Developing a Resilience Program for Student Veterans

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There are approximately 23 million veterans in the United States; 65% of which apply Veteran’s Affairs (VA) benefits towards obtaining a college/university degree (VA, 2010). Present data by Whiteman, Barry, Mroczek, and Wadsworth (2013), indicate this special population of students has been largely unnoticed. Compared to college/university students in general, Rudd, Goulding, and Bryan (2011) stated that student veterans are more likely to have thoughts of suicide, and experience severe anxiety and depression. Compared to non-student veterans, student veterans are more likely to engage in health risk behaviors (Widome, Lask, Gulden, Fu, & Lust, 2011), and be affected by trauma and/or PTSD (DiRamio, Ackerman, & Mitchell, 2008; Rudd et al., 2011), an illness impacting a veteran’s entire life (Richardson, Frueh, & Acierio, 2010).

The present study will set out to examine if a resilience training program for student veterans can reduce their levels of trauma and increase their resilience. The following hypotheses will be investigated during this research project:

Hypothesis 1: The treatment group will have significant increases in resilience compared to the waitlist control group.

Hypothesis 2: The treatment group will have significant decreases in trauma symptoms and adjustment difficulties compared to the waitlist control group.

Method

Participants

The participants in this study will comprise of recruited, male and female student veterans, defined as soldiers who leave combat and enroll in post-secondary institutions as students (DiRamio et al., 2008). Through postings, announcements, advertisements and referrals from on-campus counseling and military student offices at a college/university campus in the
United States, student veterans between the ages of 25-35 years old will be recruited for this study (Jesnek, 2012). Recruited student veterans must meet the following criteria: beginning their first year as a student following active duty, have experienced combat missions and diagnosed with Post-traumatic Stress Disorder (PTSD) and/or have PTSD symptoms. If potential participants have a current psychotic disorder diagnosis and/or if they possess an organic mental disorder that might severely interfere with their ability to participate in the study, they will be excluded. From the recruited participants, approximately 160 student veterans will be randomly selected to participate in the study, and randomly assigned to one of two groups: the treatment group or the waitlist control group.

**Measures:**

Participants will be administered the Structured Clinical Interview for *DSM-IV* (SCID; First, Spitzer, Gibbon, & Williams, 2002) during the initial assessment, confirming criteria for PTSD and/or PTSD symptomology. PTSD (American Psychiatric Association, 2013) is defined as a psychiatric disorder resulting from “exposure to actual or threatened death, serious injury, or sexual violence, …[the presence of] intrusion symptoms, …persistent avoidance of stimuli, …negative alterations in cognitions and mood, …marked alterations in arousal and reactivity, …[causing] clinically significant distress or impairment” (pp. 271-272). The PTSD Checklist Military version (PCL-M; Weathers, Litz, Herman, Huska, & Keane, 1993) will measure PTSD.

**PTSD Checklist Military version.** This 17-item self-report tool uses a five-point Likert scale (1-not at all and 5-extremely); 50 is the cut-off score recommended for a PTSD diagnosis (Bliese et al., 2008; Forbs, Creamer, & Biddle, 2001). The overall internal consistency alpha coefficient is 0.96 (Keen, Kutter, Niles, & Krinsley, 2008) and it has strong convergent validity (Wilkins, Lang, & Norman, 2011).
Resilience, “the ability to persist in the face of challenges and to bounce back from adversity” (Reivich, Seligman, & McBride, 2011, p. 25), will be measured by the Connor-Davidson Resilience Scale (C-D RISC, Connor & Davidson, 2003).

**Connor-Davidson Resilience Scale.** This is a 25-item, self-report, 5-point Likert scale (0-4, higher scores indicate greater resilience) assessing the treatment effects for stress reactions, anxiety, and depression (Steinhardt & Dolbier, 2008). It has an internal consistency of 0.89; interclass correlation coefficient of 0.87; good convergent validity (Connor & Davidson, 2003); and external validity (Jung et al., 2012).

**Variables**

A pretest-posttest control group design, i.e., a between-groups design, will be used in this study; participants will be randomly assigned to one of two groups: the treatment group or the waitlist control group; both groups will receive pretest and posttest measures (Heppner, Wampold, & Kivlighan, 2008). The Student Veterans Resilience Program (SVRP), which will only be administered to the treatment group, is the independent variable for this study. PTSD and resilience are the dependent variables that will be measured using the PCL-M and C-D RISC, respectively.

