

RUNNING HEAD: STRIVINGS IN WAR VETERANS

Everyday strivings in war veterans with posttraumatic stress disorder: Problems arise when avoidance  
and emotion regulation dominate

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### Abstract

This research investigated whether combat veterans' daily strivings are related to the presence of post-traumatic stress disorder (PTSD) and well-being. Veterans created a list of their most important strivings which were content-analyzed for emotion regulation and approach or avoidance themes. It was hypothesized that veterans pursuing strivings with themes of emotion regulation or avoidance experience deleterious consequences compared with other veterans. For all veterans, devoting finite time and energy in daily life to regulating emotions was associated with less purpose, meaning, and joy compared with other strivings. Veterans with PTSD endorsed more strivings related to emotion regulation and devoted considerable effort to emotion regulation and avoidance strivings. Yet, these efforts failed to translate into any discernible benefits; veterans without PTSD derived greater joy and meaning from strivings focusing on approach oriented behavior and themes other than emotion regulation. The presence of PTSD and a high rate of emotion regulation strivings led to the lowest global well-being and daily self-esteem during a 14-day assessment period. The presence of PTSD and a high rate of avoidance strivings also led to lower emotional well-being. Results indicate that strivings devoted to regulating emotions or avoidance efforts influence the mental health of veterans with and without PTSD. Studying personality at different levels of analysis—traits, strivings, and life narratives—allows for a fine-grained understanding of emotional disorders.

**Keywords:** goals; emotion regulation; experiential avoidance; posttraumatic stress disorder; well-being

Everyday strivings in war veterans with posttraumatic stress disorder:

Suffering from a hyper-focus on avoidance and emotion regulation

Posttraumatic Stress Disorder (PTSD) is characterized by clusters of psychological symptoms including recurrent and intrusive memories of the traumatic event, emotional numbing, and hypervigilance to potential threat cues (American Psychiatric Association [APA], 2000). Although people diagnosed with PTSD may experience common symptoms, it is reasonable to expect variability in how these symptoms affect everyday functioning. To understand veteran functioning, it may be useful to consider more than the presence or absence of disorder. In this paper, we examine veterans' strivings and the ways veterans allocate finite resources (e.g., time, attention, finances) to understand how certain strivings may be detrimental to mental health. In particular, we were interested in the potential costs of enduring efforts to (1) avoid negative outcomes (instead of approaching rewards) and (2) regulate and control emotions.

A considerable literature describes relations between PTSD and personality traits (Ozer, Best, Lipsey, & Weiss, 2003) without addressing how PTSD influences a person at higher levels of analysis such as personal strivings (Little, 1983; McAdams, 1996). Personal strivings are the conscious, central projects that people think about, plan for, and allocate resources toward (Emmons, 1986, 1989). Often strivings lack definite endpoints and instead, provide guidance for navigating the shoals of everyday life. Strivings serve as a compass directing people toward cherished interests and values across time. For example, an adult male may strive to "be a good father." Strivings provide information about what a person wants as well as the type of person they wish to be. We were interested in how veterans, with and without PTSD, use personal strivings to structure their lives. To aid our examination, we review indirect findings that suggest PTSD is associated with enduring efforts (strivings) to avoid aversive outcomes and regulate negatively evaluated thoughts and emotions.

#### *PTSD as a Self-Regulatory Disorder*

Amidst the constellation of symptoms that define PTSD is an explicit assumption that people with this diagnosis are unable to effectively manage their emotions to suit the demands of different situations. Recent theoretical models suggest that a central feature of PTSD is a pathological disruption in self-regulation (Batten, Orsillo, & Walser, 2005; Ehlers & Clark, 2000; Litz, 1992). Self-regulation describes the efforts, either conscious or non-conscious, that people take to alter emotional and behavioral

responses. These efforts are crucial to everyday success and well-being. A self-regulatory approach emphasizes the difficulties that people with PTSD have in performing acts of self-regulation and how this difficulty contributes to distress, impairment, and diminished quality of life. An entry point into this work is the emotional numbing symptoms of PTSD and the related concept of experiential avoidance.

After being exposed to the sounds and scenes of warfare, combat veterans with PTSD showed less facial-motor activity in response to positive, reward cues than combat veterans without PTSD (Litz, Orsillo, Kaloupek, & Weathers, 2000). Being numb to environmental rewards following a trauma described in this and other research (Orsillo, Batten, Plumb, Luterek, & Roessner, 2004) is similar to the notion of an automatic, conditioned analgesia, which has been observed in animals exposed to uncontrollable stressors (Foa, Zinberg, & Rothbaum, 1992). This work suggests that PTSD is accompanied by a specific type of self-regulatory difficulty in which emotional states are overregulated.

Emotion overregulation and numbing appears to disrupt reward seeking and responsiveness in people with PTSD (Litz et al., 2000; Orsillo et al., 2004). Some theorists suggest that time and effort devoted to self-regulation diminishes contact with present experiences and interferes with progress toward valued goals (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). The inefficient allocation of resources to suppress traumatic material, conceal emotions, avoid events that might elicit unwanted feelings, and regulate responses to trauma cues are expected to have a compound effect on other goal-directed behavior (Ehlers & Clark, 2000). This is because people have a limited amount of energy, attention, and self-control at any given time and over-exertion drains finite resources (Muraven & Baumeister, 2000). As a result of this endemic resource drain, veterans with PTSD are expected to be less capable of pursuing approach oriented goals and less likely to make progress toward aspirations.

Overlapping with emotional numbing and resource depletion models, a considerable literature has accumulated on experiential avoidance. Experiential avoidance reflects tendencies to negatively evaluate particular feelings, thoughts, and bodily sensations; an unwillingness to tolerate these internal events; and the desire to control and extinguish these events (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Ultimately, the goal of avoidance is to regulate a person's unwanted emotional, cognitive, and behavioral reactions (e.g., anxiety) by minimizing contact with events that caused them in the past and might elicit them in the future. When a person avoids exposure to unwanted experiences they limit

opportunities to disconfirm or change belief systems about potential threat and danger. Thus, reactions and avoidance patterns are reinforced. Moreover, avoidance processes may, unintentionally, constrict a person's life space. The internal struggle with their emotions pulls them away from rewarding experiences and well-being. Their life is put on hold until anxiety is managed, which unfortunately, will never happen because it is a natural, useful emotional experience.

There is ample empirical support for experiential avoidance as a problematic process linking trauma to diminished well-being. In prospective studies of trauma survivors, experiential avoidance predicted PTSD symptom severity beyond the contributions of trauma severity and baseline distress (Plumb, Orsillo, & Luterek, 2004) and the maintenance of PTSD (Marx & Sloan, 2005). Experiential avoidance partially (Polusny, Rosenthal, Aban, & Follette, 2004) and fully (Marx & Sloan, 2002; Orcutt, Pickett, & Pope, 2005; Reddy, Pickett, & Orcutt, 2006; Rosenthal, Hall, Palm, Batten, & Follette, 2005) mediated the effects of trauma on psychological distress. Even when avoidance was not an explicit goal, shifting attention away from internal experiences has been shown to increase negative affect in combat veterans with PTSD (Monson, Price, Rodriguez, Ripley, & Warner, 2004).

Experiential avoidance is arguably the result of conditioning processes that link internal experiences with threat and danger (Hayes et al., 1996). Despite conceptual overlap between PTSD and experiential avoidance, there is evidence for their distinctiveness. First, the internal experiences that are evaluated negatively and avoided extend beyond the content of any particular disorder. Second, a number of people with anxiety disorders do not differ from their healthy peers in terms of the frequency and intensity of concealing and avoiding particular emotions (e.g., Craske & Hazlett-Stevens, 2002). These data are suggestive of the idea that only people with anxiety disorders *and* an over-reliance on avoidance will show compromised well-being.

