COMBAT POSTTRAUMATIC STRESS DISORDER: EFFECT OF INTELLIGENCE ON SYMPTOMATOLOGY

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Thesis Prepared for the Degree of

MASTER OF SCIENCE

UNIVERSITY OF NORTH TEXAS

May 2004

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The objective of this study was to examine the relations between Posttraumatic Stress Disorder symptomatology and intelligence. Thirty American combat veterans of the Vietnam War, diagnosed with chronic PTSD, were given a psychodiagnostic structured interview. Participants were assessed for Intelligence Quotient as well as the veracity of their self report. The study found that there were significant differences in how participants experienced their PTSD symptoms that were correlated with intelligence. The higher IQ participants reported more frequent and intense guilt related symptoms as well as more intense intrusive recollections. The lower IQ participants experienced more frequent startle responses, more intense problems related to falling or remaining asleep and more frequent affective symptoms related to emotional numbing. Psychologists could use these differences in how PTSD is experienced in treatment planning. It may be useful for therapy to address sleep disturbances and affective numbing in lower IQ individuals. Therapy for higher IQ individuals may be more useful if it addresses feelings of guilt and intrusive recollections.
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INTRODUCTION

Prevalence of PTSD

PTSD is common in military combat veterans. More than 500,000 Vietnam veterans may currently have Posttraumatic Stress Disorder (PTSD; Foy, Sipprelle, Rueger, & Carroll, 1984). Fifteen years after Vietnam service 27.9% of American Hispanics, 20.6% of African Americans, and 13.7% of combined Caucasian and other ethnicities who participated in the war met the criteria for PTSD in 1992 (Schlenger, Kukla, Fairbank, & Hough 1992). As many as 65% of the veterans who performed the grave registration duties of embalming and processing bodies in Operation Desert Storm have developed PTSD (Macklin et al., 1994). The development of PTSD is not limited to those with combat exposure. It affects victims of natural disaster (Rubonis, & Bickman 1991), terrorism, crime, assault, and automobile accidents (Weaver, & Clum 1995). Studies have shown that there are higher rates of PTSD among the victims of sexual assault, combat and physical assault than is evidenced by those experiencing other traumas such as accidents and natural disasters (Breslau, Davis, Andreski, & Peterson, 1991; Davidson, Hughes, Blazer, & George, 1991; Helzer, Robins, & McEvoy, 1987). The development of PTSD is not limited to those who are the actual victims. Those who witness these events may develop PTSD. It is even possible for caregivers or family members to develop sequelae much like PTSD through close
association with those directly traumatized.

Symptomatology of PTSD

The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association, 1994) lists the criteria for the diagnosis of PTSD. There are 17 items that comprise the range of symptoms that are exhibited in varying patterns in those with PTSD. These 17 symptoms are divided into three groups comprised of symptoms related to re-experiencing the trauma, symptoms related to avoidance and emotional numbing to stimuli that are associated with the original traumatic event, and symptoms related to increased arousal. Re-experiencing symptoms can be recurrent intrusive and disturbing thoughts or memories related to the traumatic event. Avoidance and numbing symptoms can consist of social and mental withdrawal, avoiding people and places as well as smells and sounds associated with the traumatic event. This can include efforts to stop intrusive thoughts or memories. These efforts are often accompanied by a sense of fear or foreboding about the future and an inability to recall specific items or circumstances related to the trauma. Finally, increased arousal can involve sleeplessness and nightmares, hypervigilance, irritability, memory and concentration problems, as well as an exaggerated startle response. To receive a diagnosis of PTSD, DSM-IV criteria requires an individual must have been exposed to and experienced a traumatic event that was life threatening or threatened serious physical injury. In response to this exposure the individual must have felt intense fear, horror or helplessness.
Risk Factors for PTSD

Many studies examine various risk factors that may predict the development of PTSD. As exposure to trauma goes up so does the chance of developing PTSD. Foy, et.al, (1984) found that the extent of combat exposure was correlated with current PTSD symptoms. Although exposure to traumatic events may be the best predictor for the development of PTSD, there are many risk factors that contribute to the possibility of developing of PTSD once an individual is exposed to a traumatic event. These include deficits in early socialization, child abuse or molestation, and low socio-economic status. In a meta-analysis, Brewin, Andrews, & Valentine (2000) found three factors that were the best predictors of PTSD. They are trauma severity, lack of social support, and greater subsequent life stress after the event. Even events occurring many years before a trauma can increase the chances of developing PTSD. Ullman, & Siegel (1994) found that younger age at the time of exposure to trauma, less education, previous traumatic life events, and a psychiatric history could all be used as predictors of PTSD.

Much research has been published on risk factors for PTSD, including the effect of low education for development of PTSD. By investigating the school records of male Vietnam veterans with PTSD, Watson, Davenport, Anderson, Mendez, & Gearhart (1998) were able to correlate low grade point averages in high school with the development of PTSD later. In a study of sixty-six individuals exposed to battlefield conditions, civilian terrorism, and traffic
accidents, Amir, Kaplan, & Kotler (1996) found that higher military rank and greater education were protective factors. Individuals with higher education experienced significantly less severe symptoms in the areas of avoidance, depression, anxiety, and interpersonal sensitivity. In those participants who experienced trauma while members of the military, those with higher rank experienced significantly less severe symptoms in the same areas.

Little research has been published on the effect of intelligence on PTSD symptomatology. Separate studies have found differing results regarding the role of lower intelligence in the frequency and severity of PTSD. In some research, lower intelligence has appeared related to a greater frequency and severity of PTSD symptoms, whereas in other studies intelligence has appeared unrelated.

Education and intelligence, although not the same thing, are closely interrelated. Using the Minnesota Multiphasic Personality Inventory (MMPI) to screen their participants, Sutker, & Allain (1995) found that prisoners of war who were more highly educated also had higher IQs. This group had a lower incidence of PTSD than less educated, lower IQ prisoners of war. It seems reasonable to speculate that those having higher average IQs would therefore have a higher average level of personal resources and cognitive functioning than other soldiers. Sutker, & Allain (1995) theorized that these greater personal resources and superior cognitive functioning contributed to a lower incidence of PTSD and other mental disorders in this population.

Higher intelligence is thought to protect people from developing PTSD as
well as moderate its severity and limit the number of symptoms experienced by traumatized individuals. Macklin, et al. (1998) found lower pre-combat intelligence to be a risk factor in the development of PTSD. They found no correlation between the severity of PTSD symptomatology and the subjects pre- or post-combat intelligence. McNally, & Shin (1994) found that lower intelligence was associated with more severe PTSD symptomatology. McNally, & Shin (1994) also found that individuals with higher intelligence were likely to have more cognitive ability to facilitate adaptive coping and were less likely to develop chronic PTSD. McNally, & Shin (1994) stated that it was debatable whether or not to control for effects of education when using IQ to predict PTSD. This is because IQ influences educational achievement; thus controlling for education may mask the relation between cognitive ability and PTSD.

Gilbertson, Gurvits, Lasko, Orr, & Pitman, (2001) found that cognitive functioning can work as a buffer against memory-related deficits in those with PTSD. Their study found that higher cognitive functioning was a protective factor, with below average cognitive functioning being a vulnerability factor. In another study, Vasterling, et al., (2002) found that lower IQ’s were correlated with the development of PTSD. They concluded that higher intelligence has a buffering or protective effect when these individuals are exposed to trauma. This study also found that lower intelligence was associated with more severe PTSD symptoms.

Archival research involving pre-combat service records of Vietnam
veterans, also supports this general line of thinking. The General Technical Test (GTT) was administered to all enlisted personnel upon admission to the armed forces in the years leading up to the Vietnam War. The U.S. Department of Health and Human Services (1989) showed that lower scores on the General Technical Test were associated with higher PTSD rates in those recruits later exposed to combat. There are likely problems with using results from the GTT to establish pre-morbid intelligence. The test was administered in many locations under different circumstances. Many recruits may have been sleep deprived, ill from inoculations and under considerable stress. Nonetheless, these findings are consistent with those reviewed above.

The type of trauma to which an individual is exposed may not be a predictor of the development of PTSD. Amir, et al., (1966) found that there were no significant differences in diagnosis rates among the four trauma type groups of battle war experience, civil terrorist victims, work related accidents and traffic accidents. However, this study discovered that the PTSD core symptoms and their associated features of depression, anxiety, interpersonal sensitivity, and somatization differed significantly in relation to the type of trauma which initiated the onset of PTSD. Ullman, & Siegel, (1994) found that the specific number of PTSD symptoms experienced by individuals could be predicted by the type of traumatic event reported. To assess the number of symptoms by trauma type, Ullman, & Siegel, (1994) divided trauma into nine types. They are listed as follows in the order of the group experiencing the highest number of symptoms: [list of trauma types].
to the lowest: serious combat, sexual assault, other war related experience, physical assault, threat to life, other accident, seeing injury to another person, and natural disaster. It is likely that the results reported by Ullman, & Siege, (1994) differed from Amir et al. (1996) because the trauma types in the Ullman study also differed from each other in terms of severity.

The nature of the trauma to which individuals are exposed does have some effect on the development of PTSD. Green, Grace, Lindy, Gleser, & Leonard, (1990) divided the nature of the trauma experienced by combat war veterans into two groups: threat to life and exposure to grotesque death (horror). Traumas which involved the viewing of grotesque death were found to be the strongest predictors of PTSD. A meta-analysis of 49 studies by Brewin, et al., (2000) examined trauma severity in 13,653 individuals. They found that the more severe the trauma experienced, the greater the likelihood of developing PTSD. The effect sizes in this analysis ranged from .02 to .54 ($r$); and trauma severity was correlated with the development of PTSD by a weight of .23 ($r$).