**Procedures**

SVRP will be developed for a college/university by adopting elements from Reivich, Seligman, and McBride’s (2011) Master Resilience Training (MRT) course into Steinhardt and Dolbier’s (2008) four-week Resilience Intervention. The resilience program will be administered over a one-month period, where the treatment group will meet for two hours each week. The treatment group will cover topics on resilience and transforming stress into resilience, during week 1; building mental toughness and taking responsibility, during week 2; identifying

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character strengths and focusing on empowering interpretations, during week 3; and
strengthening relationships and creating meaningful connections, during week 4.

**Proposed Statistical Analysis**

MANOVA will be used in this study to determine if significant variability exists between
the treatment group and the waitlist control group (Warner, 2013), based on pre- and post-test
scores on PCL-M and the C-D RISC; assessing the two outcome measures: PTSD and resilience,
respectively. The MANOVA statistic will assess if the treatment group, experiencing the SVRP,
had significant decreases in trauma symptoms and adjustment difficulties, and significant
increases in resilience compared to the waitlist control group.

For the MANOVA statistic to be employed, various assumptions need to be met. First,
observations on the Y outcome variables (PTSD and resilience) should be collected in such a
way that the scores of different participants on any one Yi outcome variable are independent of
each other. To ensure this assumption is met, participants in the treatment group will be limited
to interacting with each other for a small amount of time, two hours each week. In addition, their
pre- and post- testing will be done individually, minimizing the possibility for participants to
influence each other’s scores, maximizing the possibility of obtaining scores for different
participants that are independent. Second, each Y outcome variable should be quantitative and
reasonably normally distributed. Univariate histograms will be used to examine each Y outcome
variable (PTSD and resilience) to ensure approximate normal distribution. If outliers are
identified that might violate this assumption, data transformations such as logs may be used to
remedy problems; if the outliers are extreme, they might be dropped from the data set, allowing
for an approximate normal distribution to be established. Third, associations between pairs of Y
variables should be linear, i.e., the joint distribution of the entire set of Y variables should be
multivariate normal within each group. This will be determined by observing scatter plots between all possible pairs of Y variables. If extreme scores are observed within groups, log transformation may be employed to reduce their impact. Fourth, and finally, the variance/covariance matrices for the outcome variables (Σ) should be homogenous across populations that correspond to groups in the study; i.e., the variances for all outcome variables are equal across populations and the covariances for all possible pairs of outcome variables are equal across populations. A violation to this assumption is identified using the Box M test; log transformations may be used to reduce the differences in variances and covariances across groups, correcting a violation of this assumption. Pillai’s trace may also be reported instead of Wilks’s lambda as the overall test statistic since it is more robust to violations of the homogeneity of variances and covariances.

If the SVR Program is found to be effective in significantly decreasing trauma, and increasing resilience in the treatment group compared to the waitlist control based on MANOVA results. Then both hypotheses outlined in this study will be accepted.

**Validity Critiques**

Both the PCL-M and C-D RISC contain questions that adequately measure the constructs, i.e., PTSD and resilience, respectively, that they purport to measure as determined from previous studies, indicating construct validity, content validity, and face validity. Both tests have been identified as having good criterion validity, based on other studies that indicated that these tests can predict the constructs they were intended to measure, PTSD and resilience, with a good degree of accuracy. Both tests have been found to have good concurrent validity; the PCL-M was compared with other validated PTSD scales (i.e., CAPS and Mississippi Scale), and the C-D RISC was compared with other validated scales (i.e., Kobasa Hardiness Measure and Sheehan
Social Support Scale). In relation to predictive validity, the present study is not concerned with predicting future group membership in the two testing conditions. As such, predictive validity is not addressed in this study. Both tests also indicate good levels of convergent validity, as reported in other research studies that used these tests and similar tests to measure the same construct. Both tests were reported as having good discriminant validity; when compared to similar tests they showed strong positive and negative correlations, and when compared with different constructs they had smaller correlations (Blanchard, Jones-Alexander, Buckley, & Forberis, 1996; Connor & Davidson, 2003; Forbes, Creamer, & Biddle, 2001; Johnson et al., 2011; & Weathers et al., 1993). In relation to statistical validity, the present study will seek to meet assumptions for MANOVA statistic, which includes homogeneity of variance for the variance/covariance matrices for outcome variables, PTSD and resilience. In so doing, Type I error will be minimized. This study will try to achieve a statistical power of 0.8, and an Eta squared effect size of 0.05; requiring 76 student veterans per group, i.e., a total of approximately 160 participants. These numbers will allow for each group to have equal participants, hopefully supplying sufficient statistical power to minimize Type II error.