One way to extend this line of work is to examine self-regulatory processes in trauma survivors at a different level of analysis. Prior research has shown that people with PTSD are a heterogeneous group in terms of their emotional reactivity (Keane et al., 1998) and reliance on particular self-regulatory strategies (for review, see Ehlers & Clark, 2000). Most of this work has focused on trait measures of emotion regulation or laboratory stressors. We examined these processes at a higher level of analysis focusing on the degree to which combat veterans' strivings reflect avoidance (compared to approach) and

emotion regulation. No known studies have applied striving theory and methodology to understand how PTSD and self-regulation operate in trauma survivors.

### *Personal Striving Content and Consequences*

Strivings are formed within the context of a person's unique life experiences and provide an organizational framework that helps people structure their lives around meaningful themes and life projects (Emmons, 1986, 1989). Thus, we might expect significant variability in striving content and related outcomes within any sample. This extends to veterans with and without PTSD. For example, some people may focus on reward seeking (e.g., initiating a conversation with an attractive stranger) whereas others may strive to avoid situations that make them feel uncomfortable. Using an approach-avoidance distinction, people may seek to get rid of an existing negative or prevent a negative possibility (avoidance strivings) or nourish positive rewards or seek them out (approach strivings) Research shows that people tend to make less progress towards avoidance strivings and feel less competent at achieving them. Furthermore, these lowered perceptions of progress and competence are directly linked to reductions in well-being over time (Elliot & Sheldon, 1997; Elliot, Sheldon, & Church, 1997). Thus, chronically working to minimize unwanted outcomes in everyday life, is an inefficient and ineffective use of personal resources.

Compared with avoidance oriented strivings, there is less research to guide predictions about emotion regulation strivings. For the purposes of the present study, emotion regulation strivings are defined as those intended to eliminate, reduce, strategically maintain, or increase the experience of any emotional state. The essential feature is an intentional attempt to modulate emotional responses. Emotion regulation strivings might be particularly problematic for people diagnosed with PTSD due to the conflict between striving to manage everyday emotions and the ongoing emotional disturbances characteristic of the disorder. These excessive expenditures would leave few resources available for other meaningful endeavors and limit well-being. In contrast, being open and receptive to emotional experiences, regardless of form or content, has been linked to greater psychological, physical, and social well-being (Brown, Ryan, & Creswell, 2007; Colby & Emmons, 1997; Kashdan & Steger, 2006). Instead of waiting until emotions are under control, trauma survivors may derive greater benefits from devoting effort toward interests, passions, and aspirations regardless of the presence of aversive thoughts or feelings.

### *The Present Study*

The present study explored evidence for experiential avoidance and self-regulation in idiographic personal strivings and how this content differed between war veterans with and without PTSD. We expected war veterans with PTSD to have a greater percentage of strivings that emphasized avoidance and emotion regulation. We also expected veterans with PTSD to report greater effort spent towards avoidance and emotion regulation strivings. We did not, however, believe that these efforts would translate into psychological benefits. Specifically, veterans with PTSD with a higher rate of avoidance or emotion regulation strivings were expected to make less progress, and derive less joy and meaning from their efforts. Moreover, both the presence of PTSD and a high rate of avoidance or emotion regulation strivings were expected to be associated with compromised well-being.

### Method

#### *Participants*

Our clinical sample was comprised of consecutive male patients in outpatient ( $n = 16$ ) and 26-day specialized residential ( $n = 17$ ) treatment programs for veterans suffering from combat-related PTSD at the Veterans Affairs (VA) Medical Center in Buffalo, New York. Of consecutive patients invited to participate, only one outpatient and two residential veterans declined. Both programs consisted of cognitive-behavioral individual and group treatments. The major difference was that the residential program included daily psychoeducation and process groups. Admission criteria for the residential program included psychiatric stability and compliance with available outpatient treatment. Reasons for referral to residential treatment included barriers to outpatient treatment (e.g., excessive geographical distance) and desire for more intensive treatment. Of the outpatients in our sample, 70% previously served in the residential program. Our non-clinical sample was a randomly selected set of veterans from a list of VA patients without a history of PTSD living in the same city as the VA Hospital ( $n = 28$ ). Diagnoses were determined using up-to-date VA hospital evaluations and records.

All outpatient and residential veterans were diagnosed with PTSD based on a) diagnoses derived from unstructured clinical interviews with treatment program staff psychologists, psychiatrists, or clinical social workers, b) Mississippi Scale for combat-related PTSD scores greater than 107 (suggested clinical cutoff; Keane, Caddell, & Taylor, 1988), and c) verification of combat exposure with DD-214's (i.e.,

military transcript of combat exposure, receipt of military awards, and service dates). Data were excluded from two “PTSD” outpatient and four residential “PTSD” patients whose scores on the Mississippi Scale were *less than* 107 and one non-clinical veteran whose score was *greater than* 107. Similar procedures were used for the non-clinical sample to evaluate the absence of past or present PTSD diagnoses (i.e., periodic assessments by psychiatry staff recorded in the central database).

Our final sample with complete data for analyses included 27 veterans in our clinical group and 27 veterans in our non-clinical comparison group. There were no differences between the clinical and non-clinical group in age (clinical mean = 53.96,  $SD = 5.45$ ; non-clinical mean = 55.93,  $SD = 7.69$ ) or education (only one person in the clinical and one person in the non-clinical group didn’t complete high school; 33.3% of the clinical group and 29.6% of the non-clinical groups graduated college or beyond). The samples differed in ethnicity (for clinical, 86% Caucasian and 14% African-American; for non-clinical, 59.3% Caucasian and 40.7% African-American), marital status (for clinical, 80% married, 5% divorced, and 15% single or dating; for non-clinical, 45% married, 16% divorced, and 36% single or dating), and Mississippi scores (clinical mean = 126.19,  $SD = 20.04$ , range = 94 - 163; non-clinical mean = 77.42,  $SD = 10.31$ , range = 62-103). However, none of these variables influenced any of the subsequent analyses. Thus, results with covariates other than Mississippi scores (PTSD severity) are not reported.

### *Procedures*

All participants completed the striving assessment packet, questionnaires, and at least half of the 14 possible entries for the daily record portion of the study (mean = 13.5, range = 9-14); this criterion ensured a reliable cross-section of naturalistic behaviors and experiences. Consenting participants completed a packet of self-report questionnaires in group sessions (up to 10 participants). At the end of sessions, participants were given instructions for completing 14 consecutive daily record entries before the end of each day. An experimenter went over each item to ensure that participants understood definitions and instructions. Participants were provided with materials to mail the daily records after every few days of assessment.

### *Personal Strivings*

Each participant was provided with an open-ended format to generate a list of eight strivings that are the foundation for many of their everyday decisions and behaviors (Emmons, 1986, 1989). They were

given an instruction page that defined personal strivings (e.g., “an objective that you are typically trying to accomplish or attain,” “goals or purposes that motive us”), provided examples (e.g., “trying to be a good role model to others,” and “trying to avoid feeling inferior to others”), and told them that strivings could be positive or negative, something that is approached or avoided.

After compiling lists, participants completed additional questions about each striving. To maximize independent ratings, the experimenter transcribed each striving onto a separate form. Thus, participants evaluated one striving completely before moving to the next. Each striving was rated on 5-point Likert Scales from “1” (strongly disagree) to “5” (strongly agree) on six dimensions concerning the past month: 1) I made progress, 2) I expend a lot of effort and energy in trying to be successful in this striving, 3) I derive a sense of purpose and meaning from this striving, 4) I experience a great deal of joy when I am successful in this striving, 5) significant others support me in this striving, and 6) this striving is important to me and I am committed to it.

