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Psychometric properties and factor structure of the computerized PTSD scale -multimedia version among adult samples reporting trauma

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PSYCHOMETRIC PROPERTIES AND FACTOR STRUCTURE OF THE COMPUTERIZED PTSD SCALE – MULTIMEDIA VERSION AMONG ADULT SAMPLES REPORTING TRAUMA

by

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Abstract

This study investigated the psychometric properties of the Computerized PTSD Scale-Multimedia Version (CPS-M: Richard, Mayo, Bohn, Haynes, & Kolman, 1997), a self-administered adaptation of the Clinician-Administered PTSD Scale (CAPS: Blake, Weathers, Nagy, Kaloupek, Klauminzer, Charney, & Keane, 1990). The sample included 161 participants from both a veteran's hospital and from a large urban outpatient HMO system who reported a history of trauma. Indices of internal consistency reliability (i.e., inter-item correlations, item-scale correlations, coefficient alpha) and temporal stability fell in satisfactory ranges. To assess convergent and discriminant validity, correlations were calculated between the CPS-M and the following instruments: Purdue PTSD Scale, Beck Depression Inventory II (BDI-II), Hospital Anxiety and Depression Scale (HADS), Yale-Brown Obsessive Compulsive Scale (YBOCS), and Antisocial Behavior Inventory (ASBI). As hypothesized, the CMS-M was most strongly correlated with another measure of PTSD ($r = .90$) followed by the BDI-II ($r = .85$), HADS ($r = .79$), YBOCS ($r = .71$), and ASBI ($r = .25$). Confirmatory factor analysis procedures were used to assess fit of a set of nested measurement models. The fit of four different measurement models was tested. An oblique four-factor, first order model composed of reexperiencing (B1-B5), avoidance (C1-C2), dysphoria (C3-C7 & D1-D3), and hyperarousal (D4-D5) provided the best fit to the data.

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LIST OF ABBREVIATIONS

ASBI	Antisocial Behavior Inventory
BDI	Beck Depression Inventory
CAPS	Clinician Administered PTSD Scale
CARS	Computer Anxiety Rating Scale-Respecified Model
CIV-MISS	Civilian Mississippi Scale for PTSD-Revised
CPS	Computerized PTSD Scale
CPS-M	Computerized PTSD Scale-Multimedia Version
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders-4th edition
HADS	Hospital Anxiety and Depression Scale
LEC	Life Events Checklist
PCL	PTSD Checklist
PTSD	Posttraumatic Stress Disorder
Y-BOCS	Yale-Brown Obsessive Compulsive Scale

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Introduction

There are several methods for assessing the presence or severity of Posttraumatic Stress Disorder (PTSD). Clinicians may select from a broad array of options on the basis of the intended purpose of the data collection (Barlow, 2002). The most common assessment methods are clinician-administered interviews and self-report instruments. Computer adaptations of self-report measures and interviews are available but seldom used. Matching the purpose of the assessment with the assessment method requires both logistical and qualitative considerations. For example, paper-and-pencil formats are widely used for screening purposes but may not provide adequate detail for treatment planning. Structured and semi-structured interviews are less desirable for widespread screening because of time and resource requirements, but they may help build rapport and provide a better understanding of psychological and behavioral functioning. Interviews can also be useful for establishing a differential diagnosis but are cumbersome when used for rapid screening or epidemiological studies. The most common clinical interview for PTSD is the Clinician-Administered PTSD Scale (CAPS: Blake et al., 1990).

The CAPS is a reliable and valid instrument to assess PTSD and has become the gold standard in the field of traumatic stress studies. However, it is extremely time-consuming to administer and to train interviewers. To address these and other issues, a computerized version of the CAPS was developed (CAPS-Multimedia or CPS-M). The following sections provide some of the background for the development of the CPS-M. Specifically, the initial part of this paper will briefly describe the CAPS, aspects of computerized assessment, previously developed computerized versions of the CAPS, and initial CPS-M psychometric results with data collected from a student sample reporting a

trauma history. Last, results from this study examining the psychometric properties of the CPS-M in an adult sample are presented.

The Clinician-Administered PTSD Scale (CAPS)

The CAPS is a semi-structured diagnostic interview that is widely considered the "gold standard" assessment for PTSD (e.g., Forbes, Creamer, & Biddle, 2001) and has been used in more than 200 published studies, making it the most widely used PTSD interview (Weathers, Keane, & Davidson, 2001). The CAPS first assesses dimensions of the traumatic event. Subsequent items assess the frequency and intensity of PTSD symptoms within the previous thirty days. CAPS items use examples to contextualize rating anchors for interviewers. Features of the CAPS reflect a number of recommendations by Watson (1990) for characteristics of PTSD assessment instruments. First, items directly reflect the diagnostic criteria. Second, scoring procedures permit both dichotomous and continuous scoring at the item, criterion, and diagnostic levels. Third, psychometric evaluations demonstrate acceptable validity and reliability. Last, trained non-clinicians are able to use the measure effectively. The CAPS takes roughly an hour to administer and additional time to score and interpret results. Potential clinician administration and data collection errors include interviewer biases and deviation from protocol questions (protocol drift). Computerization of this instrument would capitalize on its strengths while decreasing the threats from its weaknesses.

Computerized Assessment

Computerized assessment instruments provide a variety of benefits, including reduced demands on time and resources, increased speed of data analysis, elimination of clinician administration and scoring error, assurance of complete data collection, and

algorithms to improve diagnostic decision-making (Richard & Bobicz, 2003). For example, item response omissions cannot occur because item responses are required before subsequent items are presented.

Research has shown that computerized assessment is often preferred to face-to-face and pencil-and-paper assessment methods by clients and research participants. Eighty-seven percent of 207 research participants indicated a preference for the computerized version of the Schedule for Nonadaptive and Adaptive Personality over the paper-and-pencil version due to reduced time demands and ease of use (Simms & Clark, 2005). University students reporting self-concept information preferred computer formats over pencil-and-paper formats (Vispoel, 2000; Vispoel, Boo, & Bleiler, 2001). A group of 78 inpatients indicated a preference for the computer format after they completed a battery of neuropsychological and psychopathological assessments (Weber et al., 2003). Reactions from a sample of substance abusers to automated assessment were generally positive (e.g., Hile & Adkins, 1997). Richman-Hirsh, Olson-Buchanan, and Drasgow (2000) reported positive participant reactions to computer formats in a sample of 131 manufacturing and retail managers. Additionally, an even higher preference was reported for the multimedia interface.

Computer interviews may foster disclosure of more sensitive information than face-to-face interviews (Turner, Ku, Rogers, Lindberg, & Pleck, 1998). As a result, the quality of information collected may be greatly enhanced, and clinical inferences may be improved. This is particularly relevant to PTSD assessment because symptoms may result from traumatic experiences that are difficult or embarrassing to discuss (e.g., unwanted sexual experiences).

Computerized assessment software has been developed to address a wide range of

clinical populations. For example, recent efforts include the Computer Adaptive Version of the Schedule for Nonadaptive and Adaptive Personality (SNAP; Simms & Clark, 2005), Composite International Diagnostic Interview (CIDI-Auto) for mood and anxiety disorders (Komiti et al., 2001), MicroCog for assessment of cognitive functioning (Elwood, 2001), BodyImage for assessing figure distortions of eating-disordered clients (Shibata, 2002), an electronic version of the SF-36 General Health Questionnaire for primary care settings (Ryan, Corry, Attewell, & Smithson, 2002), the Computerized Suicide Risk Scale for psychiatric inpatients (Modai, Ritsner, Kurs, Mendel, & Ponizovsky, 2002), and the Acceptance of Coercive Sexual Behavior (ACSB), which is a multimedia instrument that measures adolescent dating attitudes (Teten, Hall, & Pacifici, 2005). Computer applications in psychological assessment have undergone considerable growth, and continued growth is expected. For reviews of computerized assessment, see Sampson (2000), Epstein and Klinkenberg (2001), and Richard and Lauterbach (2003).

Prior Computerization of the CAPS

Two computerized versions of the CAPS have been developed. The first, the Computerized Clinician-Administered PTSD Scale (CC-1-R: Neal, Busuttil, Herapath, & Strike, 1994) was developed as a screening instrument to detect PTSD symptoms in individuals exposed to large-scale disaster or conflict. The computer interview took 15 minutes to complete and immediately computed scores. The 34 CC-1-R items replicated the CAPS interview items, which were adapted to a self-administered computerized format. Items assessed the frequency and intensity of each of the 17 PTSD symptoms. A pilot study using 10 participants who completed the CAPS and the CC-1-R led to the modification of 12 items on the basis of frequency and intensity score discrepancies. Reliability and validity

were then examined with 40 British Royal Air Force combat veterans. Internal consistency for the Total Severity Score (i.e., the sum of the 17 frequency and intensity pairs for each symptom), was .92. Correlation coefficients between the CAPS and the CC-1-R were .87 for Criterion B (reexperiencing), .92 for Criterion C (numbing and avoidance), .89 for Criterion D (arousal), and .95 for the Total Severity Score. The authors reported sensitivity of .95, specificity of .95, and predictive value for CAPS diagnosis of .95, although type of predictive value and diagnostic cutoff scores were not reported. When compared to a diagnostic criterion, sensitivity refers to an instrument's ability to detect PTSD cases (probability that the instrument score is in the clinically-significant range given the presence of PTSD) and specificity refers to the ability to correctly identify those without the disorder (probability that the instrument score is not in the clinically significant range given the absence of the disorder). Twenty-four-hour test-retest reliability for the Total Severity Score was .99 in a separate sample of 10 inpatients. The CC-R-1 has not been used in any other published studies.

Richard (1999) developed the second computerized version of the CAPS. The Computerized PTSD Scale (CPS) is a nonmultimedia adaptation of the CAPS in which questions are presented on screen and participants respond by using a mouse to click response options. Like the CAPS, the CPS first assesses for exposure to a traumatic event and stimulus parameters of the traumatic event. The CPS then assesses frequency and intensity dimensions for each of the 17 PTSD symptoms. In a series of three studies, the psychometric properties of the CPS were investigated. Study 1 examined CPS test-retest reliability in a sample of 25 PTSD inpatient combat veterans. Study 2 examined CPS convergent and discriminant validity, internal consistency, and test-retest reliability in a

sample of 128 undergraduate college students. Study 3 was a replication of Study 2 with factor analysis using a sample of 143 Vietnam combat veterans.

In Study 1, test-retest reliability was .92 for the Total Severity Score, .88 for Criterion B (reexperiencing), .87 for Criterion C (avoidance), and .92 for Criterion D (arousal). The test-retest reliability coefficient for the Total Severity Score in Study 2 was .87 and ranged from .79 to .82 for the subscales (i.e., Criteria B, C, and D symptom clusters). Alpha coefficients were .91 for the Total Severity Score and ranged from .81 to .88 for the subscales. The CPS correlated .84 with the Civilian Mississippi Scale, .69 with the Beck Depression Inventory, .59 with the Beck Anxiety Inventory, and .21 with the Antisocial Behavior Inventory. In Study 3, alpha coefficients were .96 for the Total Severity Score, .95 for Criterion B, .91 for Criterion C, and .89 for Criterion D. The CPS correlated .87 with the Mississippi Scale for Combat-Related PTSD, .74 with the Beck Depression Inventory, .74 with the Beck Anxiety Inventory, .32 with the Antisocial Behavior Inventory, and .14 with the Combat Exposure Scale. Factor analysis of CPS items showed that 65% of the variance was accounted for by a single factor. When taken together, these data provide robust support for the computerized version of the CAPS.

Multimedia Revision of the CPS-M

The term *multimedia* refers to computer-mediated integration of text, graphics, video, and/or sound. Multimedia programs are frequently used for instructional or educational purposes because human reception and understanding of information is increased when multimedia formats are used (Hartley, 2001). Implications for psychological assessment are (a) flexibility for the user based on his/her characteristics and skill level (e.g., by relieving literacy demands on subjects with reading problems or poor education),

(b) reduction of user interpretation error by making the task less demanding, (c) reduction of response error based on misinterpretations, and (d) simulation of clinical interviewing (Saxena, Kothari, Jain, & Khurana, 2002). In addition, multimedia formats enhance comfort level in dealing with the software and are more interesting to clients than are text-based formats. Finally, digitized audio files make multilingual versions possible.

The CPS-M, a multimedia adaptation of the CAPS developed by Richard et al. (1997), was evaluated in two initial studies. The CPS-M takes roughly 15 to 20 minutes to complete, after which a summary report is automatically generated. The CPS-M processes several symptom presence algorithms derived from the CAPS literature and reports diagnostic information. The CPS-M incorporates graphics and sound files. Multilingual versions are planned. In Study 1, 25 undergraduates, graduate students, and psychologists provided qualitative feedback on the interview to ensure its content validity. Study 2 evaluated test-retest reliability, internal consistency, and content validity in a sample of 128 undergraduate students with trauma histories. Test-retest reliability was .92 for the Total Severity Score, .84 for Criterion B, .87 for Criterion C, and .90 for Criterion D. Alpha coefficients were .91 for the Total Severity Score, .86 for Criterion B, .82 for Criterion C, and .78 for Criterion D. The CPS-M correlated .87 with the Civilian Mississippi Scale, .79 with the Beck Depression Inventory, .79 with the Beck Anxiety Inventory, and .13 with the Antisocial Behavior Inventory.

CPS-M psychometric properties were evaluated in an additional study of 193 university students (Mason, 2005). Indices of internal consistency reliability (i.e., inter-item correlations, item-scale correlations, coefficient alpha) and temporal stability were computed. The majority of inter-item correlations were significant at the $p < .01$ level. The

following inter-item correlations that did *not* reach significance: B-3 (reliving experience) and C-7 (sense of foreshortened future), C-6 (restricted affect) and D-4 (hypervigilance), and C-7 (foreshortened future) and D-5 (startle response). Corrected item-scale correlations were generally high and ranged from .38 to .84 for PTSD clusters B, C, and D. Alpha was .89 for the Total Severity Score (TSS) and ranged from .73 to .84 for the cluster subscales. By comparison, Blake et al. (1995) reported the following alpha values for the CAPS: TSS = .94; Clusters B-D range = .85 to.87. Thus, the estimates for internal consistency reliability for the CPS-M are comparable to those for the CAPS. CPS-M retest data (M = 14.46 days) obtained from a subsample of 144 participants produced a retest correlation of .91 for the Total Severity Score and ranged from .82 to .88 for the cluster subscales.

Convergent and discriminant validity data were consistent with what one would theoretically expect from a measure of PTSD. The CPS-M Total Score correlated highest (r's = .88 & .84) with total scores from the Purdue PTSD Scale – Revised (PPTSD-R: Lauterbach & Vrana, 1996) and the Revised Civilian Mississippi Scale for PTSD (CIV-MISS: Norris & Perilla, 1996), slightly less (r = .75) with total scores from the Beck Depression Inventory-II (BDI-II: Beck, Steer, Ball, & Ranieri, 1996), and least (r's = .53 & .29) with total scores from the Yale-Brown Obsessive Compulsive Scale (Y-BOCS: Goodman, Price, Rasmussen, Mazure, & et al., 1989) and the Antisocial Behavior Inventory (ASBI: Weathers & Litz, 1994). Thus, preliminary data support the convergent and discriminant validity of the CPS-M.

A principal axis extraction produced a three-factor solution that accounted for 47.60% of the total variance. Factors one, two, and three accounted for 35.98%, 6.84%, and 4.77% of the explained variance, respectively. Structure matrix results, after using an

oblique rotation, showed high multiple correlations for several items. Each factor had between 7 and 11 correlations that exceeded the .45 criterion, many of which were above the criterion on an additional factor. Item C-3 (psychogenic amnesia) did not meet the inclusion criterion for any factor. This item traditionally has a poor relationship with other PTSD symptoms. All remaining items loaded complexly, meaning that they correlated above .30 with multiple factors.

When taken together, the preliminary results suggest that the CPS-M is both reliable and valid, though factor analysis produced a highly intercorrelated three-factor solution, making conceptual distinctions between factors unclear. It is uncertain if this outcome emerged because a nonclinical sample was used. It is, however, consistent with the high alpha coefficients produced by the data set.

Participants rated their level of computer-related anxiety and their perception of the CPS-M (Mason, 2005). Participant responses on the Computer Anxiety Rating Scale (CARS) indicated that most participants did not experience computer-related anxiety. On the CARS, participants rate the level of computer-related anxiety on a seven-point Likert-type scale anchored by 1 (*less anxious*) and 7 (*most anxious*). CARS scores can range from 7 to 35. The CARS mean total score was 13.74 (SD = 5.02), suggesting negligible levels of computer-related anxiety.

Participant responses to the CPS-M, as assessed by the CPS-M evaluation form, were generally favorable. The highest observed means were for "easy to hear" (M = 4.91, SD = .44), "text was easy to read" (M = 4.87, SD = .45), "program easy to use" (M = 4.85, SD = .58), and "screen display well organized" (M = 4.84, SD = .50). The lowest means, or those in most disagreement, were for "preference of human interviewer" (M = 2.13, SD =

1.21), "feeling upset after interview" ($M = 2.47$, $SD = 1.38$) "preference for text only" ($M = 2.49$, $SD = 1.30$), and "preference for female host" ($M = 2.74$, $SD = .99$). Participant responses indicated a high degree of acceptability of the CPS-M format. It is unclear, however, if help-seeking clients, who may be older and more computer anxious, will be similarly positive about a computerized PTSD interview. Given that results were generally positive across the board, the next logical step was to consider confirmatory factor analysis procedures with data collected by CPS-M.