It is difficult to separate severity of PTSD from trauma type. It is reasonable to assume that different types of traumatic experiences would imply different severities. It is also reasonable to assume that particular types of trauma occur at different levels of intensity. The variability of trauma types in levels of intensity as well as duration of exposure make the separation of severity from a particular traumatic event problematic.
In psychology, intelligence is conceptualized in many different ways. Nearly every orientation holds forth a paradigm which defines intelligence relevant to that orientation's theoretical underpinnings. Cognitive neuroscience has yet to formulate a concise, complete and explanatory definition of what human intelligence actually consists of (White, 2000). Some researchers believe that the term intelligence is too vague and is of limited value when investigating mental abilities (Howe, 1988; Mackintosh, 1986). Although it is beyond the scope of this research paper to present an exhaustive review, it is useful to look at some of the definitions provided in the literature for conceptualizing intelligence.

One definition describes intelligence as developing an expertise (Sternberg, 1999). This expertise is divided into three categories, meta-cognitive skills (individuals' awareness and control over their cognitions), learning skills for knowledge acquisition, and thinking skills which allow individuals to think critically, perform creative thinking, and think in practical terms. With this definition, individuals become more intelligent as they develop expertise through experience in different categorical areas.

Still another definition views intelligence as merely a word describing a concept (Howard, 1993). This theory defines the concept as an individual's unique, personal knowledge about a specific category or set of items in their world environment. No individual's concepts will be exactly like any other individual's.

Wechsler (1958), defined intelligence as "The aggregate or global capacity
of the individual to act purposely, to think rationally and to deal effectively with his environment" in Sattler (1992).

Ackerman (1996) describes intelligence from knowledge theory wherein the amount of knowledge in a specific domain determines an individual's intelligence. This knowledge is influenced by personality and individual interests (Rolfhus, & Ackerman, 1999).

There is also a constructivist view of intelligence. This view describes intelligence as a centralized capacity for coherent, context-sensitive, self-directed management of information. Through learning, an individual anticipates skill construction. Self-directedness is a process that allows individuals to steer themselves through their environment, by anticipating and matching their requirements to interact with its environment (Christensen, & Hooker, 2000).

Kaufman (1994) as well as Horn, & Cattell, (1966, 1967) in Sattler (1992) expressed perhaps the most conventional view of intelligence when they divided intelligence into two categories. They stressed that intelligence is made up of crystal intelligence which contains what an individual knows, and fluid intelligence which is more closely related to perceptual and interpretive abilities that individuals possess (Kaufman, 1994). For the purposes of this research addresses, a traditional view of intelligence as described by Kaufman (1994) will be used.

Can PTSD Affect IQ?

In a study involving ninety participants at the Veterans Affairs Medical
Center in Manchester, New Hampshire, Macklin et. al.(1998) found that chronic PTSD does not lower performance on intelligence tests from pre-morbid levels. They also found no significant correlation between PTSD severity and the difference between pre-combat and current intelligence in individuals with PTSD.

In recent research, Gillbertson, et al., (2001) evaluated nineteen Vietnam combat veterans with chronic PTSD and thirteen Vietnam combat veterans without PTSD. Using the Wechsler Adult Intelligence Scale-Revised, he found that the two groups differed significantly only in attention as measured by the subtest Digit Span. It seems there is likely an insignificant difference in IQ between individuals with PTSD and those without PTSD. It would also follow that IQ as measured by standardized testing would remain nearly the same after combat exposure as it was before.

Do Medications Used to Treat PTSD Affect IQ?

This study will not evaluate medication effects on participants’ testing data. Intuitively, when estimating IQ in participants with chronic PTSD the effects of psychoactive medications on testing would seem to be of concern. Vasterling et al., (2002) did comparisons between two groups of veterans with PTSD: 16 who took psychoactive medications and 10 who took no psychoactive medications. Using the WAIS–R, Continuous Performance Test (Conners, 1992), and the Rey Auditory Verbal Learning Test (Rey, 1964), Vasterling found some small differences on individual subtests correlated with short-term memory and concentration. Those using medication scored slightly lower on these subtests
but no overall significant differences between the two groups were found.

Logical Analysis

There is little research which addresses the relations between IQ and PTSD. As a result literature in areas of investigation covered in this study are not available. Where literature is not available an intuitively logical analysis was used to construct the hypotheses.

The Present Study

This study will examine differences in individual PTSD symptoms and their relations to IQ. It will attempt to analyze these symptoms for severity and by type to determine whether there are differences in PTSD symptoms experienced by individuals of higher and lower IQs. This information would be useful in the treatment of PTSD. It would also be important in understanding PTSD. Another use for this information would be in the selection of individuals who may be exposed to trauma in military service, in public safety, paramedical, and other fields where exposure to trauma is highly probable.

The present study addressed five main hypotheses.

Hypothesis 1. Those subjects with lower IQs will endorse more re-experiencing symptoms and report more severe re-experiencing symptoms. This would be consistent with the findings of Macklin, et al., (1998); McNally, & Shin, (1994); and Sutker, & Allain, (1995).

Hypothesis 2. Those subjects with lower IQs will report significantly more frequent and more severe symptoms of avoidance than subjects with higher IQ
scores. This would also be consistent with the findings of Macklin, et al., (1998); McNally, & Shin, (1994); and Sutker, & Allain, (1995) as they report that IQ works as a buffer against PTSD symptoms.

Hypothesis 3. Those subjects with lower IQ will report significantly more frequent and more severe symptoms of persistent arousal involving concentration and angry outbursts. This would be consistent with Macklin, et al., (1998); McNally, & Shin, (1994); and Sutker, & Allain, (1995).

Hypothesis 4. Those subjects with higher IQs will report significantly more frequent and more severe PTSD symptoms on the "associated features" domain. Specifically, higher IQ persons are predicted to have more difficulties with survivor guilt, guilt over acts of commission and omission, depersonalization, derealization, and decreased awareness. This is has not been investigated in the literature but makes intuitively logical.

Hypothesis 5. Those subjects with higher IQs will report significantly more sleep related difficulties than subjects with lower IQs. These include difficulty falling asleep and awakening symptoms. This has not been investigated in the literature but makes intuitive sense and was used to guide research in this area.
METHODS

Participants

Participants were all Vietnam combat veterans who were in treatment for PTSD. These volunteer participants were recruited from the Dallas, Texas, Veterans Administrative Medical Center. These participants were non-psychotic inpatients or outpatients. All participants who were concurrently being treated for substance abuse were detoxified prior to participation. Each participant was given an explanation of the study and signed a consent document. All participants were given a copy of this document for personal record. The first 30 participants determined to have active PTSD were used in the study. This population was not a representative cross-section of those with combat PTSD. It is a population that displays long-term, chronic PTSD.

All participants were 11 Caucasian and 9 African–American males from 48 to 68 years-of-age with a mean age of 56-years-old and a standard deviation of 4.77. Level of education ranged from high school to master’s degree level. Participants level of education was assessed as high school completed, GED, some college, college graduate and graduate degree. One participant was not a high school graduate while the majority of participants reported at least some college. WAIS-R IQ’s obtained ranged from 73.07 to 117.24. The mean WAIS IQ was 96.0 with a standard deviation of 13.03. All were combat veterans who spent 9 to 20 months in Vietnam with an average of 13.4 months in Vietnam each.
Instruments

Clinician Administered PTSD Scale. Each participant was screened for active PTSD with the Clinician Administered PTSD Scale (CAPS; Blake et al., 1990). The CAPS is a structured interview that assesses symptomatology of PTSD using the criteria outlined in the DSM-IV (American Psychiatric Association, 1994). It also assesses other associated symptoms as well as levels of distress and areas or domains affected by the individual's PTSD symptomatology. In the CAPS, the symptomatology which the DSM-IV divides into three categories, are divided into four areas. The CAPS assesses the participant's PTSD symptomatology in the following areas:

Re-experiencing

Intrusive memories or thoughts

Recurrent distressing dreams

Flashbacks

Intense psychological distress to stimuli

Intense physiological distress to stimuli

Avoidance

Efforts to avoid thoughts

Efforts to avoid activities or events

Inability to recall aspects of trauma

Diminished interest or participation in activities

Feelings of detachment or estrangement from others
Restricted range of affect

Sense of a foreshortened future

Persistent symptoms of arousal

Sleep difficulties

Irritability or outbursts of anger

Difficulty concentrating

Hypervigilance

Exaggerated startle response

Associated features

Guilt over acts of commission or omission

Survivor guilt

Reduction in awareness

Derealization

Depersonalization

Each of these four categories is assessed and rated by frequency and intensity. Numerical ratings for the frequency and intensity of each of the 22 symptoms are combined to give a severity value for each symptom. Severity values range from 0 to 4. The symptom severity values are averaged within each category produce a severity value for that category.

The psychometric qualities of the CAPS have been shown by the authors to have excellent internal consistency as well as accurate test-retest reliability. Results of the CAPS have been highly correlated (.89) with the SCID PTSD...
module (D.W. King, Leskin, King, & Weathers, 1998). The CAPS is also highly correlated (.91) with the Mississippi Scale for Combat-Related PTSD (King, et al, 1998).

Morel Emotional Numbing Test. The Morel Emotional Numbing Test (MENT) was administered to assess the veracity of each participant's response style in an attempt to validate the results of the other measures that were given. The MENT is a 60-item 2-alternative forced-choice test. It is designed so subjects taking the MENT can achieve near perfect results despite being psychologically impaired. The ability of the MENT to identify suspect response styles by participants has been shown to be 82.0% under simulated conditions. The MENT identifies genuine responders 100.0% of the time. (Morel, 1998)

Test of Cognitive Abilities. The Test of Cognitive Abilities (TOCA; Rogers, 1996) is an unpublished measure which is used to measure an individual's cognitive abilities and to assess the individual's accuracy in the presentation of cognitive status. The TOCA is a 112 item, computer-based measure that uses multiple strategies to detect misrepresentation in an individual's responses and presentation. It uses a multiple-choice format in which the individual selects two choices from four possible responses. (i.e., each item requires two responses). Individuals must complete number and letter sequences as well as fill in the correct words to complete sentences. (e.g., __ 2, 3, 4, 5, __). Because each question requires two responses, there are a total of 224 responses required to complete the measure. The TOCA is comprised of three separate sections: The
Sequencing Section (60 questions) assesses the individual's abilities to recognize alpha-numerical sequences. The Designs Section (22 questions) assesses the individual's ability to recognize sequences based on four criteria: size, color, shape, and shading. The Sentences Section (30 questions) assesses verbal comprehension and memory using incomplete sentences.