Strivings were objectively coded for evidence of approach/avoidance and emotion regulation themes by two raters unaware of participant details (e.g., PTSD status) and none of the strivings revealed information about diagnostic status. Coders did not have access to the ratings participants made about their strivings. Rater training required approximately 30 hours of discussions on assigned readings (relating to strivings, goals, and emotion regulation) and instruction in evaluating striving protocols from other studies conducted by the first author. Weekly meetings were held to discuss ratings.

After this training, each rater independently read and coded the strivings of each participant in the present study. Each striving was given a score of -1 for avoidance and 1 for approach and -1 for no evidence of emotion regulation and 1 for emotion regulation. The approach/avoidance category was derived from Emmons’ striving coding system. For approach/avoidance, raters assessed whether the person wished to approach, obtain, achieve or keep the object of the striving or if they wished to avoid, prevent, or get rid of the object of the striving. Among other issues was whether the person tried to avoid or not do something, which would be a clear indication of avoidance striving. Evidence for the validity of this approach-avoidance coding system stems from research showing that a greater ratio of avoidance (relative to approach) strivings is inversely related to mental health and well-being outcomes (e.g., Coats et al., 1996; Elliot & Sheldon, 1996, 1998; King, Richards, & Stemmerich, 1998). In therapy, clients reporting

a greater ratio of avoidance oriented treatment goals experienced less satisfaction with therapists, less perceived goal progress, and fewer treatment gains over 12 sessions (Elliot & Church, 2002).

For the emotion regulation category, the striving had to concern emotion and required explicit reference that people were monitoring, managing, or attempting to change their experiences or the expression of them. The focus could be enhancing positive emotions or avoiding stress, anxiety, or other negative emotions. Even if the content of the striving reflected thoughts, images, or bodily sensations, it could be coded as emotion regulation. This is consistent with cognitive reappraisal as a dominant emotion regulation strategy which includes attempts to change emotions by altering the way the self, others, or events are evaluated. See Appendix A for more details on the coding scheme created for this study.

Meetings were held after every three participants to prevent behavioral drift. Disagreements were discussed until a consensus was reached. For analyses, we used data from consensual agreements made between raters. We created striving indices by aggregating the number of approach strivings and emotion regulation strivings, respectively. Both raters coded all available narratives. Reliability was calculated using the two-way random intraclass correlation coefficient (ICC). Reliability was acceptable for approach-avoidance (ICC = .87) and emotion regulation (ICC = .75) categories.

#### *Self-Report Measures*

*PTSD.* Using a 5-point Likert Scale, veterans completed the 35-item Mississippi Scale to assess combat-related PTSD symptoms (Keane et al., 1988) ( $\alpha = .84$ ). The Mississippi Scale has shown excellent sensitivity and specificity in predicting PTSD diagnoses derived from structured clinical interviews (Keane et al., 1988). The total score was used in subsequent analyses.

*Well-Being Questionnaires.* Using a 4-point Likert Scale, the 18-item *Well-Being Scale* (WBS; Tellegen, 1982) measured tendencies to feel good about oneself, optimistic beliefs, and general joyfulness ( $\alpha = .90$ ). The WBS has been shown to have excellent psychometric properties (e.g., Lykken & Tellegen, 1996; Waller, Kojetin, Lykken, Tellegen, & Bochard, 1990).

#### *Daily Record Measures of Emotional Well-Being and Self-Esteem*

Daily record items were completed using 5-point Likert Scales with higher scores reflecting greater well-being. Participants provided up to 14 daily reports on six positive affect adjectives (PA; happy, proud, interested, determined, strong, and energetic) and six negative affect adjectives (NA;

anxious, frustrated, angry, irritable, afraid, and depressed). From these measurements, we created an index of daily affect balance by subtracting NA from PA each day with higher scores reflecting greater well-being (Diener, Larsen, Levine, & Emmons, 1985). In addition, four items from the Rosenberg Self-Esteem Scale (items 3, 6, 7, and 10; Rosenberg, 1965) were modified to assess daily self-esteem. This 4-item daily self-esteem scale has been shown to have excellent reliability and validity in prior daily record studies (Nezlek & Plesko, 2001; Nezlek, Feist, Wilson, & Plesko, 2001).

## Results

### *Overview of Analytic Techniques for Striving Outcomes*

The data were hierarchically structured with 426 strivings nested within 54 people (because 6 people reported only 6 strivings). Thus, the data were analyzed with a series of multilevel random coefficient models using the program HLM (version 6.0; Raudenbush, Bryk, Cheong, & Congdon, 2000). Coefficients representing the categories and processes of each striving were estimated for each person (Level-1) and individual differences in these coefficients were estimated (Level-2). Level-1 variables were person-centered and Level-2 variables were grand-mean centered, with the exception that binary variables were entered uncentered into analyses.

### *Preliminary Analyses*

There were no significant group differences between the final sample and veterans excluded for not completing study materials. In addition, there were no significant group differences between outpatient and residential veterans with PTSD on demographic, predictor, or outcome variables. Thus, we used a single sample of veterans with PTSD.

We conducted an initial analysis to determine whether our emotion regulation dimension of strivings was redundant with the more widely studied approach/avoidance dimension. We analyzed the relation between our categorical approach/avoidance and emotion regulation dimensions using a Bernoulli model and the non-linear model specification of HLM (Raudenbush et al., 2000). These analyses found that of the strivings coded as emotion regulation, there was a 40% probability that they were also coded as approach and a 60% probability that they were coded as avoidance. Thus, these striving dimensions were relatively independent.

Other preliminary analyses focused on summary statistics for striving variables and differences between veterans with and without PTSD on these striving variables. Surprisingly, there was no significant difference in the proportion of approach strivings between veterans with PTSD ( $M = 6.25$ ,  $SD = 1.68$ ) and without PTSD ( $M = 6.85$ ,  $SD = 1.53$ ),  $t(52) = -1.52$ ,  $p = .13$ . Veterans with PTSD endorsed more than twice as many strivings related to emotion regulation ( $M = 2.08$ ,  $SD = 1.69$ ) compared with veterans without PTSD ( $M = 1.00$ ,  $SD = 1.62$ ),  $t(52) = 3.53$ ,  $p = .001$ . As reported in Table 1, the reliability of all striving variables was acceptable and veterans with PTSD reported significantly less progress and more obstacles when working toward strivings over the past month.

### *Striving Content as Predictors*

We tested predictions that the benefits of strivings would be dependent on the types of strivings being pursued. We hypothesized that veterans would report greater benefits when pursuing approach compared with avoidance strivings and lesser benefits for emotion regulation compared with non-regulation strivings. To test the construct specificity of our new category of emotion regulation strivings, both striving categories were modeled simultaneously. As an illustration, we modeled whether approach compared with avoidance strivings led to greater joy when successful.

Level-1 model:  $y_{ij} = \beta_{0j} + \beta_{1j}(\text{approach striving}) + \beta_{2j}(\text{emotion regulation striving}) + r_{ij}$

Level-2 model:  $\beta_{0j} = G_{00} + U_{2j}$

In this model, at Level-1,  $y_{ij}$  is the joy derived from successful efforts (dependent variable) for participant  $j$  for striving  $i$ ,  $\beta_{1j}$  refers to the relation between approach strivings and joy derived from them and  $\beta_{2j}$  refers to the relation between emotion regulation strivings and joy derived from them. At Level-2,  $G_{00}$  accounts for the non-independence of each striving. As shown by the random error components ( $r_{ij}$  and  $U_{2j}$ ), the intercepts and slopes were treated as random effects.

Veterans derived less purpose and meaning,  $t(53) = -3.18$ ,  $p = .003$ , and joy,  $t(53) = -2.44$ ,  $p = .02$ , from emotion regulation compared with non-regulation strivings, whereas approach/avoidance strivings failed to show significant relations with these outcomes ( $ps = .35$  and  $.73$ , respectively). The types of strivings endorsed by veterans, approach (relative to avoidance) and emotion regulation (or not) were unrelated to progress, obstacles, or effort in the past month. Thus, striving to regulate emotions was associated with poor goal-related outcomes independent of approach/avoidance distinctions.