In relation to internal validity, history effects will be controlled for by using two groups: a treatment and a waitlist control; both groups will hopefully be affected in similar ways. Maturation is a possible threat to this study; however, due to the short duration of the study (one month) it is unlikely to influence results dramatically. Testing might also pose a threat to internal validity, since the same measures will be used at pre- and post-test; testing effects will be considered when results are collected in this study. Regression towards the mean is not a threat in this study because participant selection is not based on pretest scores; rather it is based on meeting criteria for PTSD. Selection bias will be controlled for using random assignment.
Contamination through treatment diffusion, that might involve compensatory rivalry and resentful demoralization, are all likely since both groups will be taken from the same school. Having members in each group keep group conditions confidential, and having a waitlist control group will hopefully discourage such activities. Attrition might be the most important threat to this study; if this is the case, pretest scores will hopefully aid in assessing the effects of differential attrition. Instrumentation will be accounted for be performing pre- and post-testing from both groups at the same time. It is difficult to blind participants to what is being assessed in the study, therefore reactivity is a possible threat to the study. The generalizability of the results will be limited, only applying to student veterans entering degree programs on college/university campuses in the United States that are characteristically similar to the student veteran samples used in this study. If the hypotheses of this study are supported, the case will be made for implementing Resilience Programs in colleges/universities accepting student veterans that are similar to the college/university used in this study.
References


## Appendix

### Table 1

<table>
<thead>
<tr>
<th>Type of Validity</th>
<th>Definition</th>
<th>Application to Proposed Measure</th>
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<tbody>
<tr>
<td>Construct Validity</td>
<td>Construct validity assesses the variables used to characterize hypothetical constructs in the study to determine the accuracy with which they capture those constructs (Heppner et al., 2008).</td>
<td>Both the PCL-M and C-D RISC have been identified as having questions that measure the constructs, PTSD and resilience, respectively, that they are intended to measure.</td>
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<tr>
<td>Content Validity</td>
<td>This “refers to the extent to which the items reflect an adequate sampling of the characteristic” (Girden &amp; Kabacoff, 2011, p. 8).</td>
<td>Both tests contain questions that adequately address the constructs they are intended to measure, PTSD and resilience; indicating good content validity.</td>
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<tr>
<td>Criterion Validity</td>
<td>“Refers to the extent to which test scores correlate with a behavior (criterion) the test supposedly measures (concurrent validity) or the extent to which test scores predict that behavior (predictive validity)” (Girden &amp; Kabacoff, 2011, pp. 8-9).</td>
<td>Other studies indicated that these tests can predict the constructs they were intended to measure, PTSD and resilience, with a good degree of accuracy; i.e., they have good criterion validity.</td>
</tr>
<tr>
<td>Concurrent Validity</td>
<td>“The correlation of a measure with performance on another measure or criterion at the same point in time” (Kazdin, 2003, p. 573).</td>
<td>Based on other validated PTSD and resilience related scales, the PCL-M and C-D RISC scales were identified as having good current validity.</td>
</tr>
<tr>
<td>Predictive Validity</td>
<td>“The ability of a test to predict a future behavior or future group membership that should occur if the test is a valid measure of what it purports to measure” (Warner, 2013, p. 1109).</td>
<td>The present study is not concerned of predicting future group membership in the two testing conditions; as such, predictive validity was not addressed in this study.</td>
</tr>
<tr>
<td>Face Validity</td>
<td>Similar to content validity, i.e., it focuses on “the degree to which it is obvious what attitudes or abilities a test</td>
<td>Based on the questions contained in each test, it appears that both scales have good face validity.</td>
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</table>
### Convergent Validity

Examines “the relationship between scores on the testing instrument and scores on other instruments intended to measure the same and other constructs … there should be a high correlation between instruments that measure the same construct” (Heppner et al., 2008, p. 322).

Both tests were identified as having good and or strong convergent validity, when compared with other tests that measure the same constructs.

### Discriminant Validity

This form of validity is said to exist if, “the correlation of measures of different constructs… [are] smaller than correlations of measures of the same construct” (Heppner et al., 2008, p. 322).