The TOCA's instructions are used to display a warning to the participant. This warning cautions against faking and includes a description of detection strategies the test employs. The warning appears on the computer screen following the general instructions. Each subject is read the instructions, therefore all are aware of the warning. The warning used in the TOCA is as follows.

WARNING. Every now and then, someone tries to fake the test by doing a bad job. Please don't do this. The test has many safeguards to stop persons from faking it. These safeguards identify people who may be faking. Some of the safeguards are listed below:

The test checks to make sure you miss more of the difficult items than easy items.

The test checks to see how many seconds you take on each item and compares it to the difficulty of the item.

The test checks to see if you are trying by comparing your ability on similar items.

The test checks to see if you made careless errors, particularly on very
easy items.

The test checks to see if you get the same wrong answers as most people do.

The test checks to see if you make more mistakes than expected by chance (probability) alone.

Don't worry about these safeguards, just put forth your best effort.

The TOCA has been found to be an accurate measure of individual presentations. The TOCA has been found to correlate highly with the Magnitude of Error (MOE) strategy employed by Martin, Franzen, and Orey (1998) to detect simulators in a group containing simulators and brain injured individuals. The TOCA was superior to the MOE in the discrimination of simulators from brain injured individuals. The TOCA detected 96.1% of the simulators and 95.1% of the brain injured individuals, compared to 86% and 80% respectively for the MOE.

Shipley Institute of Living Scale. The Shipley was constructed to be a measure of intellectual impairment. It is most used as a brief measure of intellectual functioning. The Shipley, which is closely correlated with the WAIS-R, will be used to obtain an estimated IQ for each participant.

In this study the Shipley was administered as a computer-based test. It consists of 60 questions. Twenty of the questions involve filling in the blank space provided to complete a sequence composed of numbers, letters or words. Forty of the questions are word definitions. The stimulus word is displayed and 4
definition word choices are listed as A, B, C, and D. The participants were required to select the correct definition for the stimulus word.

A group of 11 studies found WAIS Full Scale IQ scores and Shipley Total scores to be correlated in a range from .73 to .90 with a median correlation of .79 (Zachary, 1987). In a within-subjects design, Hays, Emmons, Wagner, & Stallings, (1997) compared mean WAIS-R IQ score with Shipley mean IQ score and found no significant difference between them (t = .44, p > .25).

Page 50 of the Shipley Institute for Living Manual lists a table for converting age-based Shipley Total scores to WAIS IQ scores. For most purposes this table is accurate. In some cases stratification by age in these tables can throw off IQ estimates by 13 points or more between individuals differing in age by only a few months (Zachary, Paulson, Gorsuch, 1985). The tables also predict actual IQ's instead of scaled scores. Scaled scores are thought to generalize more readily to differing populations because they are more independent of the population they are derived from than IQ scores. (Zachary, et al., 1985) To correct this problem and increase accuracy of estimated WAIS-R IQ's the mathematical procedure from Table 11 of the Shipley manual was utilized. This provided the most accurate prediction of WAIS-R IQ scores using the Shipley Total scores. (Zachary, et al. 1985).

Index Trauma Description. (Appendix A) The participants were asked to write a short narrative description describing the single most traumatic experience he believes "caused" him to develop PTSD (Appendix A). This
description provided enough information to allow trained raters to rate the experiences along the dimension of the severity of life threat, horror and/or grotesque death. The "severity of trauma" served as a control variable for evaluating the relations between IQ and PTSD.

Demographics Information Questionnaire. A Demographics Information Questionnaire (Appendix B) was completed for each participant. This consisted of 19 questions related to the participant’s combat and military experience. This questionnaire also includes personal information related to substance abuse, diagnosed mental disorders, education, marital status, ethnicity, and age.

Veterans Administration Research Consent Form. The consent form (Appendix C) contains a description of the rights of each participant as enumerated by the Veterans Administration. It also explains that there is a limited risk to participants and provided them with an explanation of the research.

Procedures

First, each participant was welcomed and seated in the testing room. The consent document was read and a signature was obtained. The signatures were witnessed by the researcher as well as a Veterans Administration Employee. The participant was given a copy of the consent document for their personal record. The original was kept by the Dallas Medical Center Psychology Office. Each participant was advised that should the discussion of their combat trauma made them too uncomfortable or caused them distress that they could discontinue
their participation in the study at any time without penalty. Next the demographics questionnaire was administered. The participant was next administered the Clinician-Administered PTSD Scale for DSM-IV (CAPS) to confirm a clinical diagnosis of PTSD and to obtain symptom ratings. A description of the participant's index trauma was then obtained. Next the participant was seated in front of a computer terminal. Each was administered a computer-based test battery which included the Shipley IQ measure as well as the TOCA. The participant was then given the paper-and-pencil MENT. This test was meant to screen each participant's reporting or response style for accuracy. Data from participants deemed to be grossly over-reporting was discarded. Finally the participant was debriefed and an attempt was made to answer any questions he may have about the research and testing.

Each participant's index trauma was then rated by a panel of trained raters. The index trauma was rated on the extent to which it contained horror. This served as the trauma severity rating. Using the Shipley, an IQ score was obtained for each participant. Finally the number of symptoms endorsed on each of the four categories on the CAPS and the severity of each was computed.

Variable Calculation
For the purpose of hypothesis testing a composite score was computed from the CAPS data for each of the following sections or categories: re-experiencing, avoidance, symptoms of arousal, associated features and sleep difficulty. The CAPS scores for lifetime frequency and intensity for each corresponding individual symptom were added together to produce a total
frequency and total intensity score in each section. The two total scores were then added together to produce a total combined intensity and frequency score. These 3 total scores in each section were used in the statistical analysis. Additionally, 3 total PTSD scores were obtained. One is a total frequency score and another is a total intensity score, comprised of the total frequency and intensity scores of all sections. The final total PTSD score is the sum of the total frequency and intensity scores. Sleep difficulty scores include distressing dream symptoms and difficulty with sleeping symptoms.

To compute the final score, the scores in each section that are greater than or equal to 2 were assigned a value of 2. All scores of 1 were scored as a 1. In this way all clinically significant scores were coded the same.
RESULTS

Table 1 and table 2 are presented on the next two pages. Table 1 contains an intercorrelation matrix and alpha results for the study indices. Table 2 contains descriptive statistics for the study sample.
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<tr>
<td>AFT</td>
<td>.36</td>
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<td>.15</td>
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<td>.54</td>
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</tbody>
</table>

*Table 1. Intercorrelations of Measures*

Table 1 abbreviations, Shipley (S), Horror rating (Hr), TOCA Section 1 (T1), TOCA Section 2 (T2), TOCA Section 3 (T3), CAPS Re-experiencing Section (RT), CAPS Avoidance Section (AT), CAPS Persistant Symptoms of Arousal Section (PT), CAPS Associated Features Section (AFT). Alpha in bold.
The descriptive statistics for the sample are listed in Table 2.

*Table 2. Descriptive Statistics for the Sample Group.*

<table>
<thead>
<tr>
<th>Sample Means and Standard Deviations</th>
<th>N</th>
<th>M</th>
<th>S.D</th>
</tr>
</thead>
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<tr>
<td>WAIS-R IQ</td>
<td>30</td>
<td>96.06</td>
<td>13.02</td>
</tr>
<tr>
<td>Horror</td>
<td>30</td>
<td>57.50</td>
<td>16.09</td>
</tr>
<tr>
<td>Re-experiencing Total</td>
<td>30</td>
<td>51.77</td>
<td>9.35</td>
</tr>
<tr>
<td>Avoidance Total</td>
<td>30</td>
<td>75.97</td>
<td>9.83</td>
</tr>
<tr>
<td>Persistent Symptoms of Arousal Total</td>
<td>30</td>
<td>55.47</td>
<td>5.96</td>
</tr>
<tr>
<td>Associated Features Total</td>
<td>30</td>
<td>34.87</td>
<td>13.39</td>
</tr>
</tbody>
</table>
Hypotheses

Hypothesis 1. Those subjects with lower IQs will endorse more re-experiencing symptoms and report more severe re-experiencing symptoms.

First a correlation was computed between the participants’ WAIS-R IQ score and total re-experiencing score for all 30 participants. That Pearson’s correlation coefficient was $R = .14, p = .12, b = .27, p = .02$. Next the participants’ horror rating was correlated with the participants’ total re-experiencing score. That correlation was $R = .13, p = .24, b = .11, p = .30$. A regression was then run to predict total re-experiencing symptoms by first entering the horror rating and then the IQ score. The WAIS-R IQ score was not a significant unique predictor of total re-experiencing symptoms. The overall $R^2$ was .03. After partitioning out the effects of horror the $R^2$ change was not significant ($R^2$ change = .01; $F (1, 27) = .4, p = .27$).

Next the MENT and the TOCA were used to select the scores of possible over-reporters. Three participants were found to have met the criteria of the MENT to be possible over-reporters. The scores of these participants were dropped leaving 27 participants. The data analysis was performed again on the refined sample to determine if over-reporting influenced the results.

First a correlation was computed between the participant’s IQ score and total re-experiencing score for all 27 participants. That Pearson’s correlation coefficient was $R = .17, p = .19, b = .16, p = .22$. Next the participants’ horror rating was correlated with the participants’ total re-experiencing score. That
correlation was $R = .1, \rho = .32, b = .06, \rho = .30$. A regression was then run to predict total re-experiencing by first entering the horror rating and then the IQ score. The WAIS-R IQ score was not a significant unique predictor of total re-experiencing symptoms. The overall $R^2$ was .03. After partitioning out the effects of horror the $\hat{R}^2$ change was not significant ($R^2$ change = .03; $F(1, 24) = .62, \rho = .22$). These findings are reflected in table 3.

The methods used to obtain results in hypotheses 2 through 5 were the same used in hypothesis 1. Results for hypothesis 2 through 5 are listed in table 3.