*PTSD as a Moderator of Striving Content Effects*

Building on the prior results, we examined whether veterans with and without PTSD differ in the effort and progress toward, and benefits obtained from, particular strivings. That is, we were interested in PTSD as a moderator of within-person relations between striving content and processes. It was hypothesized that veterans with PTSD devote more effort and make more progress toward regulating emotions and experiential avoidance but derive minimal benefits. In contrast, veterans without PTSD were proposed to devote more effort, make more progress, and derive substantial benefits from approach related strivings.

As an illustration, we modeled whether emotion regulation compared with non-regulation strivings led to greater joy when successful and whether these relations are moderated by the presence of PTSD. Separate models were conducted for approach and emotion regulation strivings and their cross-level interactions with PTSD, respectively.

Level-1 model:  $y_{ij} = \beta_{0j} + \beta_{1j} (\text{emotion regulation striving}) + r_{ij}$

Level-2 model:  $\beta_{0j} = G_{00} + G_{01} (\text{PTSD}) + U_{2j}$

$$\beta_{1j} = G_{10} + G_{11} (\text{PTSD}) + U_{2j}$$

In this model, at Level-1,  $y_{ij}$  is the joy derived from successful efforts (dependent variable) for participant  $j$  for striving  $i$ ,  $\beta_{1j}$  refers to the effects of emotion regulation strivings on joy derived from successful efforts. At Level-2,  $G_{01}$  refers to the main effect of PTSD,  $G_{11}$  refers to the cross-level interaction between PTSD and emotion regulation strivings on joy. The intercepts and slopes were treated as random effects.

As predicted, veterans with PTSD reported significantly greater effort and progress toward regulating emotions whereas veterans without PTSD reported greater effort and progress in working toward alternative strivings (see Table 2 and Figures 1 and 2). As for joy, veterans without PTSD derived greater joy when successful at strivings focused on approaching positive outcomes or something other than emotion regulation. Veterans with PTSD did not report any differences in joy as a function of striving content (see Table 2 and Figure 3). Similar findings were found when the focus was on approach versus avoidance oriented strivings with the exception that there were no significant predictors of striving progress (see Table 2 and Figures 1 and 3). When these striving categories were entered simultaneously, the PTSD x Emotion Regulation Strivings interaction continued to significantly predict striving effort,  $t(53)$

= -2.69,  $p = .01$ , and progress,  $t(53) = -2.72$ ,  $p = .009$ , but not joy ( $p = .19$ ), whereas the PTSD x Approach/Avoidance Strivings approach/avoidance interaction was no longer significant for these outcomes ( $ps = .42$ ,  $.94$ , and  $.08$ , respectively).

### *Summary*

Veterans with PTSD engaged in more frequent everyday strivings to regulate their emotions, devoted considerable personal resources toward regulating emotions and engaging in experiential and behavioral avoidance, but these efforts did not translate into finding significant joy, purpose, or meaning from these pursuits. Veterans without PTSD were less likely to strive to regulate emotions or avoid the possibility of negative outcomes and derived substantially greater joy when seeking positive outcomes (compared with avoiding negative outcomes) and pursuing strivings other than the regulation of emotions.

### *Influence of PTSD and Daily Well-Being Variables on Striving Content*

In the next section, we examined whether PTSD and striving content was associated with broader well-being. It was hypothesized that veterans with PTSD and a greater frequency of avoidance or emotion regulation strivings would report lower well-being than other veterans. That is, striving content would account for variability in well-being among veterans with PTSD. To capture what veterans experience in the context of their naturalistic environment, we focused on daily emotional well-being and self-esteem over the course of a two-week assessment period. For these daily outcomes, we conducted a set of multilevel analyses with days nested within people. To conduct these analyses, we created two aggregate variables of striving content reflecting (1) the ratio of emotion regulation to non-regulation strivings and (2) the ratio of avoidance to approach strivings. As our dependent measure of emotional well-being, we subtracted daily NA from daily PA each day to create a daily affect balance score.

Our multilevel models focused on daily self-esteem and daily affect balance as outcomes, respectively. Veterans with PTSD,  $t(50) = 6.21$ ,  $p < .001$ , and a greater frequency of emotion regulation strivings,  $t(50) = -3.11$ ,  $p = .004$ , reported lower daily self-esteem. These main effects were qualified by an interaction effect such that veterans with PTSD and a greater frequency of emotion regulation strivings reported significantly lower daily self-esteem than other veterans,  $t(50) = 2.51$ ,  $p = .02$ ; see Figure 4. We also found a main effect with veterans with a greater frequency of approach strivings reporting greater daily self-esteem,  $t(50) = 2.37$ ,  $p = .02$ . Veterans with PTSD,  $t(50) = 4.40$ ,  $p < .001$ , and a greater

frequency of emotion regulation strivings,  $t(50) = -1.88, p = .07$ , reported lower daily affect balance; there was no significant interaction between these terms ( $p = .13$ ). We found a main effect trend with veterans with a greater frequency of approach strivings reporting higher daily affect balance ( $p = .10$ ).

In our final analysis, we examined whether PTSD and striving content was associated with between-person Well-Being Scale scores. Because this was not a nested design (strivings within people or days within people), we relied on hierarchical regression models. After entering the main effects of PTSD status and aggregate striving content (approach/avoidance, emotion regulation), the PTSD x Striving Content interactions were entered. Significant interaction effects were explored with simple effect analyses (see Aiken & West, 1991). Results of each model are shown in Table 3. Both veterans with PTSD and a greater frequency of emotion regulation strivings reported significantly lower Well-Being Scale scores. These main effects were qualified by an interaction effect such that veterans with PTSD and a greater frequency of emotion regulation strivings reported substantially lower Well-Being Scale scores than other veterans (see Figure 5). In the second model, both veterans with a greater frequency of avoidance strivings reported significantly lower Well-Being Scale scores and there was marginal support for an interaction with PTSD. Specifically, veterans with PTSD and a greater frequency of avoidance strivings reported lower Well-Being Scale scores than other veterans (see Figure 5).

### Discussion

This study found that veterans (with and without PTSD) could be distinguished by the types of strivings they devote resources toward and organize their lives around, and how strivings influence well-being. Compared to veterans without PTSD, veterans with PTSD reported a greater number of strivings focused on regulating and controlling emotional experiences. There was no difference in the number of avoidance oriented strivings suggesting that an abundance of avoidance strivings (or lack of approach strivings) is relatively independent of a PTSD diagnosis. We also found evidence suggesting that the degree to which veterans orient their lives around regulating emotions or avoiding the possibility of negative outcomes moderates the relation between PTSD and well-being.

Veterans in the PTSD group reported lower dispositional well-being when their lives were organized by a higher number of emotion regulation or avoidance (compared to approach) oriented strivings. Veterans in the PTSD group also reported lower daily self-esteem over the course of 14 days

when their lives reflected a greater number of emotion regulation strivings. As evidence of heterogeneity, veterans with PTSD and a greater number of emotion regulation or avoidance strivings were the only subset of veterans reporting compromised well-being. Veterans with PTSD and fewer emotion regulation or avoidance strivings did not significantly differ from veterans without PTSD on global well-being or daily self-esteem. Thus, PTSD diagnoses were insufficient in predicting well-being outcomes in the absence of information about personal strivings,

Other results from this research provide evidence for using approach-avoidance and emotion regulation strivings to understand the psychological functioning of veterans. Veterans derived less purpose, meaning, and joy, from emotion regulation or avoidance oriented strivings. Several of these results were qualified by the moderating influence of PTSD. Veterans with PTSD expended greater effort, and made greater progress, when striving to regulate emotions. This effort and progress, however, did not translate into greater meaning, joy, or other dimensions of well-being. In contrast, veterans without PTSD reported greater effort and progress when working toward strivings other than emotion regulation. Veterans without PTSD who worked toward strivings other than emotion regulation reported the greatest joy from perceived success in daily striving activity. Thus, veterans' perceived success in daily strivings did not generate uniform benefits. Well-being depends on the kinds of strivings being pursued and the degree of fit with the personality, values, and ongoing life circumstances of the individual (Sheldon & Elliot, 1999; Sheldon & Houser-Marko, 2001).