Confirmatory factor analysis is a statistical method used to evaluate and compare an obtained item-level variance/covariance matrix with a hypothesized item-level variance/covariance matrix. It can also be used to directly compare several hypothetical item-level variance/covariance matrices. In other words, confirmatory factor analysis is a technique that allows for the direct comparison of alternative measurement models (i.e., factor structure). Last, the factor structure of newly developed instruments can be compared to results found using well established instruments. Using data collected from the CAPS, King, Leskin, King, and Weathers (1998) tested the fit of four competing measurement models. Models included the following: a single factor first order solution (PTSD only), a two-factor higher order solution, a single-factor higher order solution, and a four-factor first order solution. The four-factor first order model provided the best fit with the data. The four factors were labeled reexperiencing, avoidance, numbing, and arousal. In this model, avoidance (cluster C) was divided into two elements – active avoidance and numbing. The positive findings regarding model fit suggest a conceptual break between the avoidance and numbing items included in PTSD symptom Criteria C. In another study, an exploratory principal-components factor analysis from a national sample suggests that a four-factor

model provided the best fit with data (McWilliams, Cox, & Asmundson, 2005). However, the final model obtained by McWilliams et al. and King et al. differed considerably. Factor 1 was composed of emotional numbing items and two hyperarousal items and was labeled *dysphoria or general distress*. Factor 2 was composed of avoidance symptoms and some reexperiencing items that assessed experiencing in situations reminiscent of trauma. It was labeled *cued reexperiencing and avoidance*. Factor 3 was composed of reexperiencing, hyperarousal, and one numbing item and was labeled *uncued reexperiencing and hyperarousal*. Factor 4 was related to difficulties thinking about the trauma and was called *rumination*. This study was noted to demonstrate variability among the factor analyses in the literature. Because this model was derived using exploratory procedures, it was not tested in this study.

In a more recent study, Palmieri, Weathers, Difede, and King (2007) assessed the factor structure of the CAPS and the PTSD Checklist (PCL) in a large sample of 9-11 Ground Zero workers. Method variance and several proposed measurement models were assessed. Findings suggest a four-factor, oblique model composed of reexperiencing, avoidance, numbing, and hyperarousal factors (King et al., 1998) fit best for the CAPS. A slightly different four-factor solution fit best with the PCL composed of reexperiencing, avoidance, dysphoria, and hyperarousal factors, which is consistent with a model originally proposed by Simms, Watson, & Doebbelling (2002). The primary difference between these models is that a Dysphoria factor was used instead of a Numbing factor. More detail on these findings and their implications for this study are in the Data Analysis section.

Goals

The goals of this study were to investigate the psychometric properties of the CPS-M (i.e., test-retest reliability, internal consistency, convergent and discriminant validity, factor structure) and format acceptability using adult samples reporting trauma. The primary purpose was to address issues of generalizability that could not be assessed by Mason (2005).

To examine convergent and discriminant validity, the revised version of the Purdue PTSD scale, the Beck Depression Inventory-II, the Hospital Anxiety and Depression Scale, the Antisocial Behavior Inventory, and the Yale-Brown Obsessive Compulsive Scale were administered. The CPS-M was expected to correlate highest with the other PTSD measure, less with depression and anxiety measures, and lowest with the OCD and Antisocial measures. Based on previous findings (Richard et al., 1997; Mason, 2005), participants were expected to react favorably to the computerized format. It was unclear, however, if older participants with less computer experience would be similarly positive about a computerized PTSD interview. To assess temporal stability, a sub-sample of participants was readministered the CPS-M approximately two weeks after the first administration. Confirmatory factor analysis was used to test the viability of a number of alternative measurement models previously identified in the empirical literature.

Method

Screening Procedure

Potential participants were recruited from two sites, a VA Medical center and a large HMO based urban outpatient clinic. Participants were solicited by postings in outpatient clinics, clinician referrals, newsletter ads, and direct mailers. In addition, patients in several clinics were given flyers by research assistants. Measures used to screen potential participants were the Life Events Checklist, the PTSD Checklist, self-report items from the Risk of Harm Assessment form, which was created for this study, and direct questions regarding exclusion criteria (e.g., presence of history of thought disorder). Please find the protocol in Appendix A. Criteria for study inclusion will be discussed in the section on inclusion/exclusion criteria. Persons who denied current risk of harm to self or others, denied a history or presence of psychosis, and reported a history of trauma then began the informed consent process. This protocol was based on recommendations from the institutional IRBs.

Screening Instruments

The Risk of Harm Assessment Form. This form consists of two questions used to assess thoughts of harm to self or others in the past week. Endorsed items received a follow-up question for current risk. If subjects reported current risk of harm to self for others, they were not eligible for the study and were connected immediately with clinical care providers for a more thorough assessment of risk and provision of treatment as needed. If participants endorsed thoughts of harm to self or others over the past week, but denied current risk, research assistants asked if they would like to meet with their clinical provider. Incidents were reported immediately to research staff to ensure safety and protocol adherence. Each

assessment form has specific protocol instructions for research assistants and provides contact information for clinical support. See Sample section for relevant data. Please find this form in Appendix B.

The Life Events Checklist (LEC). The LEC (Blake et al., 1990) is a 17-item trauma history checklist developed concurrently with the CAPS by the National Center for PTSD. Participants indicated on the form whether they have been the victim of, witnessed, or learned about a traumatic event. Gray, Litz, Hsu, and Lombardo (2004) examined the LEC using veteran and student populations. In the student sample, kappa statistics were used to assess item agreement over a one-week test-retest interval. Kappa values ranged from .37 for item 16 (caused serious injury/death to another) to .84 for item 8 (sexual assault). The combat-related item was not included because of zero participant endorsement. In the veteran sample, the LEC total score (lower LEC scores indicate higher severity) correlated -.43 with the PTSD Checklist-Military Version, -.33 with the Mississippi Scale for Combat-Related PTSD, -.32 with the Beck Depression Inventory, and -.39 with the CAPS. The LEC is included in Appendix C.

The PTSD Checklist (PCL). The PCL (Weathers, Litz, Herman, Huska, & Keane, 1993) is a 17-item, self-report questionnaire based on the DSM-IV symptom criteria for PTSD. Participants rated symptom severity on a 5-point Likert-type scale. Total scores range from 17 (asymptomatic) to 85. The PCL was compared to the CAPS with data from 40 trauma survivors (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996). Ninety-two percent of participants were female and victims of sexual assault or motor-vehicle accidents. The PCL's internal consistency alpha coefficients were .94 for the Total Severity Score, .93 for PTSD Criterion B, .82 for Criterion C, and .84 for Criterion D. PCL Total Severity Score

correlated .93 with the CAPS Total Severity Score. The PCL was used to screen for PTSD symptoms. The PCL is included in Appendix D.

Inclusion and Exclusion Criteria

Persons over the age of 18 were eligible to participate if they reported a traumatic event on the LEC. Exclusion criteria included the following: incomplete screening form, history or presence of thought disorder, inability to hear or see the computer screen, self-reported current risk of harm to themselves or others, or voluntary decline. Potential participants were prescreened using a brief measure assessing for the presence/absence of hallucinations and delusions (derived from SCID psychosis screening), as well as self report of previous or present psychotic diagnoses. The PCL was used to group participants according to their PCL symptom scores. This procedure was used to increase the variability of obtained scores across measures and reduce the likelihood that a restricted range of scores would deflate correlation coefficients. PCL cutoff scores for the stratified groups were as follows: no/mild symptoms (PCL = 17 to 30), moderate symptoms (PCL = 31 to 43), and severe symptoms (PCL = 44 and up). A cut score of 44 on the PCL for the severe symptoms group is based on Blanchard et al.'s (1996) PCL-CAPS calibration findings in a civilian population. The intent was to fill each of these strata with approximately 65 persons. However, recruitment of persons in the less severe strata proved problematic. The stratification procedure provided some variability in the range of scores, however, not to the extent expected. Please see Appendix E for Inclusion Exclusion Forms.

Sample

The sample consisted of a mix of community and clinical participants from each site. The total sample of 161 represents a combination of 56 participants from the VA and

105 participants from the large urban outpatient clinic. The current sample consisted primarily of participants who screened into the severe group. The distribution was as follows: Mild/No = 14.9% (n = 24), Moderate = 15.2% (n = 25), Severe = 69.9% (n = 112). PCL mean scores were 52.44 (SD = 17.12) and did not differ significantly between the VA and HMO samples. LEC scores indicate that participants across sites reported an average of 9.17 (SD = 5.2) events they either experienced or witnessed. The VA sample (M = 11.91; SD = 5.48) reported a higher frequency of events than the HMO sample (M = 7.17; SD = 3.92), $t(159)$ = 4.73; $p < .001$. The most commonly reported event that participants either experienced or witnessed was "transportation accident" (n = 136), followed by the "any other stressful event" category (n = 128), "physical assault" (n = 119), and "sudden violent death" (n =119). The least frequently endorsed category was "captivity or held hostage" (n = 28). In all, a wide range of events were endorsed. Please see Figure 1 for data on each category. Data from the Risk of Harm Assessment showed that 4.76% of participants reported having thoughts of suicide in the past week, and 7.61% reported having thoughts of hurting others in the past week. All participants denied the follow-up questions of current risk to self or others, which both institutional review boards recommended for study inclusion. Table 1 lists the demographic features from each agency and for the total sample and as independent agencies. The last column reflects contrasts between the two agencies. There were two significant contrasts. The VA sample consisted almost entirely of Caucasians (81%) and males (92%), while the outpatient HMO clinic sample consisted mainly of African Americans (57%) and women (82%). There were no significant differences between groups for the remaining variables. The mean age was 50.12 years across the two agencies. Education levels ranged from grade school to some graduate work,

with high school as the most frequently endorsed category (50%). The majority was not employed at the time of testing (58%) and reported a history of psychological care (90%). Descriptive statistics for the instruments used for convergent and discriminant validity were as follows: Purdue Scale ($M = 35.53$, $SD = 18.72$, $\alpha = .95$), Hospital Anxiety and Depression Scale ($M = 17.07$, $SD = 7.84$, $\alpha = .89$), Beck Depression Inventory-II ($M = 24.88$, $SD = 14.26$, $\alpha = .95$), Yale-Brown Obsessive Compulsive Scale ($M = 14.16$, $SD = 10.53$, $\alpha = .93$), and Antisocial Behavior Inventory ($M = 8.62$, $SD = 5.01$, $\alpha = .79$). Scores from the two samples did not differ significantly on any of the above measures aside from the ASBI. The VA sample reported more antisocial behavior ($M = 11.36$, $SD = 4.75$) than the HMO sample ($M = 7.14$, $SD = 4.5$), $t(159) = 5.51$, $p < .001$). This may be a byproduct of the sex differences between sites. The VA sample was composed primarily of men, and men typically report more antisocial behavior than women (Moffitt, Caspi, Rutter, & Silva, 2001).

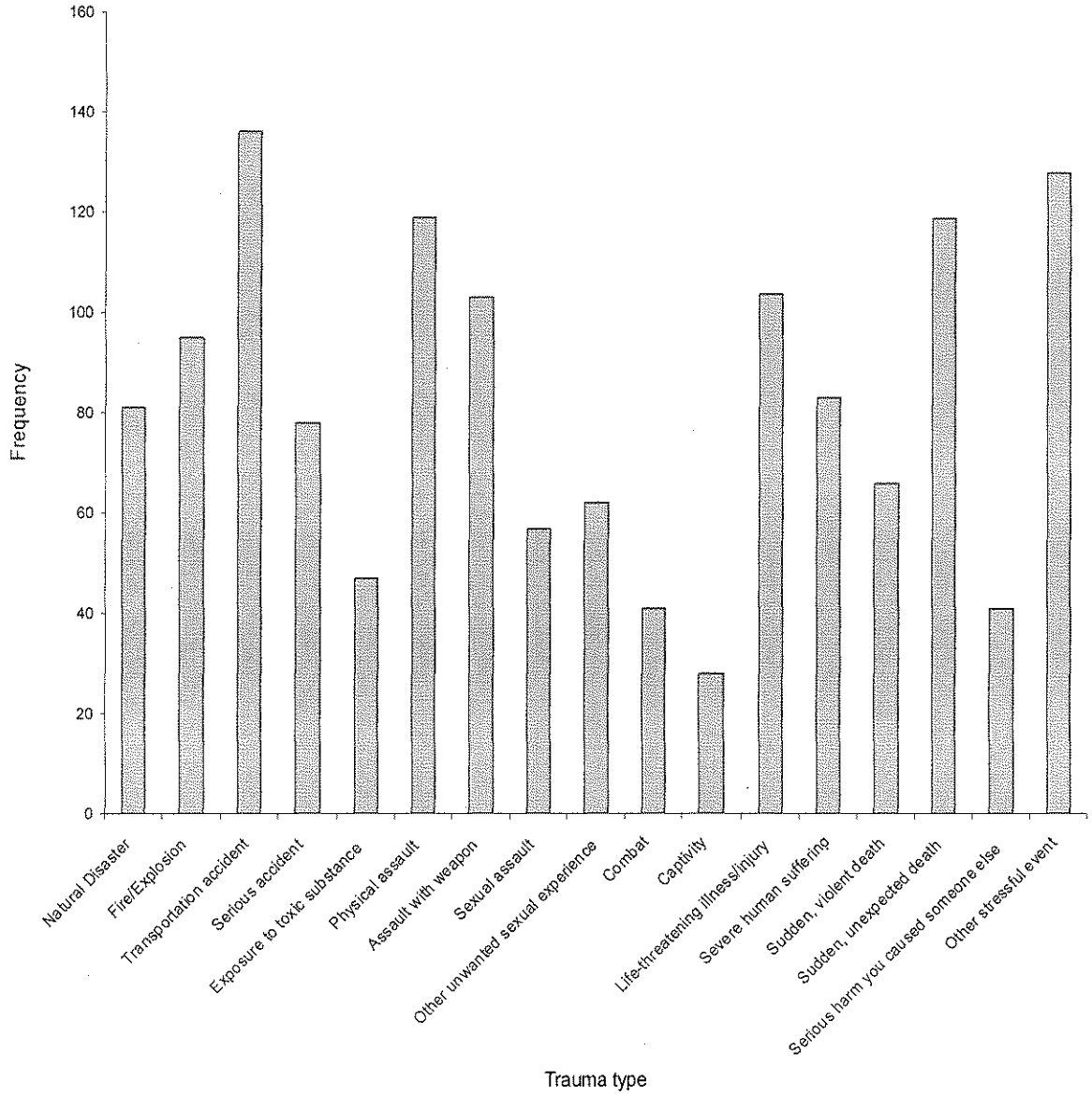

Figure 1. Frequency of potentially traumatic events reported on the Life Events Checklist as "happened to me," "witnessed," or both.

Table 1.

Sample Demographics (N= 161)

Subject	Total Sample	VA Medical Center	HMO	$t/\chi 2$
Age	(*M* =50.12 *SD* = 10.35)	(*M* =53.03 *SD* = 10.08)	(*M* = 48.91 *SD* = 10.38)	t(146)[c] = .85 $p < .39$
Sex	Male (43%)	Male (92%)	Female (82%)	$Z = 8.87$; $p < .001$, M-W = 759
Ethnicity				
Caucasian	(50%)	(81%)	(34%)	$Z = 4.81$, $p < .001$ M-W =1631
African-American	(38%)	(7%)	(57%)	
Hispanic	(3%)	(4%)	(2%)	
Asian	(2%)	(0%)	(3%)	
Other	(5%)	(7%)	(4%)	
Participants working	(42%)	(30%)	(49%)	$Z= 1.9$, $p < .053$ M-W = 2399
Psychiatric History				
Participants reporting history of inpatient or outpatient treatment for emotional or substance use problems.	(90%)	(91%)	(89%)	$Z = 1.7$, $p < .073$ M-W = 2391
Participants currently prescribed medication for psychological or emotional problem.	(71%)	(77%)	(67%)	$Z = 1.2$, $p < .21$ M-W =1324
Level of completed education				
High School	(50%)	(55%)	(47%)	$Z = 1.8$, $p < .06$ M-W = 2375
Some College	(16%)	(16%)	(15%)	

Note: Data are from first test session and apply to all analyses except test-retest correlations. [a]*Z* = *Z* score [b]M-W = Mann-Whitney Test.; [c]Not all participants provided age data.

Sample Size

Originally, a sample size of 210 participants was chosen based on findings from Monte Carlo studies evaluating CFA procedures (Marsh, Hau, Balla, & Grayson, 1998). The current sample size of 161 closely conforms to the traditional rule of thumb of 10 participants per item for CFA (e.g., 17 PTSD items equals 170). More recently, Brown (2006) advised that analysts consider anticipated factor loadings and covariances when computing power. In order to more accurately determine adequate sample size, a Monte Carlo simulation was run in M*plus* 4.21 statistical software. Using a prospective sample size of 150, the following data drawn from previous research were entered individually into the analysis: factor loadings between .31 and .76, item residual variance average of .64, and factor correlations between .74 and .85. The output data met criteria outlined by Muthén and Muthén (2002) for limitations of parameter biases and coverage, which confirmed adequacy of sample size for planned analyses. The subsample of 50 for retest analyses was chosen based on recommendations from Cohen (1992).

Assessment Instruments

Each participant completed a paper-and-pencil questionnaire packet containing the following instruments:

1. *Participant Information Form.* Ten questions assess age, sex, employment, ethnicity, psychiatric history, and other demographic characteristics. This form was employed by Richard (1999) in previous studies with the CPS. The Participant Information Form can be found in Appendix F.