Hypothesis 2. Those subjects with lower IQs will report significantly more frequent and more severe symptoms of avoidance than subjects with higher IQ scores.

Results obtained by analysis indicate that the WAIS-R IQ score was not a significant unique predictor of avoidance symptoms in either the full or refined sample ($R^2$ change = .01, $F(1, 27) = .21, \rho = .33$) ($R^2$ change = .01, $F(1, 24) = .44, \rho = .26$).

Hypothesis 3. Those subjects with lower IQ will report significantly more frequent and more severe symptoms of persistent arousal involving concentration and angry outbursts.

Results obtained in the analysis indicate that the WAIS-R IQ score was not a significant unique predictor of persistent symptoms of arousal symptoms in either the full or refined sample ($R^2$ change = .04, $F(1, 27) = 1.11, \rho = .15$)
Hypothesis 4. Those subjects with higher IQs will report significantly more frequent and more severe PTSD symptoms on the "associated features" domain. Specifically, higher IQ persons are predicted to have more difficulties with survivor guilt, guilt over acts of commission and omission, depersonalization, derealization, and decreased awareness.

In the full sample the WAIS-R IQ score was a significant unique predictor of associated features symptoms ($R^2$ change = .09; $F(1, 27) = 3.1, p = .05$).

In the refined sample the WAIS-R IQ score was not a significant unique predictor of associated features symptoms ($R^2$ change = .09, $F(1, 24) = 2.68, p = .06$).

Hypothesis 5. Those subjects with higher IQs will report significantly more sleep related difficulties than subjects with lower IQs. These include difficulty falling asleep and awakening symptoms. Results of the analysis indicate that the WAIS-R IQ score was not a significant unique predictor of sleep disturbance symptoms. In either the full or the refined sample ($R^2$ change = .04, $F(1, 27) = 1.4, p = .12$) ($R^2$ change = .05, $F(1, 24) = 1.32, p = .13$).

Exploratory Results

Correlations were computed between the WAIS-R IQ standard score and the lifetime PTSD frequency and intensity ratings from the CAPS. Actual CAPS scores were used in these correlations and no converted CAPS scores were used (see variable calculation section above). Correlations were first computed on all
30 participants. Then the scores of three participants who may have been over-reporting as indicated by the MENT were removed and correlations were computed again. Significant correlations (\( p < .05 \)) and trends are below.
<table>
<thead>
<tr>
<th>Predictor</th>
<th>Sample</th>
<th>Corr w/ IQ</th>
<th>Corr w/Horr</th>
<th>R² Change</th>
<th>F ( df )</th>
<th>p</th>
<th>b (IAQ)</th>
<th>p</th>
<th>b/horr</th>
<th>p (all (p))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-experiencing</td>
<td>full</td>
<td>(r = .14, p = .23)</td>
<td>(r = .13, p = .24)</td>
<td>.01</td>
<td>.4</td>
<td>1, 27</td>
<td>.27</td>
<td>.12</td>
<td>.27</td>
<td>.11</td>
</tr>
<tr>
<td>Re-experiencing</td>
<td>27</td>
<td>(r = .17, p = .19)</td>
<td>(r = .1, p = .32)</td>
<td>.03</td>
<td>.62</td>
<td>1, 24</td>
<td>.21</td>
<td>.16</td>
<td>.22</td>
<td>.06</td>
</tr>
<tr>
<td>Avoidance</td>
<td>full</td>
<td>(r = -.01, p = .5)</td>
<td>(r = .41, p = .02)</td>
<td>.01</td>
<td>.21</td>
<td>1, 27</td>
<td>.33</td>
<td>-.08</td>
<td>.33</td>
<td>.42</td>
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<tr>
<td>Avoidance</td>
<td>27</td>
<td>(r = -.03, p = .45)</td>
<td>(r = .46, p = .01)</td>
<td>.01</td>
<td>.44</td>
<td>1, 24</td>
<td>.26</td>
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<td>.49</td>
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<tr>
<td>Arousal</td>
<td>full</td>
<td>(r = -.15, p = .21)</td>
<td>(r = .2, p = .14)</td>
<td>.04</td>
<td>1.11</td>
<td>1, 27</td>
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<td>.15</td>
<td>.24</td>
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<tr>
<td>Arousal</td>
<td>27</td>
<td>(r = -.15, p = .21)</td>
<td>(r = .22, p = .14)</td>
<td>.04</td>
<td>1.12</td>
<td>1, 24</td>
<td>.15</td>
<td>-.21</td>
<td>.15</td>
<td>.26</td>
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<tr>
<td>Assoc Features</td>
<td>full</td>
<td>(r = .36, p = .03)</td>
<td>(r = .37, p = .02)</td>
<td>.09</td>
<td>3.10</td>
<td>1, 27</td>
<td>.05</td>
<td>.30</td>
<td>.05</td>
<td>.32</td>
</tr>
<tr>
<td>Assoc Features</td>
<td>27</td>
<td>(r = .36, p = .03)</td>
<td>(r = .4, p = .02)</td>
<td>.09</td>
<td>2.68</td>
<td>1, 24</td>
<td>.06</td>
<td>.30</td>
<td>.06</td>
<td>.34</td>
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<tr>
<td>Sleep Disturbance</td>
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<td>(r = -.14, p = .23)</td>
<td>(r = .34, p = .03)</td>
<td>.04</td>
<td>1.4</td>
<td>1, 24</td>
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<td>.13</td>
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<td>Sleep Disturbance</td>
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<td>(r = -.14, p = .23)</td>
<td>(r = .33, p = .05)</td>
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<td>1.32</td>
<td>1, 24</td>
<td>.13</td>
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Table 4. Summarization of individual symptoms results.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Sample</th>
<th>Corr w/ IQ</th>
<th>Corr w/Horr</th>
<th>$R^2$ Change</th>
<th>$F$ ( df )</th>
<th>$p$</th>
<th>$b/\Lambda Q$</th>
<th>$p$</th>
<th>$b/horr$</th>
<th>$p$ (all $p$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrus Recol Int</td>
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<td>$r = .39$, $p = .02$</td>
<td>$r = -.05$, $p = .40$</td>
<td>.16</td>
<td>5.3</td>
<td>1, 27</td>
<td>.02</td>
<td>.41</td>
<td>.02</td>
<td>-.13</td>
</tr>
<tr>
<td>Intrus Recol Int</td>
<td>27</td>
<td>$r = .42$, $p = .01$</td>
<td>$r = -.06$, $p = .39$</td>
<td>.20</td>
<td>5.90</td>
<td>1, 24</td>
<td>.01</td>
<td>.45</td>
<td>.01</td>
<td>-.14</td>
</tr>
<tr>
<td>Dreams Dist Int</td>
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<td>1, 27</td>
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<td>-.30</td>
<td>.07</td>
<td>-.17</td>
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<td>$r = -.21$, $p = .15$</td>
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<td>1, 24</td>
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<td>.08</td>
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<td>ITRIAT Fre</td>
<td>full</td>
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<td>$r = .34$, $p = .33$</td>
<td>.06</td>
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<tr>
<td>ITRIAT Fre</td>
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<td>$r = .31$, $p = .06$</td>
<td>$r = .39$, $p = .02$</td>
<td>.06</td>
<td>1.80</td>
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<td>.25</td>
<td>.10</td>
<td>.34</td>
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<tr>
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<td>$r = -.30$, $p = .06$</td>
<td>$r = -.08$, $p = .34$</td>
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<td>1, 27</td>
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<td>-.29</td>
<td>.06</td>
<td>-.03</td>
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<td>$r = -.33$, $p = .05$</td>
<td>$r = -.04$, $p = .42$</td>
<td>.11</td>
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<td>.05</td>
<td>.02</td>
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<td>RRAF Fre</td>
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<td>$r = -.00$, $p = .50$</td>
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<td>.04</td>
<td>.06</td>
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<td>RRAF Fre</td>
<td>27</td>
<td>$r = -.37$, $p = .03$</td>
<td>$r = .02$, $p = .50$</td>
<td>.15</td>
<td>4.10</td>
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<td>SFFF Fre</td>
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<td>$r = -.15$, $p = .23$</td>
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<td>1, 24</td>
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<td>-.40</td>
<td>.06</td>
<td>.09</td>
</tr>
<tr>
<td>IOAF Fre</td>
<td>full</td>
<td>$r = -.31$, $p = .05$</td>
<td>$r = -.20$, $p = .14$</td>
<td>.08</td>
<td>3.00</td>
<td>1, 27</td>
<td>.07</td>
<td>-.30</td>
<td>.07</td>
<td>-.15</td>
</tr>
<tr>
<td>IOAF Fre</td>
<td>27</td>
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<td>$r = -.20$, $p = .17$</td>
<td>.10</td>
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<td>1, 24</td>
<td>.07</td>
<td>-.30</td>
<td>.07</td>
<td>-.14</td>
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</table>
Table 4 continued. Summarization of individual symptoms results.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Sample</th>
<th>Corr w/ IQ</th>
<th>Corr w/Horr</th>
<th>$R^2$ Change</th>
<th>$F$ ( df )</th>
<th>$p$</th>
<th>$b \wedge Q$</th>
<th>$p$</th>
<th>$b/horr$</th>
<th>$p$ (all $p$)</th>
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</thead>
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<tr>
<td>ESRF Fre</td>
<td>full</td>
<td>$r = -.42, p = .01$</td>
<td>$r = -.34, p = .03$</td>
<td>.13</td>
<td>4.70 1, 27</td>
<td>.02</td>
<td>-.37</td>
<td>.02</td>
<td>-.27</td>
<td>.06</td>
</tr>
<tr>
<td>ESRF Fre</td>
<td>27</td>
<td>$r = -.43, p = .01$</td>
<td>$r = -.33, p = .05$</td>
<td>.14</td>
<td>4.60 1, 24</td>
<td>.02</td>
<td>-.39</td>
<td>.02</td>
<td>-.26</td>
<td>.09</td>
</tr>
<tr>
<td>FODF Fre</td>
<td>full</td>
<td>$r = -.19, p = .16$</td>
<td>$r = -.10, p = .30$</td>
<td>.03</td>
<td>.83 1, 27</td>
<td>.19</td>
<td>-.17</td>
<td>.19</td>
<td>-.07</td>
<td>.37</td>
</tr>
<tr>
<td>FODF Fre</td>
<td>27</td>
<td>$r = -.34, p = .04$</td>
<td>$r = -.03, p = .44$</td>
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<td>3.24 1, 24</td>
<td>.04</td>
<td>-.35</td>
<td>.04</td>
<td>.04</td>
<td>.43</td>
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<tr>
<td>DFSAI Int</td>
<td>full</td>
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<td>$r = -.08, p = .33$</td>
<td>.18</td>
<td>6.13 1, 27</td>
<td>.01</td>
<td>-.44</td>
<td>.01</td>
<td>.16</td>
<td>.18</td>
</tr>
<tr>
<td>DSFAI Int</td>
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<td>$r = -.06, p = .38$</td>
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<td>.02</td>
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<tr>
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<td>full</td>
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<td>.01</td>
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<td>GBOCI Fre</td>
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<td>.17</td>
<td>5.42 1, 24</td>
<td>.01</td>
<td>.21</td>
<td>.01</td>
<td>.20</td>
<td>.14</td>
</tr>
<tr>
<td>Surv Guilt Int</td>
<td>full</td>
<td>$r = .29, p = .06$</td>
<td>$r = .12, p = .06$</td>
<td>.08</td>
<td>2.24 1, 27</td>
<td>.08</td>
<td>.28</td>
<td>.08</td>
<td>.07</td>
<td>.36</td>
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<tr>
<td>Surv Guilt Int</td>
<td>27</td>
<td>$r = .31, p = .06$</td>
<td>$r = .21, p = .15$</td>
<td>.08</td>
<td>2.02 1, 24</td>
<td>.09</td>
<td>.28</td>
<td>.09</td>
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<tr>
<td>Surv Guilt Fre</td>
<td>full</td>
<td>$r = .33, p = .04$</td>
<td>$r = .22, p = .13$</td>
<td>.09</td>
<td>2.70 1, 27</td>
<td>.06</td>
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<td>.06</td>
<td>.16</td>
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</tr>
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<td>Surv Guilt Fre</td>
<td>27</td>
<td>$r = .34, p = .04$</td>
<td>$r = .32, p = .05$</td>
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<td>2.43 1, 24</td>
<td>.07</td>
<td>.30</td>
<td>.07</td>
<td>.26</td>
<td>.18</td>
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</tbody>
</table>
Table 4 note, abbreviations, intensity of intrusive recollections (intrus recol int), intensity of recurrent and distressing dreams (dreams dist int), inability to recall important aspects of the trauma frequency (ITRIAT), restricted range of affect intensity (RRAI), restricted range of affect frequency (RRAF), sense of a foreshortened future frequency (SFFF) irritability and outbursts of anger frequency (IOAF), exaggerated startle response frequency (ESRF), feelings of detachment frequency (FODF), difficulty falling and staying asleep intensity (DSFAI), guilt by omission or commission frequency (GBOCF), guilt by omission or commission intensity (GBOCI), survivor guilt intensity (surv guilt int), survivor guilt frequency (surv guilt fre).