The degree of fit between strivings and personal vulnerabilities (i.e., PTSD) also impacted the affective tone of veterans' daily life. Veterans with PTSD with a greater number of avoidance strivings reported less pleasant and more unpleasant feelings throughout the day over a two week assessment period. In addition, veterans with PTSD with a greater number of emotion regulation strivings experienced lower daily affect balance. Although these results trended toward significance, this finding suggests that Veterans who were focused on regulating emotions experienced less disparity between positive and negative affect on a given day. This may reflect greater levels of negative affect or lower levels of positive affect or a combination of both occurring in the daily lives of these veterans. These findings are consistent with prior work showing that emotional numbing symptoms in veterans tend to attenuate the experience of positive emotions (Litz et al., 2000). Other work shows that combat veterans with PTSD experience

intense negative affect in response to trauma cues in the laboratory (Keane et al., 1998; Orr, Lasko, Shalev, & Pittman, 1996) and everyday life (Muraoka, Carlson, & Chemtob, 1998). These response tendencies may reflect deficient capabilities to experience positive emotions, reflexive tendencies to suppress emotions (e.g., physiological hyperarousal can be part of the emotional rebound effect), or relatively inflexible responding to changing situational demands. The current findings underscore the importance of examining constructs in naturalistic environments.

Taken together, these findings suggest that to understand the well-being of veterans, it is useful to consider both the presence of disorder and the enduring life projects or aims toward which people allocate finite resources (e.g., time, energy). It appears that well-being is compromised when veterans with PTSD allocate personal resources toward (a) regulating and controlling emotions as opposed to other meaningful pursuits and (b) avoiding potential negative outcomes as opposed to moving toward positive outcomes. Veterans with and without PTSD most likely differ on a variety of meaningful variables including the density of aversive life experiences. Our results suggest that examining the content of strivings may broaden the level of assessment beyond severity of PTSD symptoms to better capture veterans' capacity for adaptive everyday functioning. As initial evidence of the specificity of these findings to PTSD, these results could not be attributed to severity of depressive symptoms. Additional work may examine whether findings generalize to other psychiatric conditions conceptually linked to avoidance-based regulatory processes (Hayes et al., 1996).

Our findings also fit with prior work suggesting that PTSD can be conceptualized by deficits in self-regulation (Ehlers & Clark, 2000; Litz, 1992). Trauma survivors show an over-reliance on strategies designed to avoid potential reminders of the trauma including internally directed processes such as thought suppression, rumination, and worrying, and externally directed processes such as behavioral avoidance of other people, places, and things that might cause unwanted anxious feelings. In the extreme, avoidance based strategies may increase the risk for suicide among trauma survivors in an ultimate attempt to "escape the self" (Baumeister, 1990). Yet, few studies have attempted to explain variability in the well-being of trauma survivors with PTSD.

There is limited information on the personal and situational factors that influence the value of emotion regulation. Emotion regulation is a valuable and adaptive skill and components designed to

develop and refine it are built into many empirically supported treatments (e.g., Dialectical Behavior Therapy). Indeed, regulating strong emotions is essential for effectively navigating a variety of stressful daily events and social situations. For example, a veteran who is unable to manage his anger when frustrated at work and lashes out at co-workers may experience deleterious social, occupational, and legal consequences as a result of aggressive behavior. Yet, when the aim of life is to control emotions, fewer resources are devoted to constructing a satisfying, engaging, and meaningful life (Wilson & Murrell, 2004). Instead of being driven to modify emotions, more may be gained from viewing emotions as tools that contribute to well-being by providing information, motivation, and in the right context, building blocks to grow as a person (Fredrickson, 1998). Beyond pleasure and pain, emotions serve a functional role in working toward the passionate pursuits that make a life worth living.

We sought to understand veterans with PTSD by extending beyond traditional assessment strategies that focus exclusively on emotional states and personality traits. We were interested in the personally meaningful projects that veterans think about, plan for, and try to accomplish with their lives (idiographic approach). A person's strivings are influenced by higher-order values, motives, and interests and they lead to molecular thoughts, behaviors, and feelings. However, strivings, and the action tendencies that are part of planning and implementation, cannot be inferred by behavioral observation or dispositional traits. To obtain an objective assessment, independent judges evaluated veteran strivings as either approach or avoidance oriented, and whether or not the focus was on regulating emotions. Participant and observer rated evaluations allowed for comparisons between veterans (nomothetic approach). Despite initial empirical support for this approach to assessing emotion regulation, additional validation work is needed. Future work can examine how the different tiers of personality—dispositional traits, personal strivings, and life narratives—operate together in people with and without emotional disorders. In particular, it will be useful to examine the conditions that lead veterans with and without PTSD to shift their life priorities, find meaning and purpose, and modify personal narratives as a result of trauma exposure. The present methodology, with the addition of pre- and post- trauma assessments, can allow for fine-grained analyses of the conditions that lead to disorder, resilience, and recovery trajectories.

These results provide evidence for the unique role of strivings on differential mental health outcomes for veterans with and without PTSD. As such, several practical clinical implications may be

drawn. Examining strivings could be a useful complement to more traditional assessment strategies in basic research on self-regulatory processes (e.g., Gratz & Roemer, 2004; Hayes et al., 1996; Litz et al., 2000) and interventions targeting experiential avoidance and valued living (e.g., Hayes, Strosahl, & Wilson, 1999). With a focus on functioning as opposed to symptom reduction, shifts in personal striving categories (e.g., approach-avoidance, emotion regulation, personal growth) and enhancement in striving progress can serve as useful treatment outcome variables. Heterogeneity in striving categories may also be associated with variable treatment outcomes. For example, veterans with PTSD and a high ratio of emotion regulation strivings might respond better to acceptance and mindfulness based treatments compared to cognitive-behavioral modules focusing on cognitive restructuring. As an adjunct to existing treatments, therapeutic efficacy might be enhanced by modalities that provide direct support to veterans in the creation and pursuit of strivings that offer sustainable sources of meaning and purpose in life. Nonetheless, our results are preliminary and implications should be considered with caution.

Current findings are limited by a small sample of male veterans. However, we collected an extensive amount of data on each veteran including the elicitation of multiple strivings, a matrix of striving dimensions, and 2 weeks of daily records. Although manual based semi-structured interviews were not used to assess PTSD, we conducted a comprehensive assessment that included consensual diagnoses after discussions with multiple staff members, clinical cut-off scores on the Mississippi Scale for combat-related PTSD (Keane et al., 1988), and DD-214's to validate combat experience. Our assessment strategy of strivings and well-being suffer from all the caveats associated with self-reports. Without pre-trauma assessments, it is unclear whether the distinctive features of strivings existed prior to trauma or were the result of subsequent disruptions or meaning-making processes.

As another caveat to this study, the daily record method used in this study is partially compromised by the absence of time-and-date stamping procedures. However, our use of an older community sample required us to accept these limitations. Many veterans lacked regular transportation, access to computers, and were not comfortable with advanced technology. Although we are unable to evaluate whether respondents completed reports retroactively after missing a day, examinations of daily records failed to show evidence of fixed response sets from one day to the next. Even if respondents did complete several days retrospectively, this assessment procedure is still an improvement over single

time-point approaches (global trait measures and interviews). Paper-and-pencil records were the most viable approach for our unique sample. We feel there are benefits to applying social psychological research to real-world samples beyond the use of college students or young adults.