2. *Purdue Scale for PTSD Revised Version* (*PPTSD-R:* Lauterbach & Vrana, 1996). The PPTSD-R is a 17-item inventory that assesses frequency of occurrence of posttraumatic

stress symptoms. Lauterbach and Vrana (1996) examined the reliability and validity of the Purdue Scale in a series of three studies. Study 1 used a sample of 440 university students. Internal consistency coefficients were .91 for the Total Score, .84 for PTSD Criterion B, .79 for Criterion C, and .81 for Criterion D. Study 2 assessed the 2-week test-retest reliability in a sample of 51 undergraduates. The full-scale test-retest correlation was .72. Study 3 used a sample of 35 students receiving psychological services and compared their results to those of nonclinical participants from the previous studies. Persons in the clinical and non-clinical groups did not differ in severity of PTSD symptoms. The clinical sample was then divided into two groups – those who did and those who did not seek treatment for PTSD-related symptoms. Those who reported seeking treatment for PTSD-related symptoms scored higher than the clinical (unrelated) group and the non-clinical groups on the Total and Subscale Scores. The Purdue Scale was used to assess convergent validity in this study and is included in Appendix G.

3. *Beck Depression Inventory-II* (*BDI-II:* Beck et al., 1996). The BDI-II is a 21-item questionnaire that assesses symptoms of depression over the previous week. Items assess somatic and cognitive symptoms of depression (e.g., eating habits, sleeping patterns, self-evaluation, and thoughts of suicide). Participants respond to items using a continuous measure to describe the severity of their symptoms. Responses are made on a 0 to 3 scale, and total scores can range from 0 to 63. Higher scores indicate more severe symptoms. Alpha coefficients of .89 and .91 were found in large university-student samples (Dozois, Dobson, & Ahnberg, 1998; Steer & Clark, 1997). The BDI-II is not included in the appendix, as funds were not available for reproducing items. Also this instrument was used only with the veteran sample because an institution-wide license covered copyright issues.

4. *Antisocial Behavior Inventory* (*ASBI:* Weathers & Litz, 1994). The ASBI is a 32-item, self-report questionnaire measuring antisocial behavior. Participants responded by answering *yes* or *no* to questions that describe antisocial behavior. The first 12 items inquire about behavior before the age of 15, and the remaining 19 items inquire about behavior after the age of 15. The instrument was used by Richard (1999) and Richard et al. (1997) to assess discriminant validity for the CPS and CPS-M, respectively. There are no reported psychometric properties for the ASBI. However, values for coefficient alpha from Mason (2005) and the current study were .78 and .79, respectively. The form can be found in Appendix H.

5. *Yale-Brown Obsessive Compulsive Scale* (*Y-BOCS:* Goodman, Price, Rasmussen, & Mazure, 1989). The Y-BOCS is a 12-item, self-report questionnaire measuring obsessive-compulsive behavior. It was originally designed as a semistructured interview and then adapted to a self-report questionnaire format. Item responses range from 0 (*symptom not present*) to 4 (*severe symptom*). The first five items assess for obsessions, and the remaining seven assess for compulsive behavior. Results from the initial studies of the semistructured interview version that used a sample of 42 OCD outpatients produced an alpha coefficient of .85. There is greater variability in the psychometric properties of the self-report version of the Y-BOCS. Values for internal consistency ranged from .77 to .90 for clinical and college samples, respectively (Steketee, Frost, & Bogart, 1996). Steketee et al. also found that among college students, Y-BOCS scores were stable over a one-week test-retest interval (r = .88). Using a mixed sample of college students and medical outpatients, Warren, Zgourides, and Monto (1993) reported coefficient alphas of .88 for the Obsessive subscale,

.89 for the Compulsive subscale, and .91 for the Total Severity Score. The Y-BOCS can be found in Appendix I.

6. *The Hospital Anxiety and Depression Scale (HADS:* Zigmound & Snaith, 1983). The HADS was designed to assess for anxiety and depression in medically ill populations. It consists of seven items for each domain, where items are rated on a 0-3 scale to indicate symptom severity. In a sample of 341 members of a depression self-help group, alpha coefficients were .84 for the depression subscale and .83 for the anxiety subscale (Dagnan, Chadwick, & Trower, 2000). In a review of the literature, Herrmann (1997) concluded that the HADS provided adequate screening properties while retaining the ability to detect symptoms changes over time. This measure was used only with the HMO sample. Please find this form in Appendix J.

7. *The Computer Anxiety Rating Scale-respecified model* (*CARS*: Miller & Rainer, 1995). The CARS is a 7-item, self-report questionnaire measuring anxiety reactions to computer formats. Scores can range from 7 to 35. Higher scores indicate more anxiety. Scale alpha coefficients of .76 and .74 have been reported by Miller and Rainer (1995) for the high-anxiety and low-anxiety items in a sample of 776 university students and employees. On the basis of factor analysis, Heinssen, Glass, and Knight (1988) selected seven homogenous items from the original version of the CARS to compose the shortened respecified model. The CARS can be found in Appendix K.

8. *CPS-Evaluation Questionnaire.* This 23-item questionnaire assesses participants' reactions to the interface properties of the CPS-M. This form was designed for the initial Richard et al. (1997) investigation of the CPS-M and is included in Appendix L. No psychometric studies have been conducted to examine this questionnaire. However, values

for coefficient alpha from Mason (2005) and the current study were .32 and .54, respectively. This instrument relies on face validity for item characteristic analysis. As such, total score is not computed.

Procedure

After the initial screening to identify persons ineligible to participate, participants completed the consent form (located in Appendix M), then the CPS-M and questionnaire packet, in a counterbalanced order. Odd-numbered participants completed the CPS-M first. A subsample of 57 participants completed a second CPS-M administration 14 days after the first session. Participants were provided a written explanation of the study after completion. This form included a list of counseling resources and emergency numbers should the participant experience an emotional reaction subsequent to participation. In the event participants experienced an emotional reaction, a staff clinician was available (see Risk of Harm Form for procedures). Participants were provided a debriefing form following participation, which is located in Appendix N.

Computer Administration

The CPS-M and all other measures were administered in a quiet location in the clinics. For CPS-M administration, participants used a notebook computer or desktop computer with headphones and a mouse.

Data Analysis

Descriptive statistics for the CPS-M (i.e., *M*, *SD*, and retest correlations) are reported for the Total Severity Scale, cluster subscales, and individual items. Internal consistency reliability (α) is assessed at the scale/subscale level. To assess convergent and discriminant validity, correlations were calculated between CPS-M Total Severity Scores and total scores

computed from the psychopathology measures discussed above.

Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) was used to test the adequacy of fit of four conceptual measurement models of PTSD. The M*plus* software package (version 4.21) was used to conduct all CFA. CFA is an analytical method used to compare a predetermined construct, or model, to a set of item level data (Nunnally & Bernstein, 1994). For example, the adequacy of fit of competing models of PTSD can be directly compared.

The factor structure of PTSD has been a hotly-debated topic in the empirical literature. Prominent issues surround the distinction between the three factor and the four-factor solutions commonly reported in the literature (e.g., King, Leskin, King, & Weathers, 1998). CFA analysis was used to assess the adequacy of fit of four measurement models commonly reported in the literature. Three models were derived from the DSM-IV diagnostic criteria, previous CFA studies of PTSD assessment instruments such as the CAPS, and the Mississippi PTSD Scale (King et al., 1998; Lauterbach, Vrana, King, & King, 1997). These models were chosen because they were tested on samples similar to the current study and they were developed using the same instruments used in the current study. King et al. (1998) examined the CAPS using a veteran sample, and Lauterbach et al. (1997) examined the Civilian version of the Mississippi scale using a university sample. The fourth model tested the adequacy of fit of a recently-identified four-factor dysphoria model. Simms, Watson, and Doebbeling (2002) tested the adequacy of fit of this four-factor dysphoria model, which was confirmed by another major study (Palmiere, Weathers, Difide, & King, 2007).

For this study, the following four models were tested: a single-factor first order

solution (PTSD only), a three-factor first order solution (DSM-IV Criteria), and two first order four-factor solutions (4a and 4b). Model specification can vary depending on goals of the analysis. For each of the models tested, each item was specified to load only on a single factor. Item designations (loadings) for the models tested are shown in Table 2. To establish the unit of measure, for each factor one item was assigned a weight of 1. The M*plus* software package does this by default. Item error variances were not fixed, and error covariances were fixed at zero. Essentially, this means that error variances were assumed to be unrelated. Factor covariances were not fixed.

Model Descriptions

1. Model 1 (Figure 2) is a first order single-factor solution, which examined the unidimensionality of PTSD and may implicate a *general level of distress* characteristic to the syndrome. Commonly reported high inter-item correlations and high inter-factor correlations between PTSD factors support the investigation of this model.

2. Model 2 (Figure 3) is a first order three-factor solution that reflects conceptual divisions of the PTSD diagnostic criteria (reexperiencing, avoidance, & arousal) as outlined in the DSM-IV. Items are specified to load on factors identical to those in the DSM-IV, and factors are specified to covary. The model can be described as fully saturated (i.e., all factors covary with all other factors) measurement model.

3. Model 4a (Figure 4) is a first order four-factor solution, composed of reexperiencing, effortful avoidance, emotional numbing, and hyperarousal (King et al., 1998). Items reflecting the factors reexperiencing and hyperarousal were specified to load on factors identical to those in the DSM-IV. Items reflecting avoidance were divided into two conceptually distinct factors labeled active avoidance and numbing. This too is a fully

saturated measurement model. This first order four-factor model has received substantial support (e.g., King et al., 1998).

4. Model 4b (Figure 5) is a newly substantiated model (i.e., published subsequent to the proposal) and consequently will be described in more detail. Model 4b is a first order four-factor measurement model composed of reexperiencing, effortful avoidance, dysphoria, and hyperarousal first reported by Simms et al. (2002). This four factor solution received support using the PCL (Palmiere et al., 2007) in a study testing two four-factor, first order measurement models[1]. One model was similar to model 4a previously described. The second model was composed of reexperiencing, avoidance, dysphoria, and arousal factors. Items from criterion C (avoidance/numbing) and D (arousal) were combined to create a dysphoria factor. Model 4a was the best-fitting model for the *clinician-administered* CAPS data, whereas model 4b was the best-fitting model for the PCL *self-report* data. This difference in results was partially attributed to the differences in method (i.e., interview [CAPS] versus self-report [PCL]). Since the focal instrument, the CPS-M is essentially a self-report measure; this additional four-factor dysphoria model was added to the analyses.

[1] It should be noted that Palmieri (2007) also tested a number of other measurement models. Only the two four factor models are discussed in this paper.

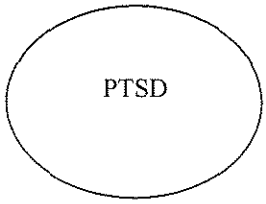

Figure 2. Description of the single factor model (Model 1).

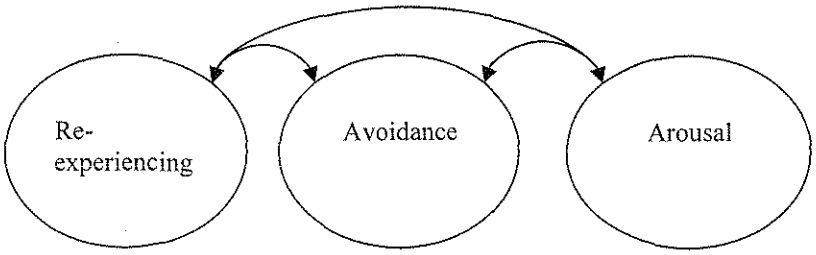

Figure 3. Description of the DSM-IV factor model (Model 2).

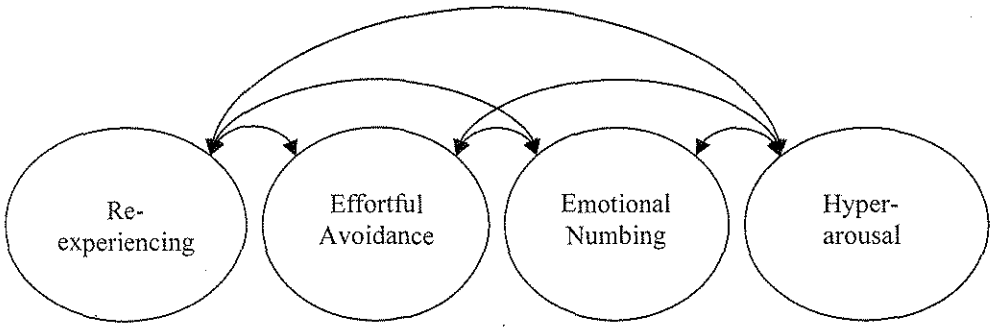

Figure 4. Description of the four-factor numbing model (Model 4a).

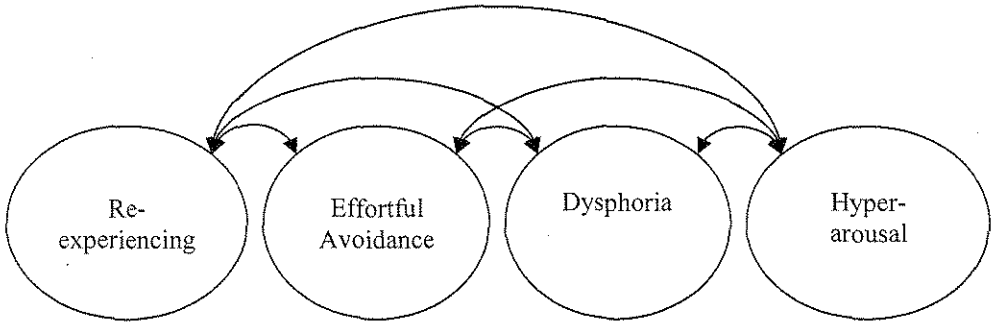

Figure 5. Description of the four-factor dysphoria model (Model 4b).

Table 2.

Item Mapping for Models

DSM-IV PTSD Symptom		Model			
		1	2	3	4
B-1	Intrusive thoughts	P	R	R	R
B-2	Recurrent dreams	P	R	R	R
B-3	Reliving experience	P	R	R	R
B-4	Psychological cues	P	R	R	R
B-5	Physiological cues	P	R	R	R
C-1	Avoid thoughts	P	A	A	A
C-2	Avoid activities	P	A	A	A
C-3	Recall inability	P	A	N	N
C-4	Diminished interests	P	A	N	N
C-5	Detachment	P	A	N	D
C-6	Restricted affect	P	A	N	D
C-7	Foreshortened future	P	A	N	D
D-1	Sleep difficulties	P	H	H	D
D-2	Anger outbursts	P	H	H	D
D-3	Worse concentration	P	H	H	D
D-4	Hyper-vigilance	P	H	H	H
D-5	Startle response	P	H	H	H

Note. Symptom designation per factor: P = General PTSD; R = Reexperiencing; A = Avoidance; N = Numbing; H = Hyperarousal; D = Dysphoria

A number of recommendations for the use of CFA have been outlined (Floyd & Widaman, 1995). These recommendations include the use of interval, normally distributed data, and the use of relatively brief measures (i.e., less than 200 items). The data collected for this study conformed to these recommendations. Floyd and Widaman also noted that models produced from exploratory procedures are not automatically confirmable because items are specified to load on only one factor. For this reason, models selected for this study were drawn from previous CFA analyses and not exploratory findings. Thus, the model obtained by McWilliams et al. (2005) was not tested.

Fit indices were computed to assess the adequacy fit for each model. These indices generally fall into one of three categories, but all are not mutually exclusive (Brown, 2006). Categories of fit indices include (a) absolute fit, (b) model parsimony, and (c) comparative fit.

Indices of Model Fit

Indices of absolute fit are Chi Square (χ^2) and the standardized root mean square residual (SRMR). For the Chi Square index, non-significant values indicate that there is not a significant difference between the implied and obtained variance-covariance matrices suggesting good overall model fit. SRMR is a discrepancy index that produces values between 1 and 0, with lower values indicating better fit.

The model parsimony category includes the root mean square error of approximation (RMSEA; Steiger, 1990). It is widely used for CFA and estimates the degree model fit in the population, relying on noncentral Chi Square distributions.

The comparative fit category includes the comparative fit index (CFI; Bentler, 1990) and the Tucker-Lewis Index (TLI; Tucker & Lewis, 1973). These indices compare the

specified model with null (independence), or baseline, models to determine discrepancy. For each index, values typically range from 0 to1 (the TLI is non-normed), and values closer to 1 suggest better model fit.

Two additional fit indices used to compare models are the Akaike Information Criterion (AIC; Akaike, 1987) and the Bayesian Information Criterion (BIC; Schwarz, 1978). These indices of model fit are based on information theory and employ principles of parsimony. They provide values to compare both nested and non-nested models. Models associated with the lowest output values are deemed to provide a better model fit.

Interpretations of the various fit indices vary considerably. Chi Square analyses produce tabled values, which are considered along with the degrees of freedom in the model. The model with the lowest tabled values and the fewest degrees of freedom (i.e., most parsimonious) is desired. A majority of the additional indices (e.g., TLI & CFI) produce values between 0 and 1, with 0 indicating *no fit* and 1 indicating *perfect fit*. For all of these indices, values that reach or exceed .90 indicate *adequate model fit* but for some indices, values equal to or exceeding .95 are desired. Many of the guidelines proposed to interpret values from each of these indices were compiled by Brown (2006). Table 3 lists the recommended cutoff values for various fit indices.

Unlike many other inferential statistical procedures, CFA does not have a designated significance test. Rather, it tests the adequacy of fit between an implied and obtained variance-covariance matrix. As a result, the multiple indices previously discussed were used to make judgments about model adequacy. A second reason why multiple indices of model fit are used is that each can be affected differently by properties of the data. For example, the Chi square analyses are highly sensitive to sample size (Maruyama, 1998).

There is positive relationship between sample size and the likelihood of obtaining significant results. Hu and Bentler (1999) make note to indicate the importance of adequate values across fit indices.

Table 3.