Both tests were identified as having good discriminant validity, when compared with other tests that had constructs similar to theirs, they correlated strongly, while different constructs had correlations that were small in relation to PTSD and resilience, respectively.
### Table 2

**Addressing Threats to Internal Validity**

<table>
<thead>
<tr>
<th>Type of Threat</th>
<th>Definition</th>
<th>How it will be Addressed</th>
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<tbody>
<tr>
<td>History</td>
<td>“Any event occurring in the interim that directly or indirectly could affect the behavior being measured and therefore could account for results” (Girden &amp; Kabacoff, 2011, p. 4).</td>
<td>Two groups will be used to control for history effects: treatment group and waitlist control group.</td>
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<tr>
<td>Maturation</td>
<td>“Any change within the participant that occurs during the interim and can just as easily account for posttest performance” (Girden &amp; Kabacoff, 2011, p. 4).</td>
<td>This is a possible threat, but the duration of study is one month; a small time frame, so maturation should not be a problem.</td>
</tr>
<tr>
<td>Testing</td>
<td>“This refers to posttest performance that results from pretest experience” (Girden &amp; Kabacoff, 2011, p. 4).</td>
<td>This is a possible threat, but a small one, during results assimilation, testing will be considered.</td>
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<tr>
<td>Regression</td>
<td>“This is a predictable shift in posttest scores when participants were specifically selected because their pretest scores were extremely high or low. Posttest scores are predicted to be less extreme regardless of treatment effects” (Girden &amp; Kabacoff, 2011, p. 4).</td>
<td>Not a threat in this study; participants are not selected based on high/low pretest scores. Selection is based on meeting PTSD criteria and being first year student veterans.</td>
</tr>
<tr>
<td>Selection Bias</td>
<td>“This refers to the assignment of participants to the various test conditions on a non-random basis. Difference in performance may be associated with a participant characteristic instead of, or along with, the independent variable” (Girden &amp; Kabacoff, 2011, p. 5).</td>
<td>Random assignment to each of the two test groups will be used to account for this threat.</td>
</tr>
<tr>
<td>Contamination</td>
<td>Also known as diffusion of treatment, “is the unintentional spread of treatment to a control group (or groups) when participants receive information withheld from them (e.g., through conversation with experimental participants) that results in a smaller difference among group performances at posttreatment assessment” (Girden &amp; Kabacoff, 2011, p. 5).</td>
<td>This threat will be addressed/minimized by asking participants to keep treatment conditions confidential; having a waitlist group will hopefully prevent this activity from occurring.</td>
</tr>
<tr>
<td>Threat</td>
<td>Description</td>
<td>Mitigation</td>
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<tr>
<td>Attrition</td>
<td>Also known as mortality or attrition, “is the loss of particular participants from a group (or groups) in such a way that remaining participants no longer can be considered to be initially equivalent with respect to the dependent variable” (Girden &amp; Kabacoff, 2011, p. 5).</td>
<td>This is the most prominent threat in this study; however, if it occurs, pretest scores will be used to assess differential attrition.</td>
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<tr>
<td>Instrumentation</td>
<td>“This refers to any change in the measuring instrument and/or assessor from pretest to posttest that can just as easily explain a change in scores” (Girden &amp; Kabacoff, 2011, p. 4).</td>
<td>Measurements at pre- and post-testing will be taken from both groups at the same time.</td>
</tr>
<tr>
<td>Combination of Selection and Other Threats</td>
<td>This refers to other possible confounds that could be present in the study and account for results (Girden &amp; Kabacoff, 2011).</td>
<td>Random assignment and other measures outlined in this table will hopefully minimize threats that might interfere with outcome scores.</td>
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<tr>
<td>Diffusion or Imitation of Treatment</td>
<td>This might involve compensatory rivalry, where participants in the control group engage in behaviors that attempt to exceed performance of an experimental group, reducing posttreatment effects; or it might include resentful demoralization, where the performance level of the control group is lowered, increasing the differences between post-treatment group means because they were not provided with the treatment (Girden &amp; Kabacoff, 2011).</td>
<td>This is a possible threat to the study, but having a waitlist control group will hopefully minimize these activities.</td>
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<tr>
<td>Special Treatment or Reaction</td>
<td>This may result in the Hawthorne effect, where participants experience positive changes/outcomes from being assigned to the treatment group, rather than from experiencing the treatment itself; or this might result form experimenter expectancy, where the researcher’s expectations for certain results (un)intentionally influence participants behaviors (Girden &amp; Kabacoff, 2011).</td>
<td>Reaction is a possible threat, it is difficult to blind participants to what is being assessed in the study. The experimenter will be an observer and not partake in facilitating the treatment sessions, which will help in controlling for experimenter expectancy. Facilitators will be trained to follow protocol not engage in special treatment of participants.</td>
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</tbody>
</table>