Despite limitations, the present data show important variability in how veterans structure their lives. Veterans with PTSD reported a higher number of emotion regulation strivings and greater obstacles and less progress towards strivings compared with veterans without PTSD. Only veterans with PTSD and a high number of emotion regulation or avoidance strivings showed evidence of diminished well-being. Veterans with PTSD and other striving configurations did not differ in global well-being or daily self-esteem from veterans without PTSD. Our dynamic, idiographic approach to personality offers a promising framework for further study of personality and psychopathology, accounting for meaningful heterogeneity in well-being outcomes of war veterans.

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Table 1.

*Summary Statistics and Differences between Veterans with and without PTSD on Strivings*

<i>Outcome</i>	Reliability	Group Means and Standard Errors		B	<i>t</i> Ratio
		PTSD	Non-PTSD		
Progress	.84	3.75 (.17)	4.22 (.13)	.46	2.16*
Obstacles	.78	3.68 (.19)	3.06 (.15)	-.62	-2.56*
Joy	.81	4.12 (.14)	4.46 (.11)	.34	1.84
Purpose	.75	4.13 (.140)	4.41 (.11)	.28	1.62
Effort	.81	4.21 (.18)	3.97 (.14)	-.24	-1.04

*Notes.* \*  $p < .05$ . A series of multilevel analyses were conducted with strivings nested within persons. The reliability of outcome measures was evaluated using unconditional models and group differences were evaluated using PTSD status as the lone predictor (coded as -1 = meets criteria for PTSD and 1 = fails to meet criteria for PTSD). Number of strivings reflects the average number endorsed out of eight.

Table 2.

*Multilevel Regression Analyses for PTSD and Emotion Regulation Strivings on Effort, Progress and Joy*

Outcome	Effects	<i>B</i>	<i>t</i> Ratio	<i>p</i> -value
Striving Effort	Intercept	4.84	12.65	<.001
	PTSD group	-.54	-2.30	.025
	Emotion regulation strivings	.72	3.42	.002
	PTSD * Emotion regulation strivings	-.50	-3.56	.001

Outcome	Effects	<i>B</i>	<i>t</i> Ratio	<i>p</i> -value
Striving Progress	Intercept	3.62	9.58	<.001
	PTSD group	.22	.96	.342
	Emotion regulation strivings	.65	2.68	.010
	PTSD * Emotion regulation strivings	-.42	-2.66	.010

Outcome	Effects	<i>B</i>	<i>t</i> Ratio	<i>p</i> -value
Striving Joy	Intercept	4.05	11.26	<.001
	PTSD group	.05	.24	.811
	Emotion regulation strivings	.27	1.23	.224
	PTSD * Emotion regulation strivings	-.33	-2.23	.030

*Notes.*  $n = 54$  (27 PTSD group, 27 non-PTSD group). All  $p$ -values were two-tailed. PTSD group was coded as -1 = meets criteria for PTSD and 1 = fails to meet criteria for PTSD. Emotion regulation strivings were coded as -1 = no regulation and 1 = emotion regulation.

Table 3.

*Multilevel Regression Analyses for PTSD and Approach/Avoidance Strivings on Effort, Progress and Joy*

Outcome	Effects	<i>B</i>	<i>t</i> Ratio	<i>p</i> -value
Striving Effort	Intercept	4.76	11.86	<.001
	PTSD group	-.47	-1.95	.056
	Approach strivings	-.51	-2.28	.027
	PTSD * Approach strivings	.37	2.60	.013

Outcome	Effects	<i>B</i>	<i>t</i> Ratio	<i>p</i> -value
Striving Progress	Intercept	3.46	9.08	<.001
	PTSD group	.31	1.33	.190
	Emotion regulation strivings	-.34	-1.20	.236
	PTSD * Emotion regulation strivings	.27	1.49	.142

Outcome	Effects	<i>B</i>	<i>t</i> Ratio	<i>p</i> -value
Striving Joy	Intercept	4.01	11.16	<.001
	PTSD group	.12	.57	.573
	Emotion regulation strivings	-.30	-1.39	.170
	PTSD * Emotion regulation strivings	.29	2.12	.038

*Notes.*  $n = 54$  (27 PTSD group, 27 non-PTSD group). All  $p$ -values were two-tailed. PTSD group was coded as -1 = meets criteria for PTSD and 1 = fails to meet criteria for PTSD. Approach strivings were coded as -1 = avoidance and 1 = approach.

Table 4.

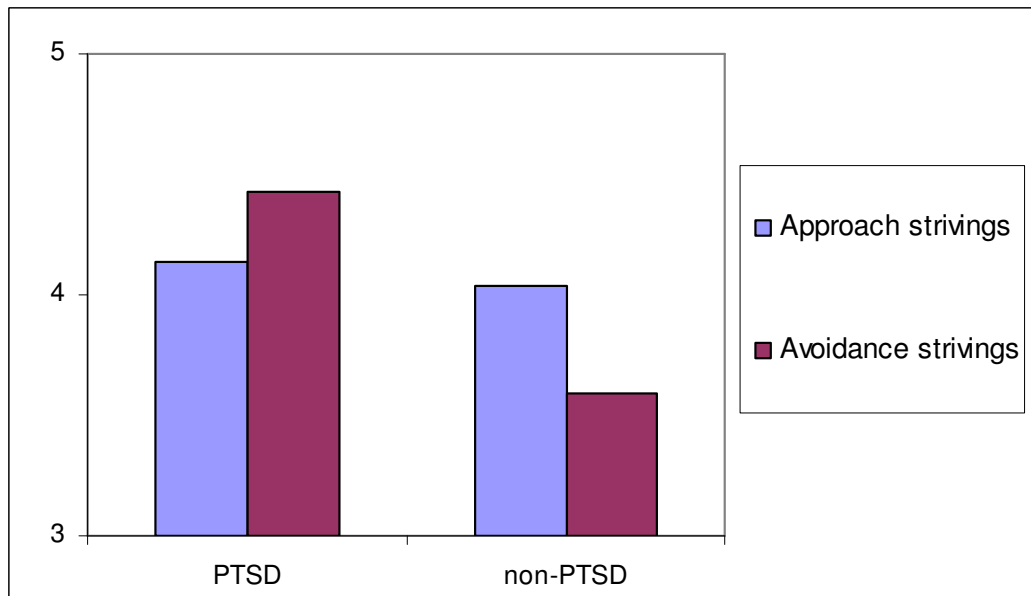
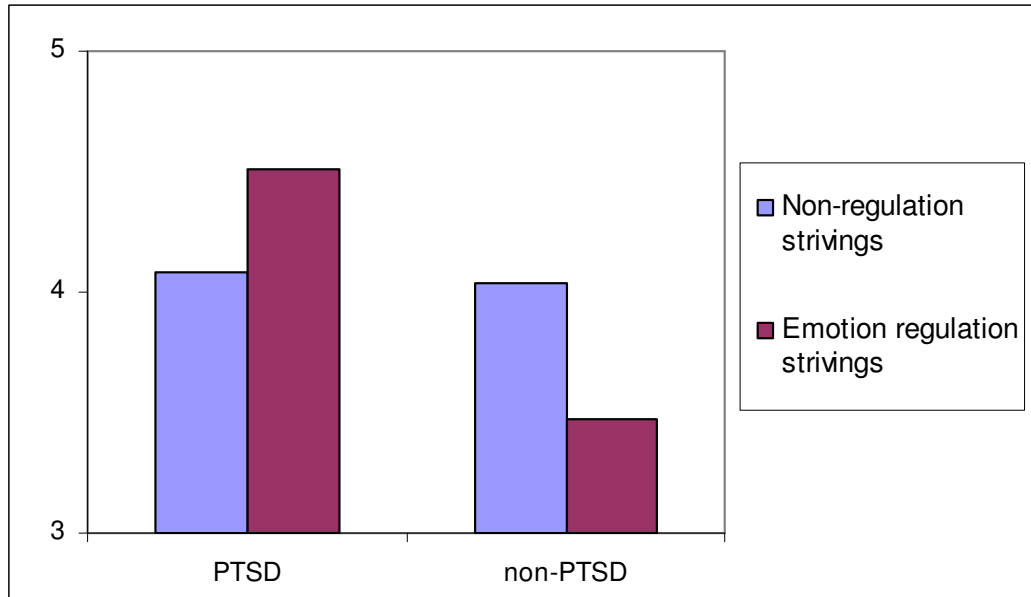
*Hierarchical Regression Models for PTSD and Striving Content in Predicting Global Well-Being*