Individual Re-experiencing Symptoms.

Correlations were computed between the WAIS-R IQ standard scores and the 10 individual re-experiencing symptoms on the CAPS. Two significant correlations were found. The correlation between WAIS-R IQ and the intensity of recurrent and intrusive distressing recollections was $R = .39, p = .02$. The correlation between WAIS-R IQ and the intensity of recurrent and distressing dreams was negatively correlated at $R = -.32, p = .04$. Further explorations of these variables are provided below and summarized above in table 4.

Intrusive Recollections Intensity. First the correlation between WAIS-R IQ and the intensity of recurrent and intrusive, distressing recollections was $R = .39, p = .02, b = .41, p .02$. The participants’ horror rating was correlated with the participants’ intrusive recollections intensity (Intrus Recol Int) score. That correlation was $R = -.05, p = .40, b = -.13, p = .25$. A regression was then run to predict intrusive recollections symptom intensity by first entering the horror rating and then the IQ score. The WAIS-R IQ score was a significant unique predictor of intrusive recollection symptoms. The overall $R^2$ was .17. After partitioning out the effects of horror $R^2$ change was significant ($R^2$ change = .16,
The scores of 3 possible over-reporters were dropped and the data analysis was performed again on the refined sample to determine if over reporting influenced the results. First the correlation between WAIS-R IQ and the intensity of recurrent and intrusive, distressing recollections was $R = .42, p = .014, b = .45, p = .01$. Next the participants' horror rating was correlated with the participants' intrusive recollections intensity score. That correlation was $R = -.06, p = .39, b = -.14, p = .23$. A regression was then performed to predict intrusive recollections symptom intensity by first entering the horror rating and then the IQ score. The WAIS-R IQ score was a significant unique predictor of the intensity of intrusive recollection symptoms with the remaining 27 participant scores. The overall $R^2$ was .20. After partitioning out the effects of horror the $R^2$ change was significant ($R^2$ change = .20; $F(1, 24) = 5.87, p = .01$).

The methods used to obtain results other remaining individual symptoms in this section were the same used in examining the intrusive recollections intensity symptoms. Summarization of the remaining individual symptoms are listed in table 4.

Recurrent and Distressing Dreams Intensity. Analysis found that the WAIS-R IQ score was not a significant unique predictor of recurrent and distressing dreams (Dreams Dist Int) symptoms (full, $R^2$ change = .08; $F(1, 27) = 2.50, p = .07$) ($R^2$ change = .08, $F(1, 24) = 2.50, p = .08$).

Individual Symptoms of Avoidance
Correlations were computed between all 30 participants’ WAIS-R standard scores and the 14 individual avoidance symptoms on the CAPS. Three significant correlations and one trend were found. The correlation between WAIS-R IQ and the frequency of inability to recall important aspects of the trauma was $R = .31$, $p = .05$. The frequency of a restricted range of affect symptoms was negatively correlated with WAIS-R IQ at $R = -.34$, $p = .03$. The frequency of sense of foreshortened future symptoms was negatively correlated with WAIS-R IQ at $R = -.33$, $p = .04$. The correlation between the intensity of restricted range of affect symptoms and WAIS-R IQ was not significant but indicates a trend at $R = -.30$, $p = .06$. These correlations are explored further below.

Inability to Recall Important Aspects of the Trauma Frequency. The analysis found the WAIS-R IQ score was not a significant unique predictor of inability to recall important aspects of the trauma (ITRIAT) symptoms in either the full or the refined sample. ($R^2$ change = .06; $F(1, 27) = 2.07, p = .08$) ($R^2$ change = .06; $F(1, 24) = 1.75, p = .10$).

Restricted Range of Affect Intensity. The analysis found the WAIS-R IQ score was not a significant unique predictor of restricted range of affect intensity (RRAI) in the full sample ($R^2$ change = .06; $F(1, 27) = 2.50, p = .06$). In the refined sample the WAIS-R IQ score was a significant unique predictor of RRAI ($R^2$ change = .11; $F(1, 24) = 2.80, p = .05$).

Restricted Range of Affect Frequency. The analysis found the WAIS-R IQ score was a significant unique predictor of restricted range of affect (RRAF) for
both the full and the refined sample ($R^2$ change = .12, $F (1, 27) = 3.70$, $p = .04$) ($R^2$ change = .15, $F (1, 24) = 4.10$, $p = .05$).

Sense of a Foreshortened Future Frequency. The analysis found that the WAIS-R IQ score was a significant unique predictor of sense of a foreshortened future (SFFF) in the full sample ($R^2$ change = .10, $F$ change was $F (1, 27) = 3.00$, $p = .05$).

In the refined sample the WAIS-R IQ score was a not significant unique predictor of SFFF ($R^2$ change = .10; was $F (1, 24) = 2.81$, $p = .11$).

Feelings of Detachment Frequency. The analysis found that the WAIS-R IQ score was a not a significant unique predictor of feelings of detachment frequency (FODF) in the full sample ($R^2$ change = .29, $F$ change was $F (1, 27) = .83$, $p = .19$).

In the refined sample the WAIS-R IQ score was a significant unique predictor of FODF ($R^2$ change = .12; was $F (1, 24) = 3.24$, $p = .04$).

Individual Persistent Symptoms of Arousal

Correlations were computed between all 30 participants’ WAIS-R standard scores and the 10 individual persistent symptoms of arousal on the CAPS. Three significant correlations were computed. The frequency of irritability or outbursts of anger and WAIS-R IQ was negatively correlated at $R = -.31$, $p = .05$. The frequency of an exaggerated startle response and WAIS-R IQ was negatively correlated at $R = -.42$, $p = .01$. The intensity of difficulty falling or staying asleep and WAIS-R IQ was negatively correlated at $R = -.41$, $p = .01$. These
Correlations are explored further below.

Irritability and Outburst of Anger Frequency. The analysis found the WAIS-R IQ score was not a significant unique predictor of irritability and outbursts of anger frequency (IOAF) in either the full or the refined sample ($R^2$ change = .08; $F(1, 27) = 3.00, p = .07$) ($R^2$ change = .08; $F(1, 24) = 2.30, p = .07$).

Exaggerated Startle Response Frequency. The analysis found that the WAIS-R IQ score was a significant unique predictor of exaggerated startle response frequency (ESRF) in both the full and refined sample ($R^2$ change = .13; $F(1, 27) = 4.70, p = .02$) ($R^2$ change = .14; $F(1, 24) = 4.60, p = .02$).

Difficulty Falling and Staying Asleep Intensity. The analysis found the WAIS-R IQ score was a significant unique predictor of difficulty falling and staying asleep intensity symptoms (DSFAI) in both the full and the refined sample ($R^2$ change = .18; $F(1, 27) = 6.13, p = .01$) ($R^2$ change = .18; $F(1, 24) = 5.42, p = .02$).