Recommendations for Indices of CFA Model Fit

Author	SRMR	RMSEA	CFI/TFI
Hu & Bentler (1999)*	~ < .08 = Good	~ < .06 = Good	~ > .95 = Good
Browne & Cudeck (1993)	< .08 = Adequate < .05 = Good	< .05 = Good ≥ 1.0 = Reject	
Bentler (1990)			< .90 = Reject .90 -.95 = Acceptable

* Note: Hu and Bentler indicate that these are approximate values since the obtained values can vary as a function of adequacy of model specification, and final decisions of model fit vary as a function of whether or not an index of model fit is used in combination with other fit indices.

Results

Descriptive and Reliability Statistics

CPS-M item means ranged from 1.98 to 4.81, with the highest values for D-1 (sleep difficulties) and the lowest values for C-3 (recall inability). In order to assess for degree of normality in the data, skew and kurtosis values were calculated for each item. Item level skew data and skew standard error were calculated. Item level values ranged from .11 to 1.13 and item C-3 deviated most from zero. All but six items had *Z* scores lower than 1.96, indicating that the majority of items were normally distributed. Item level kurtosis data values ranged from .14 to 1.4, and item D-5 deviated most from zero. Please see Table 4 for details.

Table 4

Item Means, Standard Deviations, Skew, Standard Error, and Z scores for First Test Session (N=161)

		M	*SD*	*Skew*	*SE*	*Z*
B-1	Intrusive thoughts	3.68	2.30	.11	.19	0.58
B-2	Recurrent Dreams	2.35	2.16	.72	.19	3.79
B-3	Reliving experience	2.29	2.42	.69	.19	3.63
B-4	Psychological cues	2.19	2.37	.50	.19	2.63
B-5	Physiological cues	2.96	2.48	.58	.19	3.05
C-1	Avoid thoughts	2.58	2.49	.17	.19	0.89
C-2	Avoid activities	3.20	2.87	.28	.19	1.47
C-3	Recall inability	1.98	2.50	1.13	.19	5.95
C-4	Diminished interests	3.27	2.83	.19	.19	1.00
C-5	Detachment	4.02	2.93	.23	.19	1.21
C-6	Restricted affect	4.05	2.93	.18	.19	0.95
C-7	Foreshortened future	2.48	2.90	.71	.19	3.74
D-1	Sleep difficulties	4.81	2.87	.59	.19	3.11
D-2	Anger outbursts	4.11	2.41	.21	.19	1.11
D-3	Worse concentration	3.93	2.71	.17	.19	0.89
D-4	Hyper-vigilance	4.35	2.97	.28	.19	1.47
D-5	Startle response	2.91	2.63	.18	.19	0.95

CPS-M scale means ranged from 13.76 to 22.06, with the highest mean for scale C (avoidance) and the lowest mean for scale B (reexperiencing). The mean for Total Score was 55.94. In order to assess for degree of normality in the data, skew and kurtosis values were calculated for each scale and the Total Score (Table 5). Scale level skew data values ranged from .12 to .46, and *Z* score values for scales C and D were below 1.96, or within two standard deviations. Skew for the Total Score was .04 with a *Z* score of .21. Scale level kurtosis data values ranged from .70 to 1.10, and scale C deviated most from zero. Cronbach's alpha for scales B, C, and D and the total score were .89, .87, .75., and .94, respectively.

Table 5.

Scale and Total Severity Score Means, Standard Deviations and Coefficient Alpha for First Test Session (N=161)

	M	*SD*	*Skew*	*SE*	*Z*	*α*
Criterion B (reexperiencing)	13.76	9.83	.46	.19	2.42	.89
Criterion C (avoidance)	22.06	14.71	.18	.19	0.95	.87
Criterion D (arousal)	20.12	10.13	.18	.19	0.95	.80
Total Severity Score	55.94	32.53	.04	.19	0.21	.94

Table 6 lists the inter-item correlations. All inter-item correlations were significant at the $p < .01$ level. The strongest correlation was between items B-1 and B-4 ($r = .74$), and the weakest correlation was between items C1 and C3 ($r = .25$). Traditionally, item C-3 (poor memory) does not correlate well with PTSD.

Table 6.

Inter-item Correlation Matrix for CPS-M Items

	CPS-M Items															
	B1	B2	B3	B4	B5	C1	C2	C3	C4	C5	C6	C7	D1	D2	D3	D4	D5
B1	1																
B2	.64	1															
B3	.60	.56	1														
B4	.72	.54	.57	1													
B5	.69	.51	.66	.74	1												
C1	.45	.39	.35	.50	.37	1											
C2	.57	.49	.61	.60	.58	.55	1										
C3	.35	.41	.31	.37	.58	.25	.36	1									
C4	.56	.53	.47	.62	.60	.42	.56	.36	1								
C5	.61	.48	.49	.61	.59	.43	.62	.33	.77	1							
C6	.60	.49	.49	.57	.58	.37	.58	.31	.68	.76	1						
C7	.48	.48	.54	.53	.46	.36	.53	.30	.57	.58	.66	1					
D1	.47	.44	.32	.46	.42	.36	.39	.24	.52	.59	.64	.49	1				
D2	.58	.47	.47	.60	.60	.46	.50	.31	.51	.62	.58	.45	.49	1			
D3	.61	.51	.45	.56	.56	.37	.49	.46	.46	.55	.56	.47	.54	.49	1		
D4	.55	.56	.53	.56	.52	.36	.56	.32	.41	.53	.49	.49	.31	.38	.48	1	
D5	.46	.53	.53	.46	.46	.45	.52	.28	.46	.43	.45	.50	.34	.47	.58	.55	1

Note: All correlations $p < .01$ (two-tailed)

Corrected item-*scale* correlation coefficients were calculated for each of the three subscales (Table 7). All correlations were significant at the $p < .01$ level. Correlation coefficients within each scale ranged from .76 to .87 for scale B, from .54 to .86 for scale C, and from .72 to .80 for scale D. Corrected Item-*Total* Score correlations ranged from .51 to .82, with item C-3 (poor memory) producing the lowest value and item C-5 (detachment) producing the highest. All correlations were significant at the $p < .01$ level.

Table 7.

Item-Scale and Item-Total Score Correlations

	Correlations	
Item	Item-Scale	Item-Total
B1	.87	.80
B2	.76	.72
B3	.82	..72
B4	.86	.81
B5	.87	.72
C1	.63	.60
C2	.80	.78
C3	.54	.51
C4	.84	.79
C5	.86	.82
C6	.83	.80
C7	.75	.72
D1	.72	.66
D2	.72	.71
D3	.80	.74
D4	.75	.70
D5	.74	.67

Note: All correlations were significant at the $p < .01$ level (two-tailed).

Scale intercorrelations ranged from .78 to .84 (M = .81). Scale-Total Score correlations ranged from .92 to .96. Scale C (avoidance) showed the highest correlation with the Total Score. All correlations were significant at the $p < .01$ level (two-tailed). Please see Table 8.

Table 8.

Correlation Matrix for Scales and Total Score

	Correlations		
Scale	Scale B	Scale C	Scale D
Scale B	1		
Scale C	.78	1	
Scale D	.81	.84	1
Total Score	.92	.96	.94

Note: All correlations were significant at the p < .01 level (two-tailed).

Test-Retest Reliability

A retest session was conducted with a subsample of 57 participants. The mean number of days between test session 1 and session 2 was 17.23 (SD = 6.04). Item-level test-retest correlations ranged from .53 (B-3) to .86 (C-3; D-3). Retest reliability was .83 or higher for all scales. Retest correlations were .83 for scale B, .88 for scale C, .88 for scale D, and .91 for the Total Severity Score. See Table 9 for item level data and Table 10 for scale level data.

Table 9.

Item Means, Standard Deviations, and Retest Correlation Coefficients (N=57)

		Test		Retest		
		M	*SD*	*M*	*SD*	Two Week r_{tt}
B-1	Intrusive thoughts	3.54	2.44	3.67	2.46	.78
B-2	Recurrent Dreams	2.33	2.40	2.45	2.26	.85
B-3	Reliving experience	1.82	2.49	2.09	2.50	.53
B-4	Psychological cues	2.82	2.42	2.85	2.09	.72
B-5	Physiological cues	2.44	2.67	2.53	2.53	.73
C-1	Avoid thoughts	3.65	2.51	3.11	2.71	.67
C-2	Avoid activities	2.84	2.97	2.82	2.78	.62
C-3	Recall inability	2.14	2.60	1.75	2.21	.89
C-4	Diminished interests	3.39	2.93	3.05	2.69	.70
C-5	Detachment	3.82	2.81	3.87	2.93	.80
C-6	Restricted affect	4.11	2.94	4.05	2.82	.86
C-7	Foreshortened future	2.23	2.83	2.18	2.81	.65
D-1	Sleep difficulties	4.88	2.91	4.78	2.71	.78
D-2	Anger outbursts	3.88	2.44	3.78	2.39	.71
D-3	Worse concentration	3.86	2.84	3.65	2.71	.86
D-4	Hyper-vigilance	3.98	2.77	3.96	2.85	.68
D-5	Startle response	2.46	2.51	2.96	2.56	.79

Note. All *r*'s significant at $p < .01$ level

Table 10.

Scale-level Means, Standard Deviations, Alpha, and Correlation Coefficients for CPS-M (N=57)

	Test			Retest			
	M	*SD*	α	*M*	*SD*	α	r_{tt}
Criterion B (reexperiencing)	12.96	10.83	.92	13.60	10.20	.91	.83
Criterion C (avoidance)	21.18	14.44	.86	20.84	13.66	.84	.88
Criterion D (arousal)	19.05	10.03	.82	18.87	10.43	.85	.88
Total Severity Score	53.19	33.66	.95	57.00	31.49	.94	.91

Note. All *r*'s significant at $p < .01$ level; VA $n = 26$; HMO $n = 31$.

Convergent and Discriminant Validity

Support for the validity of the instrument is implied if the magnitude and pattern of correlations is consistent with what one would theoretically expect from a measure of PTSD. The CPS-M Total Score was expected to correlate highest with other measures of PTSD, less highly with measures of depression and anxiety, less with a measure of obsessive-compulsive disorder, and least with a measure of antisocial behavior. Results were consistent with this hypothesis in that the CPS-M correlated .90 with the Purdue PTSD Scale, .85 with the BDI-II, .79 with the HADS, .71 with the Y-BOCS, and .25 with the ASBI.

Computer Anxiety Rating Scale (CARS).

Responses on the CARS indicated that most participants did not experience significant computer-related anxiety. The Likert-type scale used in the CARS had participants rate from 1 (*less anxious*) to 5 (*most anxious*) their degree of computer-related anxiety. CARS scores can range from 7 to 35. The CARS total score mean was 15.04 (SD = 6.35; α = .82), suggesting that aggregate levels of computer-related anxiety were relatively low.

Confirmatory Factor Analysis

Prior to conducting all CFAs, variables were assessed for skew and kurtosis. Distributional properties were within acceptable limits, and maximum likelihood estimation procedures were used to test adequacy of fit of the four measurement models. Results are listed in Table 4. In CFA results listed in Table 11, columns 2 and 3 reflect the absolute fit of each of the models. Significant chi square values reflect a discrepancy between the proposed models and the obtained variance-covariance matrix. However, chi square is highly sensitive to sample size. Values for SRMR and RMSEA reflect adequate overall model fit with slightly better values emerging for the two four-factor models. The AIC and BIC reflect comparison of all models (nested and non-nested), with smaller values reflecting better fit. Model 4b (dysphoria) yielded the lowest values. The CFI and TLI reflect comparisons of each model with a baseline independence model. Higher models reflect better fit with desired values exceeding .9. Each of the three multi-factor models met this criterion with the highest value obtained by Model 4b (dysphoria). Last, delta chi square compares adequacy of fit of nested measurement models. Nested measurement models are hierarchically related to one another in the sense that parameter sets are subsets of one another. For example, particular

parameters are estimated in one model but fixed to zero in another model (See Bollen, 1989). Direct model comparisons indicate that the three factor model performed better than the single factor model and each of the four factor models performed better than the three factor model. The superior fit indices combined with greater parsimony support model 4b.

In summary, of the proposed models, the four factor dysphoria model (model 4b) provided the best fit with the data. Model 4b showed the smallest values for degrees of freedom, Chi Square, SRMR, RMSEA, AIC, and BIC. SRMR and RMSEA values fell in the range of adequate model (e.g., Hu & Bentler, 1999; Browne & Cudeck, 1993) fit. In addition, the CFI and TLI values were the highest among the models and met criteria for adequate fit. Chi Square differences values between all models were significant at the $p < .001$ level. See Table 11 for results.

Table 11.

Fit Statistics for Maximum Likelihood Confirmatory Factor Analysis

Category		Absolute fit		Parsimony	Comparisons – non nested models		Comparison with independence model		
Model	*df*	χ^2	SRMR	RMSEA	AIC	BIC	CFI	TLI	$\Delta\chi^2$
Single factor	119	318.77*	.06	.10	11567.99	11672.75	.88	.87	NA
3-factor DSM model	116	259.15*	.06	.09	11514.37	11628.38	.92	.90	59.62_a*
4a-factor numbing model	113	232.88*	.05	.08	11494.10	11617.35	.93	.92	26.27_b*
4b-factor dysphoria model	**113**	**212.20***	**.05**	**.07**	**11473.41**	**11596.67**	**.94**	**.93**	**46.95_b***

Note: *$p < .001$; [a] $\Delta\chi^2$3 factor model compared with single factor model , [b] $\Delta\chi^2$ for 4a and 4b tested against three factor model with 3 degrees of freedom.

Factor covariance in the four factor model b remained high. Item loadings and factor correlation matrices are also shown below (Figure 6). In model 4b, factor loadings ranged from .70 to .85 for factor 1, from .64 to .87 for factor 2, from .43 to .87 for factor 3, and from .73 to .79 for factor 4. Item loadings are standardized regression weights and meet the criterion of .5 to .6 based on Bagozzi & Yi (1988).

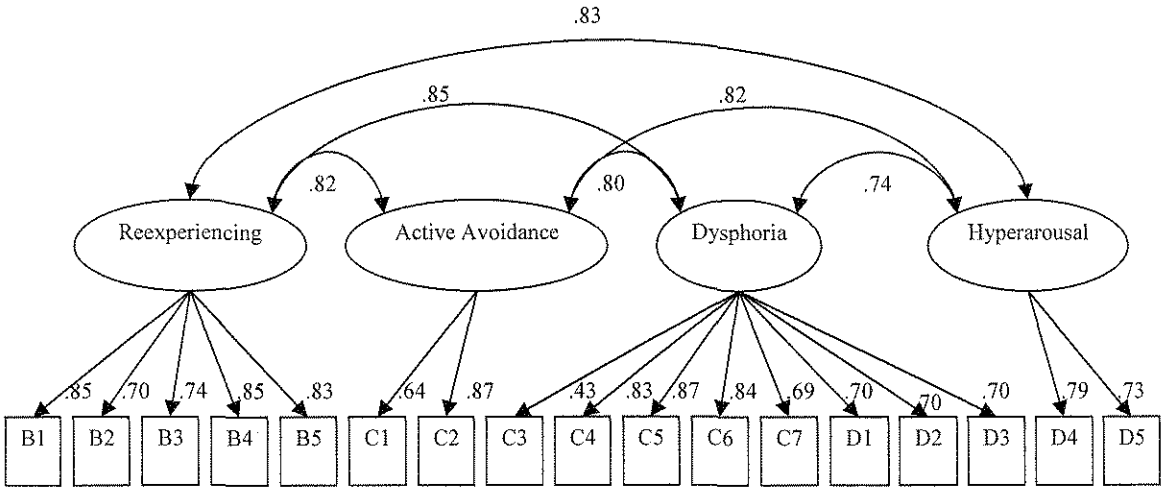

Figure 6. CPS-M Item Loadings and Factor Covariance for the Four Factor Model 4b

Exploratory Factor Analysis

An additional exploratory factor analysis was conducted at the scale level to examine the broader PTSD construct validity. This analysis intended to use more reliable indices of psychopathology (e.g., scales rather than individual items) and measure the degree to which these measures converge with or, more importantly, discriminate from each other. For example, conceptually related scales should load on similar factors, while conceptually unrelated factors should create a separate factor. The following instrument subscales were included in the analyses: PTSD subscales B, C, D from each of the two PTSD measures, YBOCS-Obsessions subscale, YBOCS-Compulsions subscale, ASBI-under the age of 15 subscale, and ASBI-over the age of 15 subscale. The BDI-II and HADS data were omitted because information was available for only half of the sample for each instrument. A principle axis extraction method was used with a Promax, oblique rotation. Results produced a two-factor solution, which cumulatively explained 67.41% of the total variance. Initial eigenvalues for the two factors were 6.17 and 1.37, suggesting the first factor is responsible for a majority of the variance. See Table 12.

Table 12.

Exploratory Factor Analysis: Total Variance Explained

	Initial			Extraction sums of squared loadings			
Factor	Eigenvalues	% of variance	Cumulative	Eigenvalues	% of variance	% of Cumulative	Rotation Total
1	6.17	61.66	61.66	5.92	59.15	59.15	5.88
2	1.37	13.71	75.38	.83	8.26	67.41	2.00
3	.65	6.52	81.90				
4	.57	5.68	87.58				
5	.33	3.32	90.90				
6	.27	2.67	93.58				
7	.24	2.39	95.97				
8	.20	1.95	97.92				
9	.11	1.06	98.99				
10	.10	1.01	100.00				

Factor 1 was composed of all scales aside from the two ASBI scales, which loaded on a second factor. Item loadings (i.e., loadings for each scale on to each factor) for factor 1 ranged from .57 to .92, with highest loadings for PTSD instrument subscales and lower loadings for the YBOCS subscales. The two ASBI loadings on factor 2 were .64 and .65. These results were consistent with the previous data suggesting the ASBI data were conceptually less related to the PTSD measure data. Also consistent with previous results, the YBOCS showed a stronger relationship with the PTSD measures than expected. The correlation between factor 1 and factor 2 was .41. See Table 13.

