (1993) contention; therefore, it is assumed that the environmental demands presented during Day Four of the training may have influenced the participants' appraisal. On the other hand, soldiers exposed to anxiety coping strategies showed significantly lower anxiety scores than soldiers in the control group for Day Four measures. In line with Williams and Leffingwell (1996), and Brent (2004) findings psychological skills training appear to have a positive effect on anxiety responses even after a short-term exposure to the strategies.

Theoretically speaking, an appraisal that includes a belief that one can perform the activity should contribute to lower levels of state anxiety. The results of this study showed a slight decline in self-efficacy for the control group when the environment became more challenging or stressful. From the early studies of self-efficacy in sports settings there always been a negative relationship between anxiety and self-efficacy (Bandura, 1986; Feltz, 1982; Litt, 1988). Analogous relationship was obtained in the current study. For example, on Day Four of the training, all soldiers' self-defense combative skills were assessed, an event considered stressful. On this day, control group participants scored the highest somatic and cognitive anxiety, while at the same time showing a decline on their SDE levels. On the other hand, soldiers exposed to cognitive-behavioral intervention did not show a decline in self-defense efficacy during Day Four, but reported lower levels of cognitive and somatic anxiety than their counterparts. It is not suggested that there is a direct causal relationship between self-efficacy and anxiety; however, the fact that self-efficacy increased in soldiers of the control group, and then took a noticeable decline when the environment became more stressful, while the soldiers learning to control their state anxiety did not, is a concept that should be further explored in mandatory training settings.

The findings of this study suggest that the cognitive-behavioral strategy targeted at reducing combative state anxiety was somewhat successful, and aided the participant in

controlling their combatives state anxiety while retaining their steady progression in self-defense efficacy.

There were no noticeable differences in intrinsic motivation between the intervention and control groups during pre-training measures. Findings revealed significant changes in motivation for the intervention group, but relative stability for the control group. Intrinsic motivation and self-regulation have been positively associated with continued participation in a variety of activities (Frederick-Recascino, & Schuster-Smith, 2003; Frederick, Morrison, & Manning, 1996; Ryan et al., 1997; Tsorbatzoudis et al., 2006). As noted, self-determined behavior is critical for the success of the combatives program. In this study, the results appear to indicate that in mandatory settings, when individuals learn to control and have a better interpretation of their state anxiety, their motivation to self-determine behavior towards that activity can also increase. In sport and exercise settings, not many studies evaluated the relationship between anxiety and motivation. In other domains (academic and social relationships), it has been demonstrated that lower levels of anxiety are associated with higher levels of motivation (Tapia & Marsh, 2005; Sprengel & Job, 2004). This study provides a starting point for studying the relationship between motivation and anxiety in competitive settings that should be further explored.

The current study has several limitations. Because evaluations were made in actual combatives training courses, soldiers could not be randomly assigned to the respective experimental and control groups. In addition, the small number of individuals attending the training limits the statistical power of the study. Only 14 participants reported that they were ordered to attend the training. Due to this small number, inferential evaluations may not identify significant differences when comparing these particular groups. However, the descriptive evaluation presents an accurate depiction of what these individuals experienced during the training.

The Army wide mandatory combatives training is new phenomenon with significant implications to soldier readiness and national security. The ability of soldiers to face their enemy in combat is one of the most critical skills they can possess and they do not have the option to avoid learning these critical skills. Facing an enemy, known or unknown, may lead these warriors to produce certain emotions such as fear and anxiety. In this study, it appears that exposure to the combatives training alone may not be sufficient for the soldiers to learn regulating emotions that may support increases in self-efficacy, and that the integration of combatives anxiety coping strategies is useful in this process. In accordance with Bandura (1997), *enhancing physical status*, *reducing stress levels and negative emotional proclivities*, *and correcting misinterpretation of bodily states* is a major way of altering efficacy beliefs. If participants, even those in mandatory status, learn how to regulate their arousal levels and find their optimal zone of performance, they may be able to gain more from the training environment. Therefore, combatives specific coping strategies should be implemented as part of the combatives training to assist soldiers with the development of their overall combatives self-efficacy, state combatives anxiety, and how these variables impact motivation for continued participation.

Anxiety coping strategies have proven useful in reducing state anxiety and helping the individuals' enjoyment of a variety of experiences (Altmaier, Ross, Leary et al., 1982; Hussain & Lawrence, 1978; Smith, 1980). In this study, participants who were exposed to anxiety coping strategies were able to sustain self-defense efficacy and control their anxiety during stressful conditions, such as evaluations and competitions. Lower

levels of state anxiety also positively impacted these participants' intrinsic motivation and self-determine behavior.

The intervention presented during this study can be used to improve the combatives experience of individuals ordered to attend the training as well as those who volunteered for the training that are affected by high levels of combatives state anxiety. Confident leaders who are in control of their emotional responses during combatives situations will contribute to the program objectives, and in turn may impact the development of future warriors.

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