Individual Associated Features Symptoms

Correlations were computed between all 30 participants WAIS-R IQ standard scores and the 10 individual associated features symptoms on the CAPS. Three significant correlations and one trend were computed. The frequency of guilt by commission and omission and WAIS-R IQ were significantly correlated at $R = .45, p = .01$. The frequency of survivor guilt and WAIS-R IQ were significantly correlated at $R = .33, p = .048$. The intensity of guilt by
commission and omission and WAIS-R IQ were correlated at $R = .47, p < 01$. The intensity of survivor guilt and WAIS-R IQ were not correlated significantly but are reported as a trend at $R = .29, p = .06$. These correlations are explored more fully below.

Guilt by Omission and or Commission Frequency. The analysis found the WAIS-R IQ score was a significant unique predictor of guilt by omission and or commission (GBOCF) in both the full and refined samples ($R^2$ change = .16; $F(1, 27) = 5.70, p = .01$) ($R^2$ change = .17; $F(1, 24) = 5.40, p = .01$).

Guilt by Omission and or Commission Intensity. The analysis found the WAIS-R IQ score was a significant unique predictor of the participants’ guilt by omission and or commission intensity (GBOCI) score in both the full and refined sample ($R^2$ change = .18; $F(1, 27) = 6.70, p = .01$) ($R^2$ change = .18; $F(1, 24) = 5.90, p = .01$).

Survivor Guilt Frequency. The analysis found the participants’ WAIS-R IQ score was not a significant unique predictor of survivor guilt frequency (Surv Guilt Fre) in either the full or the refined sample ($R^2$ change = .09; $F(1, 27) = 2.70, p = .06$) ($R^2$ change = .08; $F(1, 24) = 2.43, p = .07$).

Survivor Guilt Intensity. The analysis found the participants’ WAIS-R IQ score was not a significant unique predictor of survivor guilt frequency (Surv Guilt Int) in either the full or the refined sample ($R^2$ change = .08, $F$ change was $F(1, 27) = 2.24, p = .08$) ($R^2$ change = .08; $F(1, 24) = 2.02, p = .09$).

Ethnic Differences by Symptom Category
To investigate possible differences in PTSD symptoms as experienced between Caucasians and African-Americans t-tests were performed between the symptom category scores on the CAPS reported by the 2 groups. The n = 30 group was analyzed first. This group contained 21 Caucasians and 9 African-Americans. Given the extremely low number African-American participants these results will be interpreted cautiously. The differences indicated by the results of the analysis of PTSD symptoms by ethnicity are summarized in table 5.

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In the intensity of re-experiencing symptoms category the Caucasian mean was 28.05 with a standard deviation of 3.60 and the African-American mean was 24.22 with a standard deviation of 5.24. The assumptions of the Levene’s Test for Equal Variance were met (F = 3.15, p = .087). Assuming
equal variances, $t(28) = 2.34$, $p = .027$ indicating that the Caucasian participants in the sample reported significantly more intense re-experiencing symptoms than the African-Americans.

To eliminate over-reporting, the scores of the 3 participants in the sample which were selected by the MENT as possible over-reporters were dropped from the data. The remaining group $n = 27$ contained 18 Caucasians and 9 African-Americans. T-tests were again performed on the means computed for the symptom categories between the 2 groups. Subsequent ethnic difference analysis were run on the full sample first and then the sample was refined in the same manner as in this analysis.

In the refined sample the means and standard deviations for the intensity re-experiencing symptoms were as follows. The Caucasian mean was 28.20 with a standard deviation of 3.50 and the African-American mean was 24.22 with a standard deviation of 5.24. The assumptions of the Levene’s Test for Equal Variance were met ($F = 3.44$, $p = .08$). Assuming equal variances, $t(25) = 2.34$, at 25 degrees of freedom, $p = .028$ between the two groups this score indicates that the Caucasian participants in the sample may be reporting significantly more intense re-experiencing symptoms than the African-Americans.

In the intensity of associated features category among the guilt symptoms the Caucasian mean was 19.86 with a standard deviation of 5.60 and the African-American mean was 14.33, with a standard deviation of 9.27. The assumptions of the Levene’s Test for Equal Variance were not met ($F = 10.08$, $p$
so these results should be interpreted cautiously. The resulting score was \( t(28) = 2.031, p = .05 \) which may indicate Caucasian participants in the sample reported more intense associated features than the African-Americans.

In the refined sample the means and standard deviations for the intensity of associated features category was as follows. The Caucasian mean was 20.44 with a standard deviation of 5.80 and the African-American mean was 14.33, with a standard deviation of 9.27. The assumptions of the Levene's Test for Equal Variance were not met \( (F = 8.14, p = .009) \) so results should be interpreted carefully. The resulting score was \( t(25) = 2.12, p = .05 \) which may indicate that Caucasian participants in the sample reported significantly more intense associated features than the African-Americans in the sample.

In the total associated features category the Caucasian mean was 37.90 with a standard deviation of 9.82 and the African-American mean was 27.8 with a standard deviation of 18.13. The assumptions of Levene’s Test for Equal Variance were not met \( (F = 13.41, p = .001) \) so results should be interpreted cautiously. The score was \( t(28) = 2.0, p = .06 \) indicating a possible trend for Caucasian participants in the sample to report total associated features symptoms more frequently and of more intensity than the African-Americans.

In the refined sample the Caucasian mean in the total associated features category was 38.90 with a standard deviation of 10.24 and the African-American mean was 27.80 with a standard deviation of 18.13. The assumptions of Levene’s Test for Equal Variance were not met \( (F = 10.7, p = .003) \) so results
should be interpreted carefully. The score of $t(25) = 2.05, p = .05$ may indicate that Caucasian participants in the sample reported total associated features symptoms more frequently and of more intensity than the African-Americans.

In the total re-experiencing category there was a trend for Caucasians to report more re-experiencing symptoms than the African-Americans. The Caucasian mean was 53.86 with a standard deviation of 8.17. The African American mean was 46.89 and the standard deviation was 10.56. The assumptions for Levene’s Test for Equal Variance were met ($F = 1.21, p = .28$). Assuming equal variances, $t(28) = 1.97, p = .06$.

In the refined sample the Caucasian mean in the total re-experiencing category was 54.11 with a standard deviation of 7.75 and the African-American mean was 46.90 with a standard deviation of 10.56. The assumptions of Levene’s Test for Equal Variance were not met ($F = 10.7, p = .003$) so interpretation of the results must be done with reservation. The score of $t(25) = 2.02, p = .05$ may indicate Caucasian participants in the sample reported total re-experiencing symptoms more frequently and of more intensity than the African American participants in the sample.
DISCUSSION

Hypothesis 1 addressed re-experiencing symptoms as a category and examined their relations with IQ. It predicted that those participants with lower IQ would endorse significantly more frequent and more severe re-experiencing symptoms. The statistical analysis found that this was not the case. Combined re-experiencing categories of frequency and intensity were not correlated with the continuum of IQ. Higher IQ participants did report significantly more intense re-experiencing symptoms of intrusive recollections than the lower IQ participants. One possibility might be that participants with higher IQ have more developed perceptual skills as well as more developed skills related to memory. This could result from higher IQ individuals being better able to perceive and recall details of a traumatic event. Individual subtests on the WAIS-R require and evaluate memory skills. These subtests are vocabulary, information, similarities, digit span and coding (Sattler, 1992, chapters 7 and 10). WAIS-R subtests which require and evaluate perceptual skills are picture completion, picture arrangement, block design, object assembly and coding (Sattler, 1992, chapters 7 and 10). Since memory and perception are involved in WAIS-R IQ measurement it could be assumed that individuals who score higher on the WAIS-R would have better developed memory and perceptual skills than those who score lower.

In this study the SILS was used to estimate full scale WAIS-R IQ. Since the SILS is correlated with the WAIS-R full scale IQ from .73 to .90 over 11
studies (Zachary, 1986) it is reasonable to assume that higher scores on the SILS may be indicative of better developed memory and perception. These more developed skills may be reflected in more intense intrusive and distressing recollections among those with the higher IQs. Although there is little in the literature to support this, memory is defined as “Retention of information in the same form in which it was stored” by Kaufman, (1994, p.53). Given that better developed memory is correlated with higher IQ and if intrusive memories are retained as Kaufman states it would be reasonable to consider the possibility that higher IQ individuals would be better able to recall horrific information due to better developed abilities in this area. This would mean that information was better encoded and retained in the same horrific form in which it was encoded. This could be reflected in more intense and intrusive recollections in higher IQ individuals.

Hypothesis 2 predicted that those participants with lower IQs would endorse more frequent and more severe persistent symptoms of avoidance. This was not the case. The avoidance symptom categories of frequency, symptom intensity and total avoidance symptoms were not correlated with the continuum of WAIS-R IQ. It appears that there is no overall difference in how higher IQ and lower IQ individuals experience and report persistent symptoms of avoidance as a category of symptoms. Again, literature which directly addresses this is not available. If we conceptualize avoidance symptoms as a group of behaviors which result from trauma induced anxieties inherent in PTSD,
there is literature available. This would make intuitive sense because avoidance
of activities, people or events would be a means of lowering or avoiding an
increase in anxiety.

In a study of 80 male university students age 18-54, Matthews (1986) investigated the relations between anxiety variables and intelligence test performance. He found that intelligence test performance was independent of anxiety. In another study conducted with 229 high school students which looked at anxiety and academic performance in relation to intelligence the results were similar. It was hypothesized that individuals of superior intelligence would perform better on academic measures indicating lower anxiety. The findings in this study did not support this hypothesis (Kaneker, Neelakantan, and D'Souza, 1976). The results of these two studies are supported by the present findings in that there was no significant relation between persistent symptoms of avoidance and intelligence.

The examination of the individual symptoms comprising the persistent symptoms of avoidance found that there were several differences in how individual symptoms of avoidance were experienced between those of higher and lower IQ. There were 3 frequency symptoms and 1 intensity symptom reported more often by lower IQ participants. These symptoms are the frequency and intensity of restricted range of affective symptoms, the frequency of feelings of detachment and the frequency of sense of a foreshortened future. Lower IQ participants reported that they were emotionally numb and unable to
feel emotions like love and happiness significantly more frequently than higher IQ participants. They also felt unconnected to others and felt there was little future for them. Given that these individuals also experience 2 individual arousal symptoms more frequently (startle response, difficulty falling or staying asleep) which may lead to negative thoughts and greater psychological distress (Harvey, 2002), it follows that psychological distress would result in the increase of the frequency of affective symptoms and thoughts related to a negative future prediction in these individuals.