Table 13.

Exploratory Factor Analysis: Scale-Level Pattern Matrix

Scale	Factor 1	Factor 2
Purdue Scale-B	.91	
Purdue Scale-C	.91	
Purdue Scale-D	.90	
ASBI-U15		.64
ASBI-O15		.65
Y-BOCS-O	.67	
Y-BOCS-C	.57	
CPS-M Scale-B	.95	
CPS-M Scale-C	.88	
CPS-M Scale-D	.91	

CPS-M Evaluation Assessment

Participant responses to the CPS-M were very favorable. The highest observed means were for "program was easy to use" ($M = 4.81$, $SD = .62$), "easy to hear" ($M = 4.77$, $SD = .72$), "screen display well organized" ($M = 4.76$, $SD = .69$), and "text was easy to read" ($M = 4.74$, $SD = .87$). The lowest means, or those in most disagreement, were for "preference for text only" ($M = 2.01$, $SD = 1.31$), "preference for human interviewer" ($M = 2.05$, $SD = 1.15$), "preference for female host" ($M = 2.40$, $SD = 1.14$), and "feeling upset after interview" ($M = 2.92$, $SD = 2.81$). This last item was of particular interest because predicting characteristics of individuals who are likely to become emotionally upset after the interview may be useful when using the CPS-M. However, there were no statistically significant relationships between degree of emotional reaction and site of $t(159) = .27$, $p = .79$, sex $t(159) = .12$, $p = .26$, education $F(9, 151) = .49$, $p = .90$, ethnicity $F(5, 155) = .53$, $p = .74$, or total amount of trauma exposure $t(159) = 1.1$, $p < .01$. However, there were significant differences between groups on the Total Severity Score of the PTSD Checklist $t(159) = 5.1$, $p < .01$. The groups' mean scores for those not endorsing negative feelings as a result of the interview was 46.81 and 60.37 for those who reported negative feelings. These results were also reflected in the differences between these groups on the CPS-M Total Severity Score $t(5.1) = 160$, $p > .01$ In terms of overall format acceptability, participant responses indicated a high degree of acceptability of the CPS-M format, and the findings are consistent with previous work with college students (Mason, 2005). See Table 14 for details.

Table 14.

CPS-M Evaluation Questionnaire Means and Standard Deviations

Items	Mean	*SD*
1. Colors easy to look at	4.66	.75
2. Easy to hear	4.77	.72
3. Questions easy to understand	4.66	.73
4. Screen display well organized	4.76	.63
5. Easy to click on buttons on screen	4.69	.82
6. Text easy to read	4.74	.74
7. Auditory and visual presentation helpful	4.66	.82
8. Liked having questions read	4.50	1.00
9. Mouse easy to use	4.63	.87
10. Keyboard easy to use	3.34	2.20
11. Questions worded clearly	4.55	.90
12. Program easy to use	4.81	.62
13. Relevant questions	4.19	1.04
14. Upset feeling after interview completed	2.92	2.81
15. Preference for text only	2.01	1.31
16. Preference for human interviewer	2.05	1.15
17. Did not feel worse after interview	3.57	1.48
18. Preference for female host	2.40	1.14

Note. Questions 19-22 were not included because questions were not applicable to this study (i.e., concerned video clips). Items were noted on a five-point scale with higher scores showing greater agreement.

Discussion

The purpose of the current study was to assess the reliability and validity of the CPS-M and to test the viability of a set of known PTSD measurement models. Internal consistency coefficients for the CPS-M were similar to those found in previous studies (Mason, 2005; Richard et al., 1997; & Richard, 1999), and ranges generally reported for the CAPS (Weathers et al., 2001). Table 15 lists the values for coefficient alpha for previous studies using the CPS-M, the CPS, and an early study using the CAPS. The CPS produced higher alpha coefficients in general, particularly for criterion D. Study 1 using the CPS with the inpatient veteran sample was notably higher than those found in the other studies. This may be a product of inpatient veteran characteristics. In general, when comparing CPS-M coefficient alpha values against value ranges reported in the CAPS literature, the CPS-M fares adequately (Weathers et al., 2001). Across studies, alpha coefficients were higher than the customary .70 cutoff, signaling high item interrelatedness.

Table 15.

Coefficient Alpha Values for CPS-M and CPS Studies, and Range Values for the CAPS

Study	Scale B α	Scale C α	Scale D α	Total Score α
Current (CPS-M)	.89	.87	.80	.94
Mason (2005) (CPS-M)	.84	.79	.70	.89
Richard et al., (1997) (CPS-M)	.86	.82	.78	.92
Richard (1999) Study 1 (CPS); Veterans	.88	.93	.93	.96
Richard (1999) Study 2 (CPS); Students	.88	.81	.82	.91
Richard (1999) Study 3 (CPS); Veterans	.95	.91	.89	.96
Weathers et al. (2001) (CAPS)	.63-.84	.78-.87	.79-.88	.85-.95

Two-week retest correlations were satisfactory and comparable to previous studies. In the present study, retest correlations were virtually indistinguishable compared to those found in Mason (2005), Richard et al. (1997), and Richard (1999) Study 1 and 2. However, all studies report relatively high retest correlations, which suggests adequate temporal stability in the short term. See Table 16.

Table 16.

Retest Values for CPS and CPS-M Studies

Study	Scale B	Scale C	Scale D	Total Score
Current	.83	.88	.88	.91
Mason (2005)	.87	.88	.82	.91
Richard et al., (1997)	.84	.87	.90	.92
Richard (1999) Study 1 (CPS); Veterans	.88	.87	.92	.92
Richard (1999) Study 2 (CPS); Students	.79	.82	.82	.87

CPS-M validity coefficients were similar across CPS-M the CPS, and the CAPS studies (Table 17). Four of the same instruments used in Mason (2005) were used to assess convergent and discriminant validity, the Purdue PTSD Scale, the BDI-II, the YBOCS, and the ASBI. The same pattern emerged across studies. For both the CPS-M and its predecessor, the CPS, total scores were most strongly related to other measures of PTSD followed by depression, anxiety, obsessive compulsive symptoms, and antisocial behaviors. Thus, the pattern of relationships held across instrument and population (college students, combat veterans, mixed community sample of civilian and combat trauma victims). The same pattern of correlations has been found in the CAPS literature (Weathers et al., 2001). The CAPS typically correlated most strongly with other PTSD measures (*r*s = .70 to .89), followed by depression (*r*s = .61 to .75) and anxiety (*r*s = .66 to .76). Thus, relatively high correlations between the CPS-M and measures of depression and anxiety were to be expected. The CAPS has shown negligible correlations with the ASBI. Validity indicators and patterns of instrument relationships suggested a fair degree of construct validity for the CPS-M.

Furthermore, these data, collected through the use of the multimedia and text-only versions of the CPS, suggest some consistency of the measured PTSD construct across clinical and nonclinical samples.

Somewhat unexpectedly, YBOCS scores showed relatively high correlations with the CPS-M scores. This may be a product of increased presence of OCD symptoms in this sample, using a clinical sample with a relatively high degree of psychological symptom severity, or lack of adequate participant interpretation of YBOCS items. However, the strong PTSD-OCD link is not a totally unique finding. The epidemiologic catchment area survey (Helzer, Robins, & McEvoy, 1987) found that PTSD was most likely to co-occur with OCD. The PTSD-OCD comorbidity was higher than a broad array of other disorders (i.e., dysthymic disorder, manic-depressive disorder, panic disorder, antisocial personality, phobias, drug abuse/dependence, and alcoholism.

The pattern of correlations between validity measures and the CPS-M raises broader questions regarding the nature of PTSD. The relationship shown between measures of PTSD and measures of depression is interesting, particularly when considering PTSD is categorized as an anxiety disorder. What is more, is that the CPS-M, CPS, and CAPS all show higher correlations with depression measures compared to anxiety measures. This observation is commensurate with CFA results in this study, in that the best fitting model included the dysphoria factor. The nature of these relationships and their implications for understanding PTSD remain unknown and are worthy of further study.

Table 17.

Convergent and Discriminant Validity Correlation Coefficients for CPS and CPS-M Studies, and Ranges for CAPS Studies

	PTSD		Depression and Anxiety			OCD	Anti-social
Study	Purdue	MISS[1]	BDI-II	HADS	BAI[2]	YBOCS	ASBI
Current (CPS-M)	.90		.85	.79		.71	.25
Mason (2005) (CPS-M)	.88	.84	.75			.53	.29
Richard et al., (1997) (CPS-M)		.87	.79		.79		.13
Richard (1999) Study 2 (CPS); Students		.84	.69		.59		.21
Richard (1999) Study 3 (CPS); Veterans		.87	.74		.74		.32
Weathers et al. (2001) (CAPS)	----.70-.89----		--------.61-.76-------				.14-.33

Note: [1]the Civilian Mississippi Scale for PTSD (Norris & Perilli, 1996) was used in the Mason (2005) study and the Mississippi Scale for Combat-Related PTSD was used in the studies of combat veterans; [2]Beck Anxiety Inventory

Confirmatory factor analysis results showed CPS-M data to fit best with a first order four factor model found in the PTSD literature. This model, referred to as 4b or the dysphoria model, identified factor 1(reexperiencing) as items B1-B5, factor 2 (avoidance) as items C1-C2, factor 3 (dysphoria) as items C3-D3, and factor 4 (arousal) as items D4-D5.

Findings in support of model 4b (dysphoria) were consistent with Simms et al. (2002) and Palmieri (2007). Simms et al. first tested and found support for the dysphoria model

using CFA procedures, but they used an unstandardized format (i.e., telephone interview). Palmieri confirmed the validity of this model by using the well established PCL in a standardized format with a large sample size. The notion of a general distress characteristic component to PTSD is not new and is consistent with content of dysphoria symptoms. In the larger context, overlap between anxiety and depressive symptoms has been well established and suggests most disorders are related on a basic level with some distinguishing features (Brown, Chorpita, & Barlow, 1998). For example, avoidance, numbing or dysphoria, and physiological arousal have demonstrated relationships to mood and anxiety disorders (Brown et al., 1998; Joiner, Steer, Beck, Schmidt, Rudd, & Catanzaro, 1999). However, unique to PTSD are reexperiencing symptoms, which form a stable factor in the present study. Based on results and conceptualizations from the literature, findings from the current study supporting the dysphoria model appear adequate to support construct validity of the CPS-M. In terms of negative findings, the CPS-M factor structure results were *not* wholly supportive of the DSM-IV, three-factor structure model, which is also consistent with the PTSD literature.

These results may have implications for reconceptualizing PTSD. One potential option is to consider the dysphoria factor as a general distress component and to incorporate more items to tap into the remaining factors. Additionally, among all of the theoretical models that have been proposed for PTSD, none explicitly include a rationale, explanation, or mechanism for the presence of depression. Although factor structure results typically have implications for models of PTSD, the topic is beyond the scope of this paper, as this was a psychometric evaluation of the CPS-M.

The relative superiority of the dysphoria model may well have important implications

for treatment planning. It may be useful to match the theoretical domains of of the disorder with the treatment goals. The most substantiated treatments for PTSD necessarily include some form of exposure to the feared stimulus. This approach is consistent with previous theorizations, that PTSD is best characterized by an oscillation between reexperiencing symptoms, which leads to increased arousal, and subsequent active avoidance of those stimuli. Repeated exposure to feared trauma-relevant stimuli ultimately results in habituation of learned fear reactions and reduced avoidance. However, such treatments do not address depressive symptomatology. If the dysphoria model is more consistent with *true* PTSD, perhaps treatment plans should include treatment components that are expressly designed to treat symptoms of depression.

Several features of the sample and instrument may have influenced the findings from the confirmatory factor analysis. The sample included a relatively high percentage of participants taking psychotropic medications. These medications may have served to blunt arousal symptoms. In the alternative, it is possible that the high use of psychotrophic medications reflects symptoms of dysphoria. When comparing the two four-factor models, a major conceptual distinction occurs in the Cluster D arousal items. In the 4a King model, all five Cluster D items load on the arousal factor, which may suggest more intense, active symptoms in that domain. Alternatively, in the 4b Simms model, three of the Cluster D arousal items load onto the dysphoria factor. If it's true that this sample is more depressed than other samples and arousal symptoms are blunted by medications, this might result in a slight bias toward the four-factor dysphoria model over the competing four-factor model.

One feature of this (and other) measures of PTSD may place limits on the degree of confidence in the superiority of the obtained four-factor dysphoria model. In the current

study and others that have examined the various four-factor models, only two indicators are used to assess some of the factors (e.g., active avoidance is denoted by PTSD symptoms C-1 and C-2). However, Bentler (1990) recommends that a minimum of three indicators be attributed to each factor and that they be theory-driven. There currently is no theory to substantiate a dysphoria factor structure. In addition, there is no certainty that PTSD is being comprehensively assessed by the current 17-item criteria. One potential solution to this issue is to expand the number of items for each of the conceptual domains and concurrently search for additional symptoms that have theoretical relationships.

Turning to a comparison of instruments, there are a number of subtle differences between the CPS-M and its parent instrument, the CAPS, which should be considered when interpreting the results of this study. In terms of the actual administration, the CPS-M and the CAPS differ in a couple of ways. First, the CPS-M assesses symptom presence for all 17 symptoms, and then frequency and intensity questions are asked together later in the assessment. In contrast to the CPS-M, the CAPS assess frequency and intensity in concert with symptom presence for each item. This sequencing of items and use of sound files may elicit the repetitive quality mentioned earlier and therefore influence participants to respond similarly or identically to different items. Thus, the item format may artificially elevate the level of inter-item agreement. Another contrast between the CPS-M and the CAPS concerns the role of clinical judgment in arriving at a diagnosis. Unlike the CAPS, the CPS-M does not offer an opportunity for the assessment administrator to assess participant compliance with the interview, mental status, or of evidence of exaggeration or minimization of symptoms. If the test administrator makes a non-zero contribution to the accurate prediction of PTSD status, it is possible that the CAPS may arrive at more accurate diagnoses. However, this

same issue is true of any non-interview PTSD assessments. Future adaptations of the CPS-M may be able to lessen the gap.

With regard to the effect of using computerized methods for assessment, one of the initial concerns was that older participants who may be less familiar with computers than their college-age counterparts would report higher levels of discomfort with the computer interface. Results from the CARS suggest that participants, though older and presumably less familiar with computers than college students, did not experience significant computer-related anxiety. Scores were slightly higher in the current sample ($M = 15.41$ for current study, $M = 13.74$ for student sample) but remained near or at the middle rating for the total score and at each of the item levels.

In evaluation of the CPS-M, participants rated the format quite highly. Eleven of the thirteen item means indicating participant reactions fell into the *strongly agree* category, suggesting positive reactions. Of the reverse scored items, two fell in the *strongly disagree* category. The first assessed for preference of a human interviewer and the second assessed for preference of omitting the sound files. Overall, format acceptability was optimistic when considering use of the CPS-M for future studies.

One issue inherent to PTSD assessment is the potential for negative emotional reactions requiring the need for available clinical support. According to research assistant reports, a small portion of participants demonstrated some degree of emotional distress when taking the CPS-M, and a number chose to discuss their feelings in more detail after the formal assessment. Data detailing observed emotional reactions were not collected. However, three participants asked to contact their primary clinician and were immediately connected with clinical staff. The vast majority of participants did not express emotional distress or

negative reactions to the assessment. More explicitly, the CPS-M Evaluation Form asks participants to indicate if the interview caused them to "feel things that are now upsetting," and 15% rated *agree* while 26% rated *strongly agree.* These individuals could be statistically distinguished from those who did not experience upsetting emotions by their PTSD Checklist Total Severity Score, which was part of the screening process. Those with high means, around 60, were more likely to have a negative emotional reaction than their counterparts, who had means around 45. No other demographic or trauma variables were predictive of this reaction. Overall, these findings suggest that individuals with higher symptoms at screening are more likely to experience negative affect as a result of the assessment. Last and consequently, the CPS-M should be used responsibly in a clinical setting where staff support are immediately available should individuals react negatively. Of note, arousal of negative affect is a common and necessary component of PTSD assessment.

Additionally, this format may not facilitate dialogue between assessor and participant as would a semi-structured interview. Participants may be less inclined to request clarity on confusing items, and, consequently, assessors may not be able to provide assistance. However, these features are true of all self-report formats. Alternatively, the CPS-M may contribute uniquely to one additional issue. By digitally simulating an interview with graphics and sound files, participants may have different expectations when compared to paper-and-pencil formats. The expectation of support, elaboration, and discussion that comes with an interview may be elicited by the multimedia format. This was evidenced by a number of participants wishing to engage in discussion after the interview. Again, this supports the use of the CPS-M in a supervised clinical setting and continued investigation of the instrument characteristics.

Strengths of this study include the generalizability of the sample demonstrated by the following: (a) mixture of samples (veterans, treatment-seeking, and community samples), (b) the relative evenness of distribution of sex (~50%), (c) range of age groups from early adult to elderly, (d) the range of traumatic experiences in that every category on the LEC was endorsed at least once, (e) range of frequency for traumatic events from 1 to 30, (f) the high frequency of participants in the severe category (69.9%), (g) the high endorsement of history of psychological care (90%), and (h) the high endorsement for current use of psychotropics (71%). Altogether, these sample characteristics appear consistent with a diverse, trauma-exposed, clinical sample.

The samples drawn from the two referring agencies were compared on a number of demographics variables, CPS-M item, scale, and Total Scores, and few differences emerged. The HMO sample was composed of more African American women, while the VA sample was composed of more Caucasian men. The groups also differed on the Life Events Checklist used to screen participants for trauma exposure. The VA sample experienced or witnessed more events than the HMO sample. However, means were generally high for the number of events (*M*'s =11.19 and 7.17), especially when compared to a large student sample with a mean of 2.4 events (Mason, Lauterbach, Pasola, McCourt, & Dotson, 2006). The VA sample also scored higher than the HMO sample on the antisocial behavior measure. This may be a product of the gender composition of the two samples. Males typically report higher rates of anti-social behavior and exposure to traumatic events, and the VA sample was composed primarily of men. However, these factors did not appear to largely influence differences in CPS-M item, scale, or Total Score ratings.