Step		b	Pr	t	$\Delta R^2$	$\Delta F$
1	PTSD group	.60	.65	5.90***	.51	25.16***
	Approach strivings	.29	.38	2.85**		
2	PTSD * Approach strivings	-.58	-.26	-1.86+	.03	3.45+

Step		b	Pr	t	$\Delta R^2$	$\Delta F$
1	PTSD group	.55	.61	5.29***	.53	27.29***
	Emotion regulation strivings	-.39	-.43	-3.25**		
2	PTSD * Emotion regulation strivings	.73	.33	2.36*	.05	5.59*

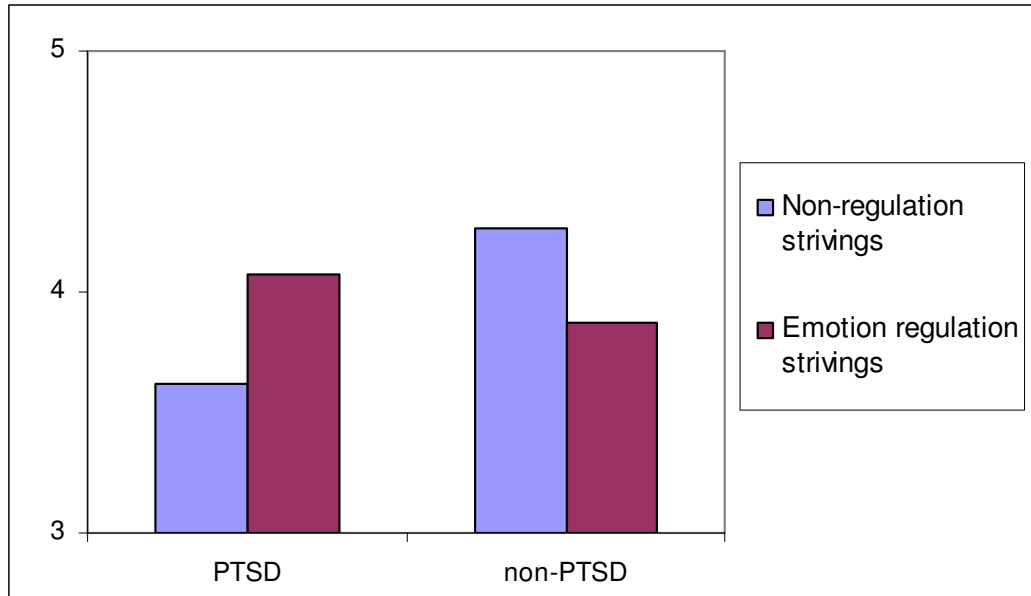
*Notes.*  $n = 50$ . +  $p \leq .07$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ . All  $p$ -values were two-tailed. PTSD group was coded as -1 = meets criteria for PTSD and 1 = fails to meet criteria for PTSD. Approach strivings were coded as -1 = avoidance and 1 = approach. Emotion regulation strivings were coded as -1 = no regulation and 1 = emotion regulation.

Figure 1: Striving Effort as a Function of PTSD and Striving Content



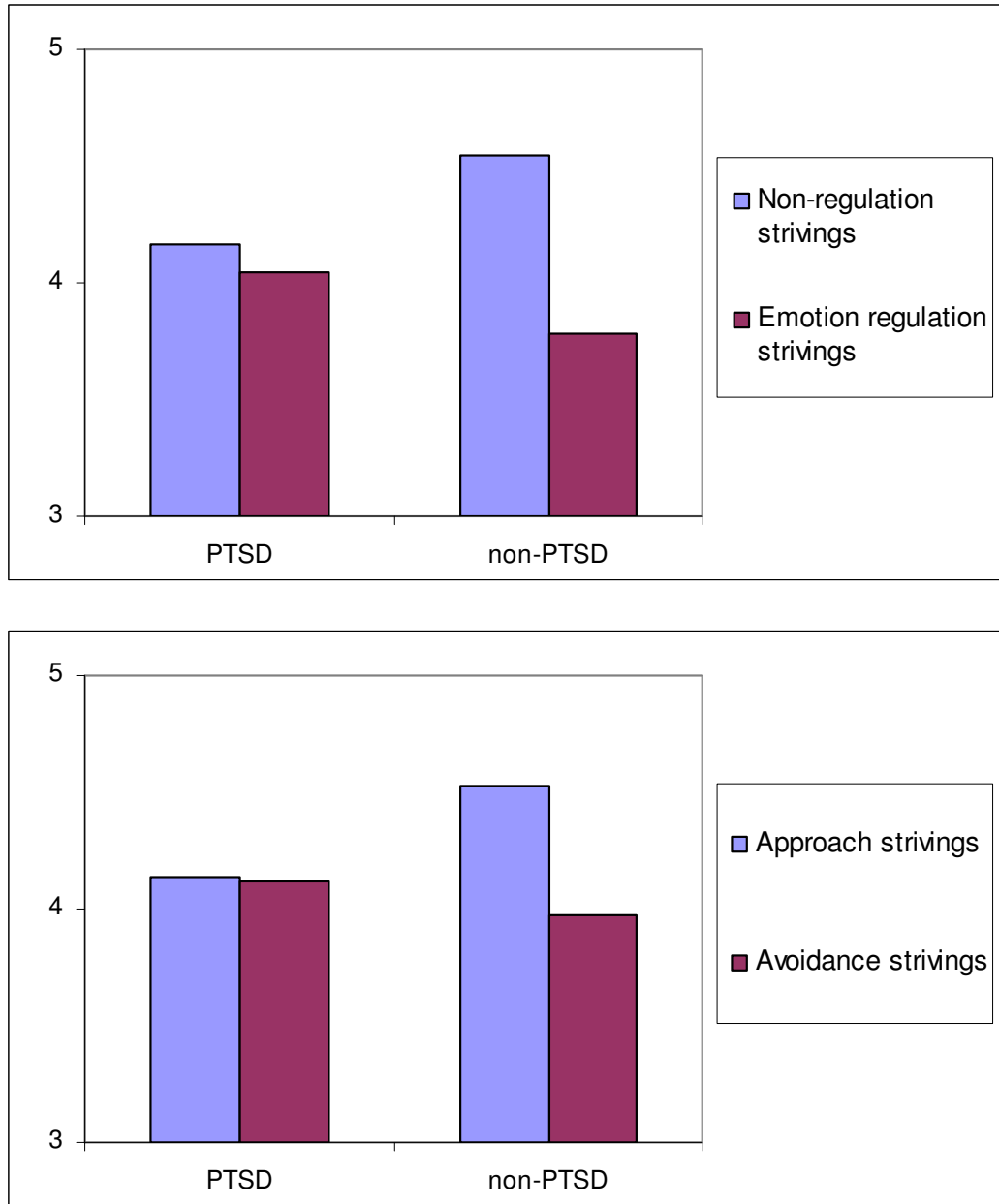
Notes. Expenditure of a lot of effort and energy in trying to be successful in strivings served as the criterion. The data included 426 strivings nested within 54 people. Predictors were binary variables.