Higher IQ participants reported more frequently being unable to recall important aspects of trauma. Although it is possible that higher IQ individuals have better developed abilities related to memory this sample also reports more intense intrusive recollections. It would not be surprising if these traumatic and intrusive ruminations interfered with the way their original trauma is recalled. This may also be reflected in the increased number of guilt related symptoms this group experiences..

Hypothesis 3 predicted that the lower IQ participants would endorse significantly more frequent and more intense persistent symptoms of increased arousal. This was not the case. The statistical analysis found that the frequency and intensity of persistent symptoms of arousal endorsed by both higher and lower IQ participants were not significantly different. It is concluded that there is no overall difference in how the participants experience and report persistent symptoms of arousal as a category of symptoms based on IQ. Again there is
little directly applicable literature pertaining to persistent symptoms of arousal and level of intelligence. To understand why findings in this study did not indicate a correlation between the grouped symptoms of arousal and level of intelligence, it may be useful to conceptualize arousal symptoms as heightened physical reaction to stress and anxiety. Given that the literature provides evidence that IQ and anxiety are not correlated (Kaneker, Neelakantan, and D'Souza, 1976; Matthews 1986) it would make intuitive sense that the resultant symptoms of arousal (as a group) would not be strongly correlated with IQ.

Three individual symptoms of arousal were significantly correlated with the lower IQ group. The frequency of an exaggerated startle response was correlated with lower WAIS-R IQ. The intensity of problems or difficulties associated with falling or staying asleep was also correlated with lower WAIS-R IQ participants. The frequency of irritability and outbursts of anger was also reported more often by the lower IQ participants. Given that the lower IQ group reports more frequent arousal symptoms it makes intuitive sense that they would also report more sleep related difficulties with falling or staying asleep. Research shows that individuals who experience higher autonomic nervous system activation and affective emotional distress in fact experience more sleep related difficulties (Harvey, 2002). It is possible that more serious arousal symptoms in this group are the result of more hopelessness, loss of control and desperation related to affect. Describing a cognitive model of insomnia, Harvey (2002) found that heightened arousal leads to selective attention and
concentration on negative thoughts and ideas which in turn create increased
distress and intensify arousal. Heightened autonomic and nervous system
arousal could also result in an exaggerated startle response.

Heightened arousal, sleep difficulties and negative affect thoughts and
ideas could work together to produce frustration. This would in turn lead to more
frequent irritability and outbursts of anger among the lower IQ individuals.

Hypothesis 4 predicted that higher IQ participants would endorse more
frequent and more severe associated features symptoms as a category. In the
full sample this hypothesis was partially correct. This group did experience more
symptoms of guilt in both intensity and frequency. They did not experience
significantly different levels of derealization, depersonalization or in reduction of
awareness. This was not the case in the refined sample. In the refined sample
there was not significant difference between how the lower and higher IQ
individuals experienced associated features symptoms as a combined category of
symptoms however it is reported as a trend. In retrospect it was not
methodologically appropriate to evaluate the associated features symptoms as a
group. The associated features category section of the CAPS contains symptoms
that are less related to each other than symptoms in other category sections.
Intercorrelations of items in the associated features category of the CAPS range
from less than .01 to .76. Symptoms evaluated in this section include intensity
and frequency of feelings related to guilt as well as symptoms related to
depersonalization, derealization and reduction of awareness. Since this is a broad
category of symptoms it was not useful to attempt to correlate them as a group. Loss of awareness, depersonalization and derealization are conceptualized as psychological reactions to traumatic stress. They are disturbances in function, identity and memory that occur as a reaction to stress (DSM-IV-TR, 2000). Guilt is defined as a multi-dimensional construct with affective and cognitive dimensions. This dimension involves beliefs regarding one’s role in a negative event (Kubay and Watson, 2003).

An examination of individual symptoms in the associated features category found two differences in the way higher and lower IQ participants reported individual symptoms. Higher IQ participants reported significantly more frequent and more intense symptoms regarding guilt by omission and or commission than lower IQ participants. One reason for this could be that memory is a strong component of IQ (Sattler, 1992, chapters 7 and 10). Better developed memory would aid in the recall of personal aspects in the response to trauma which may result in feelings of guilt. Another explanation for the increase in frequency and intensity of guilt symptoms among higher IQ participants may be in the relations between morality and intelligence. Harris, Mussen, and Rutherford (1976) examined moral judgment in 33 adolescent males. They found that the quality of moral judgment was highly correlated with intelligence (Hoffman, 1977) compared 25 higher intelligence level children (mean IQ 136) with 25 lower IQ children (mean 103). He found that the higher IQ group was more advanced in determining responsibility for action as well as
the meaning of rules. Hoffman (1977) relates that higher IQ children are better equipped than average IQ children to internalize parental rules and may do so more strongly. He believes that the stronger internalization of parental rules leads to less flexibility and polarized thought in regard to morality. This might explain the finding of more frequent and intense guilt among the higher IQ participants in this sample. In an investigation of the relations between morality and intelligence, Chassell (1934) incorporated the results of 300 studies involving 300,000 subjects in a meta-analysis. He found that the relations between the two are high and concludes that in the general population the correlation is slightly less than .70. Given that higher IQ participants also endorsed more re-experiencing symptoms. It would be interesting to know if these re-experiencing symptoms are ruminations related to guilt related symptoms and incidents.

Hypothesis 5 predicted that higher IQ participants would endorse more frequent and more severe sleep related difficulties. This was not the case. The frequency and intensity of sleep difficulties endorsed by both the higher and lower IQ participants were not significantly different. In his analysis of insomnia and cognition, Harvey (2002) concludes that sleep problems are related to selective attention, erroneous beliefs and distorted cognitive perceptions rather than distressing dreams. Given that sleep related difficulties are apparently not the result of more frequent and intense distressing dreams, it is not surprising that there was no difference between the two groups in this category. It makes intuitive sense that distressing dreams are the result of perceptions and beliefs
that are responsible for sleep disturbances rather than their cause. The sleep difficulty category was made up of the frequency and intensity of recurrent distressing dreams symptoms combined with the frequency and intensity of difficulty of falling or staying asleep symptoms. The intensity and frequency of difficulty falling or staying asleep symptoms were significantly greater for the lower IQ participants as explained above in the discussion of individual symptoms of arousal.

Ethnic differences were found between symptoms reported by African-Americans and Caucasians. There was a trend for Caucasian participants to report greater total re-experiencing symptoms. An examination of the data found that this was the result of reported intensity rather than frequency of re-experiencing symptoms. It is possible that African-American participants are cognitively oriented more to problems that persist in their daily lives as opposed to older problems. As members of a minority, African-Americans are much more likely to experience race-related problems on a daily basis. The distraction of current and new problems may be reflected in a cognitive orientation toward the present. It is reported that African-American coping strategies and defensive behaviors are shaped by these daily problems and experiences (Gibbs, Huang, 1998, p. 149-197). Caucasians are not subjected to new and chronic daily life stressors involving racism and prejudice and may be less preoccupied ruminating about present problems and would could be more likely to engage in rumination of past trauma. There is little specific information available in the literature to
bolster this speculation.

In the area of total associated features, there was a trend for Caucasian participants to report more intense and frequent associated features symptoms. This was the result of greater intensity scores in the associated features category. Examining the individual symptoms it was determined that the guilt related symptoms were more frequently endorsed by Caucasians. Differences might be attributed to differences in self-concepts regarding self-esteem. African-Americans often have higher self-esteem than Caucasians. This may result as a way of coping with daily stress (Gibbs, Huang, 1998, p. 151). It seems intuitively possible that self-esteem would preclude negative feelings of self-debasement related to guilt. Guilt is an affective state related to personal anxiety (Kubay and Watson, 2003). African-Americans are reported to display symptoms of anxiety in ways that are less common among Caucasians. Culturally based “child rearing patterns, particularly in low-income African-American families often reinforce the externalization of anxiety” (Gibbs, and Huang, 1998, p.188). Anxiety in African-Americans may be denied, acted out or displaced (Gibbs and Huang, 1988, p.188) whereas guilt is an internalized cognitive affective state (Kubay and Watson, 2003).

Research Implications

The results here are difficult to generalize beyond the participants of this study. Further analysis of other groups with larger numbers of participants would be necessary to draw confident conclusions. Although the results of this
study do not reveal causal information the results seem to be compatible with differences in PTSD symptomatology as a function of IQ rather than merely by different types of trauma. It is possible that this information may have applied utility. If further research supports these findings and allows greater generalizability, the results of this study would be of importance to clinicians providing care and therapy to individuals with PTSD. Focusing treatment to areas of greater dysfunction in individuals would lead to better treatment and better response to treatment. “Many therapists tailor their therapeutic approach to their client’s needs” (Halonen & Santrock, 1996, 617) Focused treatment would be more cost effective. Patient improvements in over shorter periods of time would be likely to result. The current emphasis of managed care is on management of cost, “favoring short-term over long-term therapy” (Halonen & Santrock, 1996, 619). It is possible that treatment of individuals with higher IQs would be more focused and effective if it targeted re-experiencing symptoms and guilt symptoms. Treatment for lower IQ individuals may be more effective if it were focused on affect related symptoms. By treating affect symptoms, then arousal symptoms then sleep problems may be eased.

The focus of continuing research in this area should be to replicate the findings of this study using other populations with PTSD. Generalizability would be increased through replication with other PTSD samples. In addition it would be useful to know whether the higher levels of intrusive recollection symptoms reported by the higher IQ participants consisted of ruminations concerning
thoughts of guilt over acts involving omission and or commission. Intuitively this
would add strength to the relations between IQ and guilt symptoms.