A potential limitation of this study is sample size. Decrements in sample size can have the effects of diminishing statistical power and precision of parameter estimates and standard errors. As such, small samples can result in improper solutions. Brown (2006) correctly noted that the literature has been scant on appropriate sample size for CFA. Consequently, numerous rules of thumb and poorly generalizable recommendations have been used. Of the best methods to determine sample size (e.g., Satorra-Saris Method, OLS, and Monte Carlo Simulation), Monte Carlo Simulation, which is an available function in M*plus* statistical software, is the most advantageous. It allows the most accuracy for estimating each of the model parameters. Model estimates obtained from previous research (e.g., Palmieri et al., 2007) and results from this study were used to estimate parameters for the Monte Carlo Simulation. For both sets of parameter estimates, a sample size of one hundred was adequate. Increasing the prospective sample size to 200 added no appreciable increments in power. It was determined that the current sample size had adequate statistical power to appropriately reject a false null hypothesis. It is a meaningful criticism to suggest that factor structure results from this study are due to an idiosyncratic characteristic of this study. This may, in fact, be the case. However, the best fitting model (dysphoria) has received support from studies employing sample sizes of over three thousand (e.g., Palmieri et al., 2007), suggesting results from this study are consistent with results from state-of-the-art investigations. When using data that show substantial reliability and validity and when testing established models, factor structure studies with relatively small sample sizes (103 to 142) have been published for meaningful interpretation (e.g., Cordova, 2000; Marshall, 2004; Smith, 1999; Taylor, 1998). In sum, a larger sample may strengthen the results from this

study. However, for the reasons mentioned above, these data appear meaningful for interpretation.

While the combined sample size was sufficient to address study questions, larger samples at each site would have allowed for the examination of a variety of important questions. For example, it would be possible to examine the factorial and metric invariance across populations. This is clearly the wave of the future and investigators are increasingly questioning the appropriateness of using instruments with different populations and the meaning/interpretation of findings. The primary recommendation for evaluating the CPS-M is to obtain sample sizes for individual samples or recruitment sites to further validate the utility of the CPS-M. This will address two issues. First, participants would be equivalently sampled for each severity group, which may enhance variability and consequently CFA analyses. This may also add clarity to the interpretation of results, allow for further generalizability, and provide more adequate comparison of samples. Another recommendation is to compare the CPS-M to the CAPS interview using equivalency analysis. Diagnostic utility of the CPS-M can be gleaned from such results.

Two aspects of this study were of primary concern. First, this instrument was evaluated to determine whether its psychometric properties suggest that it is suitable for assessing PTSD. Second, the CPS-M was developed specifically to utilize a multimedia format and assess participants' beliefs regarding the acceptability of this assessment medium. With regard to the instrument's psychometrics, the CPS-M demonstrated satisfactory properties, as is suggested by the data obtained from the reliability and validity analyses. In terms of the acceptability of the CPS-M, participants rated the ease of use, organization, and screen presentation quite high. Participants also indicated that they were more agreeable to

the multimedia format than to a human interviewer. Although these initial results do not speak to the equivalence of the CPS-M as a diagnostic measure of PTSD, the current results support use and further investigation of the CPS-M as a viable measure of PTSD.

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APPENDICES

Appendix A

Study Procedure

I. Upon entrance to the clinic
   a. Power up the laptop computer (s)
   b. Prepare the paperwork for informed consent, screening, and instrument packets.
   c. Make sure that signs are posted in the waiting room across the hall.
   d. Make sure that you have adequate gift cards

II. Next, a participant volunteers for screening
   a. Screening Items
      i. Explain to the participant that this study is to develop and computerized assessment instrument to assess PTSD.
      ii. State that screening has a few steps that include answering some questions and completing two paper forms
      iii. First, conduct the Risk Assessment of Harm Form
      iv. Second, provide them with the LEC and the PCL
      v. Assess their eligibility for the study using the I/E Form
      vi. If yes, proceed to consent; If no, follow relevant procedures (e.g., politely thank them if there is no risk, or follow procedures on Risk of Harm Form).
   b. Sit with the participant and conduct the Informed Consent process.
   c. If they agree to participate, proceed to the study and remove the packet from the prepared folder (make sure the folder has a Research ID number)

III. The participant begins the study
   a. The computerized assessment and the paper-and-pencil measures will be given in counterbalanced order.
      i. If the participant has an ODD Research ID number, they will start on the **computerized assessment** and complete the paper instruments second.
      ii. If the participant has an EVEN Research ID Number, start them with the paper and pencil measures
      iii. Give them the CPS-M Evaluation form until they complete the CPS-M.
   b. The study section is now complete and the participant will be provided compensation
      i. Ask the participant to sign the Payment Record Form with their names and social security numbers
   c. Ask the participant to make an appointment to return in two weeks for the retest session (only if needed).
   d. Provide the participant with any necessary forms (e.g., copy of informed consent, etc.)

IV. After the participant has left conduct closing procedures for the day, including research notes entered for each consented participants.

Appendix B.1

Risk of Harm Assessment (VA)

(Completed ONLY Face to Face with the Veteran in Outpatient Psychiatry)

1. "**In the past week have you had thoughts about harming yourself?"** Yes No
If **Yes**, continue with question 2.
If **No,** Skip to #3

2. "**Are you going to harm yourself today**?" Yes No
If **Yes**: The veteran is **NOT** eligible for the study and should be connected immediately with a triage clinician in the psychiatry walk-in clinic for follow-up of suicidal risk in accordance with standard clinical care when imminent risk is reported. The research assistant should remain with the patient until connected with the follow-up clinician.

If **No**: The veteran is eligible for the study.
If the veteran is currently under psychiatric care, request whether the veteran would like to speak with his provider and arrange for a contact with the provider. If the provider is not available, connect the veteran with the psychiatry walk-in clinic. In either case, the research assistant should remain with the patient until connected with the follow-up clinician.

If the veteran is not currently under psychiatric care at the VA, connect him/her with the psychiatry walk-in clinic. The research assistant should remain with the patient until connected with the follow-up clinician.

3. "**In the past week have you had thoughts about harming others?"** Yes No
If **Yes**, continue with question 4.
If **No**, veteran is eligible and the next screening measure can be completed.

4. "**Are you going to harm others today**?" Yes No
If **Yes**: The veteran is **NOT** eligible for the study and should be connected immediately with a triage clinician in the psychiatry walk-in clinic for follow-up of risk to harm others in accordance with standard clinical care when imminent risk is reported. The research assistant should remain with the patient until connected with the follow-up clinician.

If **No**: The veteran is eligible for the study.
If the veteran is currently under psychiatric care, request whether the veteran would like to speak with his provider today and arrange for a contact with the provider. If the provider is not available for an appointment, connect the veteran with the psychiatry walk-in clinic. In either case, the research assistant should remain with the patient until connected with the follow-up clinician.

If the veteran is not currently under psychiatric care at the VA, connect him/her with the psychiatry walk-in clinic. The research assistant should remain with the patient until connected with the follow-up clinician.

IF at anytime additional assistance in working with the patient is needed for any reason (e.g. suicidal or homicidal patient refusing to go with RA to MHC), Dr. Rauch will be contacted immediately (734-651-9379 or UMHS pager 2417) by the RA.

Appendix B.2

Risk of Harm Assessment (HFHS)

(Completed ONLY Face to Face with the patient in Outpatient Psychiatry)

Assessment administered BEFORE entrance into the study.

1. "**In the past week have you had thoughts about harming yourself?"** **Yes** **No**
If **Yes**, continue with question 2.
If **No,** Skip to #3

2. "**Are you going to harm yourself today**?" **Yes** **No**
If **Yes**: The patient is **NOT** eligible for the study and should be connected immediately with their regular provider or a triage clinician in psychiatry for follow-up of suicidal risk in accordance with standard clinical care when imminent risk is reported. The research assistant should remain with the patient until connected with the follow-up clinician.

If **No**: The patient is eligible for the study.
If the patient is currently under psychiatric care, request whether the patient would like to speak with his provider and arrange for a contact with the provider. Also, notify the PI, Shawn Mason the same day (page 146-5692).

3. "**In the past week have you had thoughts about harming others?"** **Yes** **No**
If **Yes**, continue with question 4.
If **No**, patient is eligible and the next screening measure can be completed.

4. "**Are you going to harm others today**?" **Yes** **No**
If **Yes**: The patient is **NOT** eligible for the study and should be connected immediately with a triage clinician in the psychiatry walk-in clinic for follow-up of risk to harm others in accordance with standard clinical care when imminent risk is reported. The research assistant should remain with the patient until connected with the follow-up clinician.

If **No**: The patient is eligible for the study.
If the patient is currently under psychiatric care, request whether the patient would like to speak with his provider and arrange for a contact with the provider. Also, notify the PI, Shawn Mason the same day (page 146-5692).

IF at anytime additional assistance in working with the patient is needed for any reason (e.g. suicidal or homicidal patient refusing assessment), Dr. Lanzisera will be contacted immediately 313-874-6639, pager: 146-3539, or cell at 248-761-6921 by the RA.

Appendix C

Life Events Checklist (LEC)

Listed below are a number of difficult or stressful things that sometimes happen to people. For each event check one or more of the boxes to the right to indicate that: (a) it happened to you personally, (b) you witnessed it happen to someone else, (c) you learned about it happening to someone close to you, (d) you're not sure if it fits, or (e) it doesn't apply to you. Be sure to consider your entire life (growing up as well as adulthood) as you go through the list of events.

Event	Happened to me	Witnessed it	Learned about it	Not Sure	Doesn't apply
1. Natural disaster (for example, flood, hurricane, tornado, earthquake)					
2. Fire or explosion					
3. Transportation accident (for example, car accident, boat accident, train wreck, plane crash)					
4. Serious accident at work, home, or during recreational activity					
5. Exposure to toxic substance (for example, dangerous chemicals, radiation)					
6. Physical assault (for example, being attacked, hit, slapped, kicked, beaten up)					
7. Assault with at weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb)					
8. Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)					
9. Other unwanted or uncomfortable sexual experience					
10. Combat or exposure to a war-zone (in the military or as a civilian)					
11. Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)					
12. Life-threatening illness or injury					
13. Severe human suffering					
14. Sudden, violent death (for example, homicide, suicide)					
15. Sudden, unexpected death of someone close to you					
16. Serious injury, harm, or death you caused to someone else					
17. Any other very stressful event or experience					

Appendix D

PTSD Checklist (PCL)

Instructions: Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

The event you experienced was _____ on _____.
(event) (date)

	Not at all	A little bit	Moder-ately	Quite a bit	Extremely
1. Repeated, disturbing memories, thoughts, or images of the stressful experience?	1	2	3	4	5
2. Repeated, disturbing dreams of the stressful experience?	1	2	3	4	5
3. Suddenly acting or feeling as if the stressful experience were happening again (as if you were reliving it)?	1	2	3	4	5
4. Feeling very upset when something reminded you of the stressful experience?	1	2	3	4	5
5. Having physical reactions (e.g., heart pounding, trouble breathing, sweating) when something reminded you of the stressful experience?	1	2	3	4	5
6. Avoiding thinking about or talking about the stressful experience or having feelings related to it?	1	2	3	4	5
7. Avoiding activities or situations because they reminded you of the stressful experience?	1	2	3	4	5
8. Trouble remembering important parts of the stressful experience?	1	2	3	4	5
9. Loss of interest in activities that you used to enjoy?	1	2	3	4	5
10. Feeling distant or cut off from other people?	1	2	3	4	5
11. Feeling emotionally numb or unable to have loving feelings for those close to you?	1	2	3	4	5
12. Feeling as if your future somehow will be cut short?	1	2	3	4	5
13. Trouble falling or staying asleep?	1	2	3	4	5
14. Feeling irritable or having angry outbursts?	1	2	3	4	5
15. Having difficulty concentrating?	1	2	3	4	5
16. Being "superalert" or watchful or on guard?	1	2	3	4	5
17. Feeling jumpy or easily startled?	1	2	3	4	5

Appendix E.1

Inclusion/Exclusion Form (VA)

1. English is appropriate	Yes	No
2. Vision/hearing is appropriate	Yes	No
3. Able to read forms	Yes	No
4. Adult age	Yes	No
5. Denies imminent risk of harm to self/others	Yes	No
6. Denies history/presence of thought disorder	Yes	No
7. Fits into a group based on PCL score	Yes	No

AND

8. Reports a trauma on LEC	Yes	No

OR

9. Was referred to VA for PTSD Evaluation	Yes	No

For inclusion into the study, answers to all items above must be YES (only #8 or #9).

Proceed to Informed Consent

Appendix E.2

Inclusion/Exclusion Form (HFHS)

1. English is appropriate	Yes	No
2. Vision/hearing is appropriate	Yes	No
3. Able to read forms	Yes	No
4. Adult age	Yes	No
5. Denies imminent risk of harm to self/others	Yes	No
6. Denies history/presence of thought disorder	Yes	No
7. Reports a trauma on LEC	Yes	No
8. Fits into a group based on PCL score	Yes	No

For inclusion into the study, answers to all items above must be YES.

Proceed to Informed Consent

Appendix F

Participant Information Form

Participant Information

For Staff Use Only

ID: _____

LOCATION: _____

INTERVIEWER: _____

STATUS: IP OP SCR STU

FIRST ADMIN: _____ _____

SECOND AD: _____ _____

This information is completely confidential. The coding system that is used makes it impossible for the project research team to associate you with the information you will be providing. The informed consent that you completed will be removed from your folder when your participation is complete and kept in a separate location.

1. What are the last four digits of your social security number? [ ] [ ] [ ] [ ]

2. What is your date of birth? ___/___/19___

3. How old are you? _____ years old

4. Sex? MALE FEMALE

5. Primary Ethnic Background (circle the appropriate code):

01 White, not Hispanic
02 Black, not Hispanic
03 Hispanic, White
04 Hispanic, Black
05 American Indian / Alaskan
06 Asian
07 Pacific Islander / Hawaiian
08 Other

6. Are you working at all now? YES NO

If yes, how many hours per week? _____

7. Circle the highest educational level that you have ***completed*** in school:

01 Grade School
02 Junior High School
03 Some High School
04 High School
05 Some College
06 4 Year College (e.g., B.A., B.S.)
07 Some Graduate work (e.g., master's degree)
08 Doctorate/Professional degree (e.g., M.D., Ph.D., J.D.)

Psychiatric History

8. Have you ever received professional treatment as an outpatient or inpatient for an emotional or substance use problem?

_____ NO _____ Outpatient

_____ Inpatient _____ Inpatient and outpatient

9. Approximate number of counseling/ therapy sessions in the last year? [ ]

9a. If you have been in counseling, please estimate the number of counseling sessions that have focused on traumatic event(s) that you have experienced. [ ]

10. In the last thirty days, have you been taking a prescribed medication for a psychological or emotional problem? YES NO

If yes, which drugs?

_____

Appendix G.

Purdue Scale for PTSD Revised Version (PPTSD-R)

Purdue Scale

In **the last month**, how often . . .	not at all		sometimes		often
1. Were you bothered by memories or thoughts of the event when you didn't want to think about it?	○	○	○	○	○
2. Have you had upsetting dreams about the event?	○	○	○	○	○
3. Have you suddenly felt as if you were experiencing the event again?	○	○	○	○	○
4. Did you feel very upset when something happened to remind you of the event?	○	○	○	○	○
5. Did you avoid activities or situations that might remind you of the event?	○	○	○	○	○
6. Did you avoid thoughts or feelings about the event?	○	○	○	○	○
7. Did you have difficulty remembering important aspects of the event?	○	○	○	○	○
8. Did you react physically (heart racing, breaking out in a sweat) to things that reminded you of the event?	○	○	○	○	○

Since the event . . .	not at all		sometimes		often
9. Have you lost interest in one or more of your usual activities (e.g., work, hobbies, entertainment)?	○	○	○	○	○
10. Have you felt unusually distant or cut off from people?	○	○	○	○	○
11. Have you felt emotionally "numb" or unable to respond to things emotionally the way you used to?	○	○	○	○	○
12. Have you been less optimistic about your future?	○	○	○	○	○
13. Have you had more trouble sleeping?	○	○	○	○	○
14. Have you been more irritable or angry?	○	○	○	○	○
15. Have you had more trouble concentrating?	○	○	○	○	○
16. Have you found yourself watchful or on guard, even when there was no reason to be?	○	○	○	○	○
17. Are you more jumpy or easily startled by noises?	○	○	○	○	○

Appendix H.

Antisocial Behavior Inventory (ASBI)

The following questions are about things you may have done ***before you were fifteen***. Please circle "No" or "Yes" for each question. If you do not understand a question, leave it blank.