Figure 2: Striving Progress as a Function of PTSD and Emotion Regulation Strivings



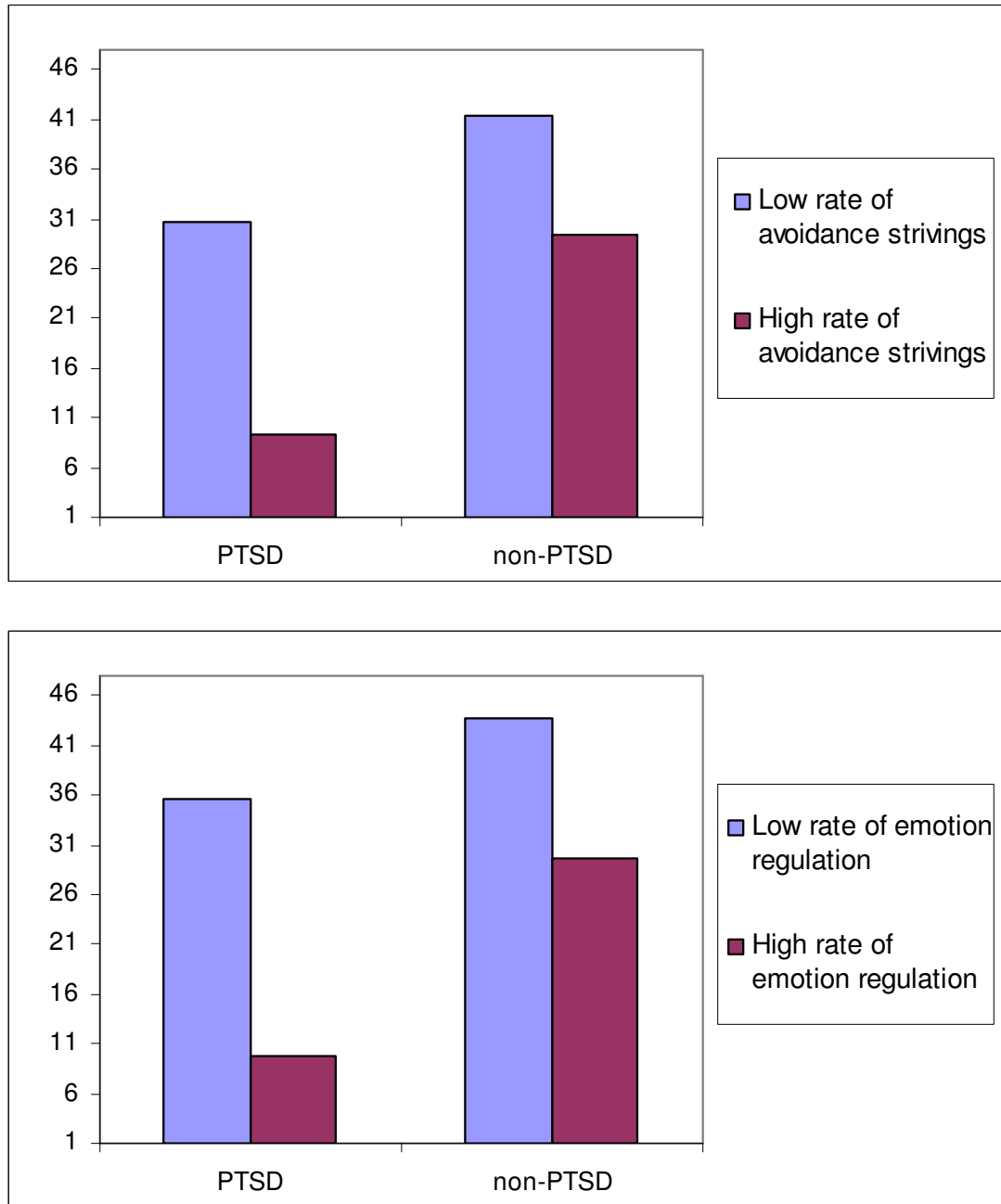
*Notes.* Progress on strivings in the past month served as the criterion. The data included 426 strivings nested within 54 people. Predictors were binary variables.

Figure 3: Striving Joy as a Function of PTSD and Striving Content



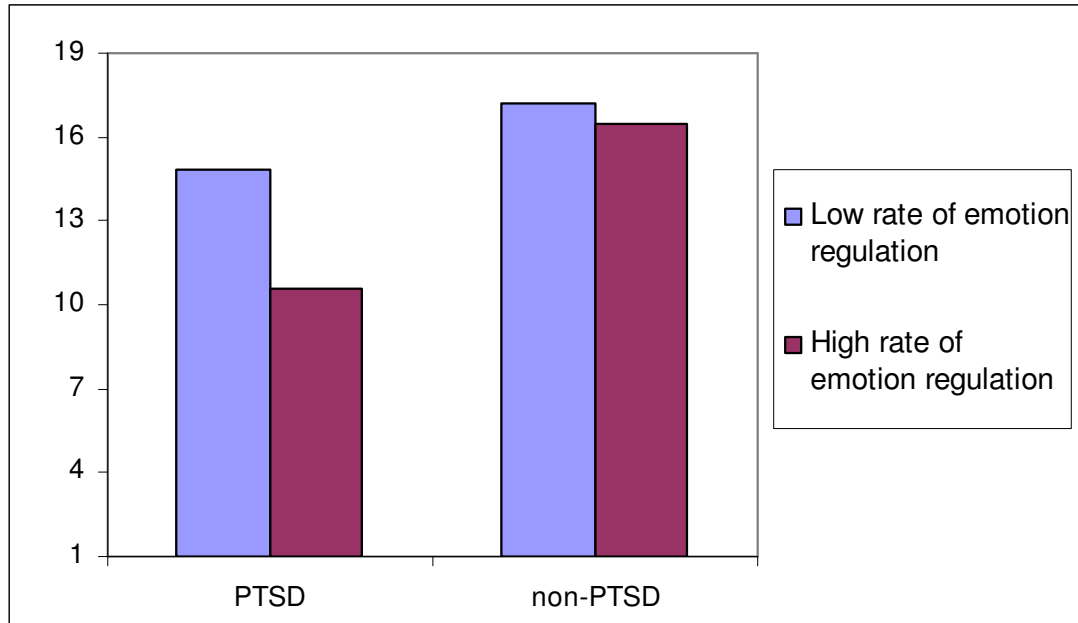
Notes. Experiencing a great deal of joy when successful in strivings served as the criterion. The data included 426 strivings nested within 54 people. Predictors were binary variables.

Figure 4: Global Well-Being as a Function of PTSD and Striving Content



Notes. Scores on the 18-item *Well-Being Scale* (WBS; Tellegen, 1982) served as the criterion. High and low frequencies of emotion regulation strivings were defined as at least +1 and -1 standard deviations from the mean, respectively.

Figure 5: Average Daily Self-Esteem as a Function of PTSD and Frequency of Emotion Regulation Strivings



Notes. Average daily self-esteem over the 14-day assessment period served as the criterion. High and low frequencies of emotion regulation strivings were defined as at least +1 and -1 standard deviations from the mean, respectively.

## Appendix A: Content Coding for Emotion Regulation

1. Does the striving concern affect or emotion?
  
2. Focus on **enhancing positive mood and being happy**
  
3. Focus on **avoiding unhappiness, stress, anxiety, or other negative emotions**
  
4. Even if the content of the striving reflects thoughts, images, or bodily sensations, it may be coded as emotion regulation.
  - One of the dominant emotion regulation strategies is cognitive reappraisal which is defined as attempts to reduce the aversiveness of an experience by changing the way it is evaluated or appraised or thought about.
  
5. NOTE: the focus should be on change and there should be some explicit reference to change in order to be coded as emotion regulation

Examples:

“not stress as much when studying”

“avoid expressing my feelings”

“play music more often to feel more alive”