Limitations

The results of this study must be interpreted with considerable
reservation. This sample of PTSD participants is an extreme sample made up of
individuals with chronic
PTSD. This sample is not representative of the general population of those
individuals with PTSD. It contains only Caucasian and African-American males
receiving treatment at the Dallas Veterans Medical Center and all are between
the ages of 48 and 68. All were exposed to varying degrees of trauma during
different length tours of duty during different periods of the Vietnam War. This
sample is a small sample. A larger sample may produce differing results.
Especially small was the sample size of African-Americans used to compare
African-American reported PTSD symptoms to the Caucasian PTSD symptoms.
APPENDIX A

INDEX TRAUMA DESCRIPTION FORM
Index Trauma Description Form

Please write a brief description of your “trauma”—the most focused event, or set of events, that you believe caused your posttraumatic stress disorder. Please describe (in story form, if possible) what happened, when it happened, what persons were involved, and what about the experience was traumatizing from your particular point of view. It is not necessary to describe your PTSD symptoms in this story (other questionnaires will ask you about that); here you are to focus on and describe the traumatic experience itself. You may speak with your therapist or another qualified professional should this process prompt a desire to do so.)

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APPENDIX B

DEMOGRAPHIC QUESTIONNAIRE
2000 UNT-VA Studies -- Demographic Information
Besyner, Sewell, et al.

1. Date of Birth
2. Ethnicity (1=Caucasian (White), 2=African American, 3=Hispanic, 4=Asian/Pacific Islander, 5=Native American, 6=Other (specify) ________________)
3. Education Level (1=High School Diploma, 2=GED, 3=Some College, 4=College Graduate, 5=Graduate Degree)
4. Most Recent Occupation (to be coded later): ________________ (include year and income if available)
5. Marital Status (1=Married or living as Married, 2=Divorced, 3=Separated, 4=Widowed, 5=Never Married)
6. Branch of Service (1=Army, 2=Marines, 3=Navy, 4=Air Force)
7. Months of Military Active Duty: From ______ to ______
8. Post Active Duty Reserve (1=Yes, 2=No)
9. Rank Achieved (to be coded later): ________________
10. Months in Vietnam: From ______ to ______
11. Number of Tours
12. Number of Times Wounded or Hospitalized in Vietnam
13. Significant Combat-Related Physical Impairment (1=Yes, 2=No, If Yes, specify: ________________)
14. Prisoner of War (1=Yes, 2=No)
15. Date Entered VA System
16. Number of VA Hospitalizations
17. Date of First PTSD Diagnosis
18. Substance Dependence Diagnosis OR Past Treatment (1=Yes, 2=No)
19. Other Diagnoses (to be coded later): __________________________

Note to File Reviewer: All items except for numbers 4, 9, and 19 are to be coded in the left-hand blank at the time of the file review. Any item that cannot be completed because of missing information is to be coded with a "-9".
APPENDIX C

VETERANS ADMINISTRATION RESEARCH CONSENT FORM
VA RESEARCH CONSENT FORM

Subject Name: ___________________________ Date: ___________________________

Title of the Study: The Relations Between Response Styles and Treatment Complication
in Combat Veterans with PTSD

Principal Investigator: James Besyner, Ph.D.  VAMC: Dallas, TX

Co-Investigators: Kenneth W. Sewell, Ph.D., Reegan Andrews, Ph.D.

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the proposed procedures. It describes the procedures, benefits, risks, discomforts of the study. It also describes the alternative treatments that are available to you and your right to withdraw from the study at any time. It is important for you to understand that no guarantees or assurances can be made as to the results of the study.

PURPOSE OF THE STUDY AND HOW LONG IT WILL LAST:

You are being asked to volunteer for a research study investigating factors that can contribute to challenges in the treatment of posttraumatic stress disorder (PTSD). Such factors include memories of significant events, symptoms, and extent of disability. In order to conduct our study, we will be asking you to complete some psychological tests and be interviewed concerning these factors. Your responses will be confidential and in no way will affect your treatment or your compensation status with the VA. All in all, your involvement should take approximately 2 to 3 hours.

DESCRIPTION OF THE STUDY INCLUDING THE PROCEDURES TO BE USED:

You will be asked a series of questions regarding your symptoms of PTSD, your treatment, and your experiences with the VA. You will be asked to complete some psychological tests (some with pencil and paper and some at a computer screen). Also as part of your participation in the study, your therapist will be asked to identify aspects of your condition that might complicate your treatment. Finally, your medical records will be consulted to code your diagnosis service-connected status, and demographic information (date of birth, education, etc.).

DESCRIPTION OF EXPERIMENTAL PROCEDURES/ELEMENTS WHICH MAY RESULT IN DISCOMFORT OR INCONVENIENCE:

Because some of the interview questions are in reference to your PTSD symptoms, it is possible that you might experience some emotional discomfort during your involvement in the study. You are free to discontinue at any time should your discomfort become unacceptable.

Initials: __________  Date: __________
DESCRIPTION OF EXPERIMENTAL PROCEDURES/ELEMENTS WHICH ARE ASSOCIATED WITH FORESEEABLE RISKS:

There are no foreseeable risks associated with the procedures of this research study.

ALTERNATIVE TREATMENTS:

As this research study does not involve any experimental treatment components (only assessment), there will be no disruption in your on-going treatment.

BENEFITS TO THE PATIENT OR TO OTHERS:

As this research study does not involve any treatment per se (only assessment), there are no specific benefits associated with your involvement. However, a better understanding of how psychological status, response styles, and treatment complicators are associated with PTSD will result in a professional community (psychologists, psychiatrists, social workers, and policymakers) that is better equipped to assist persons with PTSD. Thus, your involvement in the project might indirectly benefit persons who are treated for PTSD.

CONFIDENTIALITY OF RESEARCH RECORDS:

The investigators maintain confidentiality of your research records in the same way as your other medical records. No one has access to your records except as required by law. You are, however, authorizing the Dallas VA Institutional Review Board to inspect your medical and research records. If you choose to participate in the study, the FDA has the right to examine your research records. Your name as a subject in this study is confidential, and will not be included in any publication prepared as a result of this study.
COMPENSATION FOR ANY RESEARCH RELATED INJURY:

The investigators will make every effort to prevent injury that could result from this research. While there is no requirement for the VA to provide compensation for injuries related to research, it will provide reasonable medical treatment for injuries related to research in accordance with Federal law. You do not give up any legal rights to compensation for injuries related to research by signing this form. The Federal Tort Claims Act is a way to request compensation from the government for injuries related to research in VA research subjects. Investigators at the VA will advise you about medical treatment available at the Dallas VA Medical Center in case of bad effects, which you should report to them promptly. Investigator’s phone numbers are at the end of this form.

REVIEW FOR PROTECTION OF PARTICIPANTS:

This research study has been reviewed and approved by the Institutional Review Board of the Dallas VA Medical Center, and by Institutional Review Board of the University of North Texas.

RESEARCH SUBJECT’S RIGHTS: I have read or have had read to me all of the above.

_________ has explained the study to me and answered all of my questions. I have been told the risks or discomforts and possible benefits of the study. I have been told of other choices of treatment available to me.

I understand that I do not have to take part in this study, and my refusal to participate will involve no penalty or loss of rights to which I am entitled. I may withdraw at any time without penalty or loss of VA or other benefits to which I am entitled. The study personnel can stop my participation at any time if it appears to be harmful to me, if I fail to follow directions for participation in the study, if it is discovered that I do not meet the study requirements, or if the study is canceled.

In case there are problems or questions, I have been told that I can call Dr. Besyner at 214-857-0534 during the day or at 800-725-4436 after hours.

Initials: ______ Date: ______
Department of Veterans Affairs

VA RESEARCH CONSENT FORM

Subject Name: __________________________ Date: ____________
Title of the Study: The Relations Between Response Styles and Treatment Complication in Combat Veterans with PTSD
Principal Investigator: James Besyner, Ph.D. VAMC: Dallas, TX
Co-Investigators: Kenneth W. Sewell, Ph.D., Reagan Andrews, Ph.D.

If you have any questions about your rights as a participant in this study, you may contact the Chairman, Subcommittee on Human Studies at the Dallas VA Medical Center: (214) 857-0291.

I understand my rights as a research subject, and I voluntarily consent to participate in this study. I understand what the study is about and how and why it is being done. I will receive a signed copy of this consent form.

Subject’s Signature __________________________ Date ____________
Signature of Subject’s Representative* __________________________ Subject’s Representative (Print) __________________________
Signature of Witness __________________________ Witness (Print) __________________________
*only required if subject is not competent

For the Investigator or Designee:
I certify that I have reviewed the contents of this form with the person signing above, who, in my opinion, understood the explanation. I have explained the known side effects and benefits of the research.

Principal Investigator’s Signature (or authorized representative) __________________________ Date ____________
Telephone Number: 214-857-0534

IF MORE THAN ONE PAGE IS USED, EACH PAGE (VAF 10-1086A) MUST BE CONSECUTIVELY NUMBERED AND SIGNED.
INVESTIGATIONAL PATIENTS' BILL OF RIGHTS

1. Be informed of the nature and purpose of the experiment.

2. Be given an explanation of the procedures to be followed in the medical experiment, and any drug or device to be utilized.

3. Be given a description of any discomforts and risks reasonable to be expected from the experiment.

4. Be given an explanation of any benefits to the patient reasonable to be expected from the experiment, if applicable.

5. Be given a disclosure of any appropriate alternative procedures, drugs, or devices that might be advantageous to the patient, and their relative risks and benefits.

6. Be informed of the avenues of medical treatment, if any, available to the patient after the experiment if complications should arise.

7. Be given an opportunity to ask any questions concerning the experiment or the procedures involved.

8. Be instructed that consent to participate in the medical experiment may be withdrawn at any time and the patient may discontinue participation in the medical experiment without prejudice.

9. Be given a copy of the signed and dated written consent form.

10. Be given the opportunity to decide to consent or not to consent to a medical experiment without the intervention of any element of force, fraud, deceit, duress, coercion, or undue influence on the patient's decision.
REFERENCE LIST


Sternberg, R.J. (1999), Intelligence as developing expertise. *Contemporary Educational Psychology* 24, 359-375.