1.	Did you often skip school?	No	Yes
2.	Did you ever run away from home and stay out overnight?	No	Yes
3.	Did you start fights?	No	Yes
4.	Did you ever use a weapon in a fight?	No	Yes
5.	Did you ever force someone to have sex with you?	No	Yes
6	Did you ever hurt an animal on purpose?	No	Yes
7.	Did you ever hurt another person on purpose (other than in a fight?)	No	Yes
8.	Did you deliberately damage things that weren't yours?	No	Yes
9.	Did you set fires?	No	Yes
10.	Did you lie a lot?	No	Yes
11.	Did you ever steal things?	No	Yes
12.	Did you ever rob or mug someone?	No	Yes
	The following questions are about things you may have done ***since you were fifteen.***		
13.	In the past five years, have you been unemployed for six months or more when you were able to work and jobs were available?	No	Yes
14	Have you been employed in the past five years?	No	Yes

	If yes, were you often absent for reasons other than illness (yours or a family member's)?	No	Yes
15.	Did you ever walk off a job without having another one to go on?	No	Yes
16.	Have you done things that are against the law - even if you weren't caught - like stealing, selling drugs, fencing, pimping, prostituting, or committing a felony?	No	Yes
17.	Have you ever been arrested?	No	Yes
18.	Have you been in any fights that came to swapping blows?	No	Yes
19.	Have you ever hit or thrown things at your spouse/partner?	No	Yes
20.	Have you ever hit a child (yours or someone else's), so hard that he/she had bruises or had to stay in bed or see a doctor?	No	Yes
21.	Have you ever owed people money and not paid them back?	No	Yes
22.	Have you ever failed to pay child support or failed to provide for children dependent upon you?	No	Yes
23.	Other than on a vacation, have you ever traveled around without knowing where you were going to stay or work?	No	Yes
24.	Was there ever a time when you had no regular place to live?	No	Yes
25.	Have you done a lot of lying since you were fifteen?	No	Yes
26.	Have you ever used an alias or pretended you were someone else?	No	Yes
27.	Have you often "conned" others to get what you wanted	No	Yes
28.	Have you gotten a lot of tickets for speeding, or do you often drive well above the speed limit?	No	Yes
29.	Have you driven a car when you were drunk?	No	Yes

30. Has anyone ever said that you weren't taking proper care of a child of yours (or a child that you were responsible for)...

...by not providing enough food or...	No	Yes
...not keeping the child clean enough or...	No	Yes
...not getting medical care when the child was sick or...	No	Yes
...leaving the child with neighbors because you weren't able to take care of the child at your home or...	No	Yes
...not arranging for anyone to take care of the child when you were not away or...	No	Yes
...running out of money to take care of the child because you spent the money on yourself?	No	Yes

31. In the past five years, have you been sexually active? No Yes

If yes, have you been able to be sexually involved with <u>just one person</u> for at least one year without having sex with anyone else? No Yes

32. In the past five years, have you hurt, mistreated, deceived, or stolen from another person? No Yes

If yes, do you feel it is OK for you to have done these things? No Yes

Appendix I.

Yale Brown Obsessive Compulsive Scale (YBOCS)

Research ID: _____

Total Y-BOCS Score: _____

Y-BOCS

Obsessions

Please think about the last seven days (including today), and circle one answer for each question.

1. How much of your time was occupied by obsessive thoughts? How frequently do the obsessive thoughts occur?

0	None – If you checked this answer, also check 0 for questions 2, 3 ,4, and 5 and proceed to question 6.
1	Less than 1 hour per day, or occasional intrusions (occur no more than 8 times a day)
2	1 to 3 hours per day, or frequent intrusions (occur more than 8 times a day), but most hours of the day are free of obsessions
3	More than 3 hours and up to 8 hours per day, or very frequent intrusions (occur more than 8 times a day and during most hours of the day)
4	More than 8 hours per day, or near-constant intrusions (too numerous to count, and an hour rarely passes without several obsessions occurring)

2. How much did your obsessive thoughts interfere with your social and work functioning? (If you are currently not working, please think about how much the obsessions interfered with your everyday activities.) In answering this question, please consider whether there was anything that you didn't do, or that you did less, because of the obsessions.

0	No interference
1	Mild, slight interference with social or occupational performance, but still performance not impaired
2	Moderate, definitive interference with social or occupational performance, but still manageable
3	Severe interference, causes substantial impairment in social or occupational performance
4	Extreme, incapacitating interference

3. How much distress do your obsessive thoughts cause you?

0	None
1	Mild, infrequent, and not too disturbing distress
2	Moderate, frequent, and disturbing distress, but still manageable

3	Severe, very frequent, and very disturbing distress
4	Extreme, near-constant, and disabling distress

4. How much of an effort did you make to resist the obsessive thoughts? How often did you try to disregard or turn your attention away from those thoughts as they entered your mind? (Here we are *not* interested in knowing how successful you were in controlling your thoughts, but only in how much or how often you tried to do so).

0	I made an effort to always resist (or the obsessions are so minimal that there is no need to actively resist them)
1	I tried to resist most of the time (i.e., more than half the time I tried to resist)
2	I made some effort to resist
3	I allowed all obsessions to fill my mind without attempting to control them, but I did so with some reluctance
4	I completely and willingly gave in to all obsessions.

5. How much control did you have over your obsessive thoughts? How successful were you in stopping or diverting your obsessive thinking? (If you rarely tried to resist, in order to answer this question, please think about those rare occasions on which you *did try* to stop the obsessions.) **NOTE:** Do not include here obsessions stopped by doing compulsions.

0	Complete control
1	Much control; usually I could stop or divert obsessions with some effort and concentration
2	Moderate control; sometimes I could stop or divert obsessions.
3	Little control; I was rarely successful in stopping obsessions and could only divert attention with great difficulty.
4	No control; I was rarely able to even momentarily ignore the obsessions.

Compulsions

Please think about the *last seven days* (including today), and check one answer for each question.

6. How much time did you spend performing compulsive behavior? How frequently did you perform compulsions? (If your trial involved daily living activities, please consider how much longer it took you to complete routine activities because of your rituals.)

0	None. If you checked this answer, then also check 0 for questions 7, 8, 9, and 10, then answer 11 and 12.
1	Less than 1 hour per day was spent performing compulsions, or occasional performance of compulsive behaviors (no more than 8 times a day)
2	1 to 3 hours per day was spent performing compulsions, or frequent performance of compulsive behaviors (more than 8 times a day, but most hours were free of compulsions)
3	More than 3 hours and up to 8 hours per day were spent performing compulsions, or very frequent performance of compulsive behaviors (more than 8 times a day and during most hours of the day)
4	More than 8 hours per day were spent performing compulsions, or near-constant performance of compulsive behaviors (too numerous to count, and an hour rarely passese without several compulsions being performed)

7. How much did your compulsive behaviors interfere with your social or work functioning? (If you are not currently working, please think about your everyday activities.)

0	No interference
1	Mild, slight interference with social or occupational activities, but overall performance not impaired
2	Moderate, definite interference with social or occupational performance, but still manageable
3	Severe interference, substantial impairment in social or occupational performance
4	Extreme, incapacitation interference

8. How would you have felt if prevented from performing your compulsion(s)? How anxious would you have become?

0	Not at all anxious
1	Only slightly anxious if compulsions prevented
2	Anxiety would mount but remain manageable if compulsions prevented
3	Prominent and very disturbing increase in anxiety if compulsions interrupted
4	Extreme, incapacitating anxiety from any intervention aimed at reducing the compulsions

9. How much of an effort did you make to resist the compulsions? Or how often did you try to stop the compulsions? (Rate only how often or how much you tried to resist your compulsions, not how successful you actually were in stopping them.)

0	I made an effort to always resist (or the symptoms were so minimal that there was no need to actively resist them).
1	I tried to resist most of the time (i.e., more than half the time).
2	I made some effort to resist.
3	I yielded to almost all compulsions without attempting to control them, but I did so with some reluctance.
4	I completely and willingly yielded to all compulsions.

10. How much control did you have over the compulsive behavior? How successful were you in stopping the ritual(s)? (If you rarely tried to resist, please think about those rare occasions in which you *did try* to stop the compulsions, in order to answer this question).

0	I had complete control.
1	Usually I could stop compulsions or rituals with some effort and willpower.
2	Sometimes I could stop compulsive behavior but only with difficulty.
3	I could only delay the compulsive behavior, but eventually it had to be carried out to completion.
4	I was rarely able to even momentarily delay performing the compulsive behavior.

11. Do you think your obsessions or compulsions are reasonable or rational? Would there be anything besides anxiety to worry bout if you resisted them? Do you think something would really happen?

0	I think my obsessions or compulsions are unreasonable or excessive.
1	I think my obsessions or compulsions are unreasonable or excessive, but I'm not completely convinced that they aren't necessary.
2	I think my obsessions or compulsions may be unreasonable or excessive.
3	I don't think my obsessions or compulsions are unreasonable or excessive.
4	I am sure my obsessions or compulsions are reasonable, no matter what anyone says.

12. Have you been avoiding doing anything, going anyplace, or being with anyone because of your obsessional thoughts or because you were afraid you would perform compulsions?

0	I haven't been avoiding anything.
1	I have been avoiding doing a few important things.
2	I have been avoiding some important things.
3	I have been avoiding many important things.
4	I have been avoiding doing most everything.

Go to next instrument ➔

Appendix J.

Hospital Anxiety and Depression Scale (HADS)

Please choose one response from the four given for each interview. Avoid thinking too long about your answers and please answer how it currently describes your feelings.

A	I feel tense or 'wound up':	
	Most of the time	3
	A lot of the time	2
	From time to time, occasionally	1
	Not at all	0

D	I still enjoy the things I used to enjoy:	
	Definitely as much	0
	Not quite so much	1
	Only a little	2
	Hardly at all	3

A	I get a sort of frightened feeling as if something awful is about to happen:	
	Very definitely and quite badly	3
	Yes, but not too badly	2
	A little, but it doesn't worry me	1
	Not at all	0

D	I can laugh and see the funny side of things:	
	As much as I always could	0
	Not quite so much now	1
	Definitely not so much now	2
	Not at all	3

A	Worrying thoughts go through my mind:	
	A great deal of the time	3
	A lot of the time	2
	From time to time, but not too often	1
	Only occasionally	0

D	I can enjoy a good book or radio or TV program:	
	Often	0
	Sometimes	1
	Not often	2
	Very seldom	3

D	I feel cheerful:	
	Not at all	3
	Not often	2
	Sometimes	1
	Most of the time	0

A	I feel restless as I have to be on the move:	
	Very much indeed	3
	Quite a lot	2
	Not very much	1
	Not at all	0

A	I get a sort of frightened feeling like 'butterflies' in the stomach:	
	Not at all	0
	Occasionally	1
	Quite Often	2
	Very Often	3

D	I feel as if I am slowed down:	
	Nearly all the time	3
	Very often	2
	Sometimes	1
	Not at all	0

D	I have lost interest in my appearance:	
	Definitely	3
	I don't take as much care as I should	2
	I may not take quite as much care	1
	I take just as much care as ever	0

A	I can sit at ease and feel relaxed:	
	Definitely	0
	Usually	1
	Not Often	2
	Not at all	3

D	I look forward with enjoyment to things:	
	As much as I ever did	0
	Rather less than I used to	1
	Definitely less than I used to	2
	Hardly at all	3

A	I get sudden feelings of panic:	
	Very often indeed	3
	Quite often	2
	Not very often	1
	Not at all	0

Reference:

Zigmond and Snaith (1983)

Appendix K.

The Computer Anxiety Rating Scale Respecified Model (CARS)

ID NUMBER: _____

CARS-REVISED

Please circle one of the choices for each of the items in this questionnaire. Please make sure to answer each question.

1. I hesitate to use a computer for fear of making mistakes I cannot correct.	5 Strongly Agree	4 Mildly Agree	3 Neutral	2 Mildly Disagree	1 Strongly Disagree
2. The challenge of learning about computers is exciting	1 Strongly Agree	2 Mildly Agree	3 Neutral	4 Mildly Disagree	5 Strongly Disagree
3. I feel insecure about my ability to interpret a computer printout.	5 Strongly Agree	4 Mildly Agree	3 Neutral	2 Mildly Disagree	1 Strongly Disagree
4. I look forward to using a computer on my job.	1 Strongly Agree	2 Mildly Agree	3 Neutral	4 Mildly Disagree	5 Strongly Disagree
5. I have avoided computers because they are unfamiliar and somewhat intimidating to me.	5 Strongly Agree	4 Mildly Agree	3 Neutral	2 Mildly Disagree	1 Strongly Disagree
6. Anyone can learn to use a computer if they are patient and motivated.	1 Strongly Agree	2 Mildly Agree	3 Neutral	4 Mildly Disagree	5 Strongly Disagree
7. I have difficulty understanding the technical aspects of computers	5 Strongly Agree	4 Mildly Agree	3 Neutral	2 Mildly Disagree	1 Strongly Disagree

Appendix L.

CPS-M EVALUATION QUESTIONNAIRE

Please circle your response (1 through 5) below. Make sure to complete each item.

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree	Not Applicable To Me
1. The colors on the screen were easy to look at.	1	2	3	4	5	N/A
2. It was easy to hear what the computer interviewer was saying.	1	2	3	4	5	N/A
3. The questions the computer interviewer asked me were easy to understand.	1	2	3	4	5	N/A
4. The screen display was well organized.	1	2	3	4	5	N/A
5. It was easy to click on the computer "buttons" on the screen.	1	2	3	4	5	N/A
6. The text on the screen was easy to read.	1	2	3	4	5	N/A
7. It was helpful to have the questions presented on the screen as well as read by the computer interviewer.	1	2	3	4	5	N/A
8. I like having the questions read by the computer interviewer.	1	2	3	4	5	N/A
9. Using the mouse to enter my answers was easy.	1	2	3	4	5	N/A
10. Using the keyboard on the desk to enter my answers was easy (if applicable)	1	2	3	4	5	N/A
11. The questions the computer interviewer asked me were worded clearly.	1	2	3	4	5	N/A
12. The computer program was easy to use.	1	2	3	4	5	N/A
13. The questions the computer interviewer asked me were relevant to my situation.	1	2	3	4	5	N/A
14. Going through the computer interview caused me to feel things that are now upsetting me.	1	2	3	4	5	N/A
15. I would have preferred to read the questions by myself without the computer interviewer reading them to me.	1	2	3	4	5	N/A
16. I would have preferred a human being as an interviewer for the questions that were asked of me.	1	2	3	4	5	N/A
17. I DO NOT feel any worse than I did when I started the computer interview.	1	2	3	4	5	N/A
18. I would have preferred a female computer interviewer.	1	2	3	4	5	N/A
19. I like the video clips of the computer interviewer (if applicable)	1	2	3	4	5	N/A
20. The video clips of the computer interviewer made the computer program more like a real interview (if applicable)	1	2	3	4	5	N/A
21. The video clips of the computer interviewer were a useful addition to the computer program (if applicable).	1	2	3	4	5	N/A
22. The video clips of the computer interviewer were a distraction and were not helpful (if applicable).	1	2	3	4	5	N/A

Appendix M.1

Informed Consent for the VA

Department of Veterans Affairs	**VA Research Consent Form**
Subject Name:	**Date:**
Title of Study:	Psychometric Properties of the Computerized PTSD Scale – Multimedia Version (CPS-M) Among Veterans
Principal Investigator:	Sheila Rauch, PhD
VAMC:	VA Ann Arbor Healthcare System

PURPOSE OF RESEARCH STUDY:
The purpose of the study is to develop a computerized Posttraumatic Stress Disorder assessment instrument. In order to conduct this investigation, we need to determine the relationship between responses given to a computerized questionnaire and other written questions. Your involvement will be for one session that lasts about 60 to 75 minutes and possibly another that lasts roughly 30 minutes.

DESCRIPTION:
You have been found eligible to participate in the study based on the screening you have completed.

Up to 210 male/female veterans who are eligible will participate in the study. Veterans will be assigned to groups based on the severity of their symptoms. Seventy veterans in each of 3 symptom groups (e.g., mild /no symptoms, moderate symptoms, and severe symptoms) will be enrolled. Veterans will be eligible on a first come basis until the groups are filled (70 patients for each group).

During your participation in the study, you will sit in front of a computer for a computerized assessment and also complete some paper-and-pencil forms. The order may vary; meaning, some people will complete the computer segment first and others will complete the paper forms first. For the computer segment, you will answer questions using a computer mouse. This software has sound files, so most questions will be read to you by the computer. This usually takes about 30 minutes and the computer will let you know when it is finished. The other segment involves completing paper and pencil forms. This usually takes about 30-45 minutes. If any of the language in these forms is confusing, please ask the research assistant for help. In each of these sections, you will be asked about questions regarding past traumatic events and your reactions to them. Some of the paper-and-pencil forms ask other questions about depression and anxiety.
Depending on how many people have been in the study before you, you may be eligible to return for another session two weeks later. Fifty veterans will be needed to complete the second session. They will be divided into roughly equivalent groups according to screening symptom severity. This session consists of the computer segment only and should take roughly 30 minutes to complete.

RISKS:
Some people find it unpleasant to fill out the surveys or report upsetting memories. However, this is a

SUBJECT'S IDENTIFICATION (I.D. plate or give – Last, First, Middle Name and last 4 digits of SSN):

Department of Veterans Affairs	**VA Research Consent Form**	
Subject Name:		**Date:**
Title of Study:	Psychometric Properties of the Computerized PTSD Scale – Multimodia Version (CPS-M) Among Veterans	
Principal Investigator:	Sheila Rauch, PhD	**VAMC:** VA Ann Arbor Healthcare System

standard part of the assessment of traumatic events and PTSD. Some questions may remind you of painful memories and cause some emotional discomfort. There may be other risks that are unforeseeable at this time.

If you become distressed at any time during the interview or other assessments, you may pause or discontinue participation in the study. Additionally, the study personnel conducting the session may work with you to reduce negative reactions. If needed, he/she will contact the principle investigator or other PCT clinicians in order to assist with your care. Referral to psychiatry triage may be made as determined necessary.

The magnitude of harm if there is loss of confidentiality potentially includes social damage to relationships with friends and peers, and secondly, damage to business relationships that may decrease economic gains. In order to protect against breach of confidentiality, all policies regarding training of research study staff and research data management will be followed. All research data will be housed and secured at the VA to ensure confidentiality and later destroyed by Dr. Rauch. Funding for this study is provided through Eastern Michigan University. Your name and social security number are required to be maintained and may be disclosed to research staff at Eastern Michigan University for the purpose of reporting payment.

BENEFITS:
You are not likely to directly benefit by participating in this study. Your participation will assist in the development of a new assessment tool for the improvement of treatment for other people who have suffered from traumatic events.

ALTERNATE COURSES OF ACTION:
You do not have to participate in this study. You may drop out at any time without penalty or loss of benefits entitled to you. If you consent to participate in this research study, you may stop and leave at any time with no penalty to you. Your participation is strictly voluntary. Your responses will not affect your eligibility for clinical care at the VA Ann Arbor Healthcare System and cannot be used for service connection. The results will not be entered into your medical record except in the instance of reported danger to yourself or others (see below).

If participating in this study does bother you, you can stop and leave at any time without any impact on your care at the VAAAHCS. You may also choose to take a break or discuss your feelings with study staff. If you are distressed, study staff may ask that you meet briefly with a VA clinician face-to-face.

STATEMENT OF RESEARCH RESULTS:
Your identifying information (e.g., name) will be removed from the file in order to protect your privacy. Your data will be assigned a research ID number. The research data will be stored in a locked office

Department of Veterans Affairs	**VA Research Consent Form**	
Subject Name:		**Date:**
Title of Study:	Psychometric Properties of the Computerized PTSD Scale – Multimedia Version (CPS-M) Among Veterans	
Principal Investigator:	Sheila Rauch, PhD	**VAMC:** VA Ann Arbor Healthcare System

and in a password protected computer at the VAAAHCS. Data will be encrypted to provide additional protection. This information will be destroyed after the all the data has been collected. To prevent any potential negative consequences to you, any information gathered during the study will not be included in your medical records unless you report risk of harm to self or others (see below).

If the research in this study is published in journals or presented at conferences, it will not be connected with your identifying information. As a participant, you are entitled to a summary of the results, and if desired, this may be obtained from Dr. Sheila Rauch at the VA PTSD Clinic (734-845-3545) or Dr. Dean Lauterbach at Eastern Michigan University (734-487-0765).

We will let you know of any important discoveries made during this study which may affect you, your condition, or your willingness to participate in this study. The study includes surveys which may elicit information concerning suicidal and homicidal intent, depression, or other major clinical findings. The research investigators will notify your primary mental health provider and/or your treating psychologist if you express these concerns. This contact will also be documented in your medical record.

SPECIAL CIRCUMSTANCES:
There will be no costs to you for any of the assessments done as part of this research study. You may withdraw from the study at any time. There are no consequences for discontinuing.

COMPENSATION:
After completion of each of the two study sessions, you will receive a $10 gift card to a local department store after you complete each of the two study sessions.

Department of Veterans Affairs	**VA Research Consent Form**

Subject Name: **Date:**

Title of Study: Psychometric Properties of the Computerized PTSD Scale – Multimedia Version (CPS-M) Among Veterans

Principal Investigator: Sheila Rauch, PhD | **VAMC:** VA Ann Arbor Healthcare System

RESEARCH SUBJECT'S RIGHTS:

_____ has explained this research study and answered all questions. The risks or discomforts and possible benefits of the study have been described. Other choices of available treatment have been explained. Some veterans are required to pay co-payments for medical care and services provided by VA. These co-payment requirements will continue to apply for VA care and services that are not part of this study.

Participation in this study is entirely voluntary. You may refuse to participate. Refusal to participate will involve no penalty or loss of rights to which individuals are entitled. Participants may withdraw from this study at any time without penalty or loss of VA or other benefits. In the event that you sustain an injury or illness as a result of your participation in this VA approved research study, all necessary medical treatment (except in limited circumstances) will be provided in a VA medical facility. You will be treated for the injury at no cost to you. However, no additional compensation has been set aside. You have not waived any legal rights or released the hospital or its agents from liability for negligence by signing this form.

In case there are medical problems or if you have questions, concerns or complaints about the research study, you can contact member(s) of the research study team: Sheila Rauch, Ph.D. can be called at 734-845-3545 during the day and can be contacted after hours by paging (734) 851-8379.

You may contact the VA IRB coordinator (at 734-845-3440) when staff members of the research study are not available or to discuss questions or concerns with someone other than research study staff. Research subjects may learn more about research at the VA Ann Arbor Healthcare System at this website: www1.va.gov/aavaresearch

I am informed about my rights as a research subject, and I voluntarily consent to participate in this study. I will receive a signed copy of this consent form.

X_____ Signature of Subject	X_____ Date	
X_____ Signature of Witness (A witness must observe the subject's signature)	X_____ Witness (Print Name)	X_____ Date
X_____ Signature of person obtaining consent (Study personnel must be approved by VA IRB.)	X_____ (Print Name)	X_____ Date

IF MORE THAN ONE PAGE IS USED, EACH PAGE (VAF 10-1086) MUST BE CONSECUTIVELY NUMBERED AND SIGNED.

Appendix M.2
Informed consent for Henry Ford Hospital

Henry Ford HEALTH SYSTEM	**CONSENT TO PARTICIPATE IN A RESEARCH STUDY** (HFH IRB form rev. 06/2004)	DATE: MRN: NAME:

APPROVAL PERIOD MAY 15 '07 MAY 14 '08 Institutional Review Board	**PROJECT TITLE:** **Psychometric properties and factor structure of the Computerized Posttraumatic Stress Disorder Scale-Multimedia Version (CPS-M) with a clinical sample**

Shawn T. Mason, MS
Consultation-Liaison Psychiatry
Henry Ford Health System
Clara Ford Floor 6
Detroit, MI

1. **WHY IS THIS RESEARCH BEING DONE?**

This research is being done in order to develop a computerized Posttraumatic Stress Disorder assessment instrument. It is called the Computerized PTSD Scale: Multimedia Version and it has the potential to enhance assessment for Posttraumatic Stress by reducing time and resources needed from clinical providers and thereby attempts to improve this aspect of clinical care for trauma victims.

In order to conduct this investigation, we need to determine the relationship between responses given to a computerized questionnaire and other written questions. Your involvement will be for one session that lasts about 60 to 75 minutes and possibly another that lasts roughly 30 minutes. This study will require the participation of 210 patients, of which a subset will be asked to return for a second appointment to retake the computerized part only. This study will be conducted at Henry Ford Outpatient Behavioral Health Services at One Ford Place.

This study is sponsored in part by Eastern Michigan University. This study will also be carried out at other hospitals and medical centers throughout the United States or other countries. There will be approximately 420 people taking part in this research study throughout the United States.

You have been asked to take part in a research study because you are seeking clinical care, have reported exposure to a traumatic event in the screening, and have not met the exclusion criteria.

2. **WHAT WILL HAPPEN IF I TAKE PART IN THIS RESEARCH STUDY?**

Patients will be assigned to groups based on the severity of their symptoms reported in the screening procedure. Seventy patients in each of 3 symptom groups (e.g., mild/no symptoms, moderate symptoms, and severe symptoms) will be enrolled. Veterans will be eligible on a first come basis until the groups are filled (70 patients for each group). If you are eligible to continue

Henry Ford Health System	**CONSENT TO PARTICIPATE IN A RESEARCH STUDY** (HFH IRB form rev. 06/2004)	DATE: MRN: NAME:
APPROVAL PERIOD MAY 15 '07 MAY 14 '08 Institutional Review Board	**PROJECT TITLE:** **Psychometric properties and factor structure of the Computerized Posttraumatic Stress Disorder Scale-Multimedia Version (CPS-M) with a clinical sample**	

with the study, you will sit in front of a computer for a computerized assessment and also complete some paper-and-pencil forms. The order may vary; meaning, some people will complete the computer segment first and others will complete the paper forms first. For the computer segment, you will answer questions using a computer mouse. This software has sound files, so most questions will be read to you by the computer. This usually takes about 30 minutes and the computer will let you know when it is finished. The other segment involves completing paper-and-pencil forms. This usually takes about 30-45 minutes. If any of the language in these forms is confusing, please ask the research assistant for help. In each of these sections, you will be asked about questions regarding past traumatic events and your reactions to them. Some of the paper-and-pencil forms ask other questions about depression and anxiety.

Depending on how many people have been in the study before you, you may be eligible to return for another session two weeks later. Fifty veterans will be needed to complete the second session. They will be divided into roughly equivalent groups according to screening symptom severity. This session consists of the computer segment only and should take roughly 30 minutes to complete.

3. WHAT ARE THE RISKS OF THE STUDY?

You should tell the person obtaining your consent about any other medical research studies you are involved in right now. It is not expected that you will have any complications or discomforts from being in this study. There may be risks or discomforts that are not known at this time.

Some people find it unpleasant to fill out the surveys or report upsetting memories. However, this is a standard part of the assessment of traumatic events and PTSD. Some questions may remind you of painful memories and cause some emotional discomfort.

If you become distressed at any time during the interview or other assessments, you may pause or discontinue participation in the study. Additionally, the study personnel conducting the session may work with you to reduce negative reactions. If needed, he/she will contact your clinical provider in order to assist with your care. Referral for immediate psychiatric care may be made as determined necessary.

The magnitude of harm if there is loss of confidentiality potentially includes social damage to relationships with friends and peers, and secondly, damage to business relationships that may decrease economic gains. In order to protect against breach of confidentiality, all policies regarding training of research study staff and research data management will be followed. All

	CONSENT TO PARTICIPATE IN A RESEARCH STUDY (HFH IRB form rev: 06/2004)	DATE: MRN: NAME:
APPROVAL PERIOD MAY 2 5 '07 MAY 2 4 '08 Institutional Review Board	**PROJECT TITLE:** **Psychometric properties and factor structure of the Computerized Posttraumatic Stress Disorder Scale-Multimedia Version (CPS-M) with a clinical sample**	

research data will be housed and secured at Behavioral Health to ensure confidentiality and later destroyed by the PI.

There may be additional risks or discomforts that are not known at this time.

4. WHAT ARE THE BENEFITS TO TAKING PART IN THE STUDY?

You are not likely to directly benefit by participating in this study. Your participation will assist in the development of a new assessment tool for the improvement of treatment for other people who have suffered from traumatic events.

5. WHAT OTHER OPTIONS ARE THERE?

You do not have to participate in this study. You may drop out at any time without penalty or loss of benefits entitled to you. If you consent to participate in this research study, you may stop and leave at any time with no penalty to you. Your participation is strictly voluntary. Your responses will not affect your eligibility for clinical care. The results will **not** be entered into your medical record except in the instance of reported danger to yourself or others.
If participating in this study does bother you, you can stop and leave at any time without any impact on your care at Henry Ford. You may also choose to take a break or discuss your feelings with study staff. If you are distressed, study staff may ask that you meet briefly with a clinician face-to-face.

6. WHAT ABOUT CONFIDENTIALITY?

Your identifying information (e.g., name) will be removed from the file in order to protect your privacy. Your data will be assigned a research ID number. The research data will be stored in a locked office and in a password protected computer at Behavioral Health. This information will be destroyed after the all the data has been collected. To prevent any potential negative consequences to you, any information gathered during the study will **not** be included in your medical records unless you report risk of harm to self or others.

Henry Ford Health System	**CONSENT TO PARTICIPATE IN A RESEARCH STUDY** (HFH IRB form rev. 06/2004)	DATE: MRN: NAME:

APPROVAL PERIOD MAY 15 '07 MAY 14 '08 Institutional Review Board	PROJECT TITLE: **Psychometric properties and factor structure of the Computerized Posttraumatic Stress Disorder Scale-Multimedia Version (CPS-M) with a clinical sample**

If the research in this study is published in journals or presented at conferences, it will **not** be connected with your identifying information. As a participant, you are entitled to a summary of the results, and if desired, this may be obtained from Shawn Mason, MS at Henry Ford (313) 916-2523.

The study sponsor, Eastern Michigan University, requires that your name and social security number be retained in our records. These records will be retained, secured, and destroyed in the same fashion as your other identifying information. This information is recorded to prove that grant funds were provided to participants and will only be released to research staff at Eastern Michigan University upon request.

We will let you know of any important discoveries made during this study which may affect you, your condition, or your willingness to participate in this study. The study includes surveys which may elicit information concerning suicidal and homicidal intent, depression, or other major clinical findings. The research investigators will notify your primary mental health provider and/or your treating psychologist if you express these concerns. This contact will also be documented in your medical record.

By signing this consent form, you agree that we may collect, use and release your personal and health information for the purpose of this research study.

We may collect and use:

- Your existing medical records.
- New health information created during this study.
- Health insurance and other billing information.

We may release this information to the following people:

The Principal Investigator and his/her associates who work on, or oversee the research activities.

- Government officials who oversee research.
- Your insurance company or others responsible for paying your medical bills.
- Other researchers at other institutions participating in the research.

Once your information has been released according to this consent form, it could be released again and may no longer be protected by federal privacy regulations.

	CONSENT TO PARTICIPATE IN A RESEARCH STUDY (HFH IRB form rev. 06/2004)	DATE: MRN: NAME:
APPROVAL PERIOD MAY 15 '07 MAY 14 '08 Institutional Review Board	**PROJECT TITLE:** **Psychometric properties and factor structure of the Computerized Posttraumatic Stress Disorder Scale-Multimedia Version (CPS-M) with a clinical sample**	

This consent form, test results, medical reports and other information about you from this study may be placed into your medical record. Generally, you are allowed to look at your medical record. During the research study, you will be allowed to look at your research study information that is not in your medical record.

HFHS or others may publish the results of this study. No names, identifying pictures or other direct identifiers will be used in any public presentation or publication about this study unless you sign a separate consent allowing that use.

This consent to use and release your personal and health information will expire at the end of this research study.

You do not have to sign this consent to release your medical information and may cancel it at any time. If you decide not to sign this consent or cancel your consent, you cannot participate in this study. If you notify us that you wish to stop participating in this study, we may continue to use and release the information that has already been collected. To cancel your consent, send a written and dated notice to the principal investigator at the address listed on the first page of this form.

7. WHAT IF I AM INJURED?

There is no federal, state, or other program that will compensate you or pay for your medical care if you are injured as a result of participating in this study. You and/or your medical insurance may have to pay for your medical care if you are injured as a result of participating in this study. You are not giving up any of your legal rights by signing this consent form.

8. WHO DO I CALL WITH QUESTIONS ABOUT THE STUDY OR TO REPORT AN INJURY?

Shawn T. Mason, MS., or his/her staff member has explained this research study and has offered to answer any questions. If you have questions about the study procedures, or to report an injury you may contact Shawn T. Mason, MS at 313-916-2523.

If you have questions about your rights as a research subject you may contact the Henry Ford Health System IRB Coordinator at (313) 916-2024. The IRB is a group of people who review the research to protect your rights.

Henry Ford Health System	**CONSENT TO PARTICIPATE IN A RESEARCH STUDY** (HFH IRB form rev. 08/2004)	DATE: MRN: NAME:

APPROVAL PERIOD MAY 15 '07 MAY 14 '08 Institutional Review Board	**PROJECT TITLE:** **Psychometric properties and factor structure of the Computerized Posttraumatic Stress Disorder Scale-Multimedia Version (CPS-M) with a clinical sample**

9. DO I HAVE TO PARTICIPATE IN THIS STUDY?

No, your participation in this research study is voluntary. If you decide to participate, you can stop at any time. If this happens, you may be asked to return for a visit for safety reasons. You will get the same medical care from HFHS whether or not you participate in this study. There will be no penalties or loss of benefits to which you would otherwise be entitled if you choose not to participate or if you choose to stop your participation once you have started. You will be told about any significant information that is discovered that could reasonably affect your willingness to continue being in the study.

10. WHO ELSE CAN STOP MY PARTICIPATION?

The Principal Investigator, sponsor or your doctor can end your participation in the research study at any time. If this happens, you may be asked to return for a visit for safety reasons.

11. WILL IT COST ANYTHING TO PARTICIPATE?

We do not expect there to be any additional costs to you if you participate in this study. Items related to the routine medical care that you would receive even if you did not participate in this study will be billed to you or your insurance company. You have the right to ask what it will cost you to take part in this study.

12. WILL I BE PAID TO PARTICIPATE?

You will be paid compensated for your time with a ten dollar gift card to Target Stores for completion of the first study session. You will be compensated with a five dollar gift card for completion of the second study session. If you do not finish the individual study session, you will not be paid for the part that you did complete. Funds are not arranged for partial payments.

13. CONSENT

You have read this consent form or it has been read to you. You understand what you are being asked to do. Your questions have been answered. Any technical terms you did not understand have been explained to you. You agree to be in this study. You will be given a copy of this consent form.

Henry Ford Health System	**CONSENT TO PARTICIPATE IN A RESEARCH STUDY** (HFH IRB form rev: 08/2004)	DATE: MRN: NAME:

APPROVAL PERIOD MAY 16 '07 MAY 14 '08 Institutional Review Board	**PROJECT TITLE:** **Psychometric properties and factor structure of the Computerized Posttraumatic Stress Disorder Scale-Multimedia Version (CPS-M) with a clinical sample**

Signature of Subject _____ Date _____ Time _____

Print Name of Subject _____

Witness to Signature _____ Date _____ Time _____

Print Name of Person Obtaining Consent _____

Signature of Person Obtaining Consent _____ Date _____ Time _____

Appendix N.

Debriefing Form

The purpose of this research was to compare how well different formats of PTSD instruments agree with one another for diagnostic purposes. You were selected for the research because you indicated experiencing a traumatic event in your life. People who were asked to continue their participation varied widely in the nature of their responses – some acknowledged severe symptoms while others were almost asymptomatic.

Please keep in mind that all information collected during this research project is confidential. Your identifying information (e.g., name) will be removed from the file in order to protect your privacy. Your data will be assigned a research ID number based on how many participants have already completed the study. The research data will be stored in a locked office and in a password protected computer at the VAAAHCS. Data will be encrypted to provide additional protection. To prevent any potential negative consequences to you, any information gathered during the study will **not** be included in your medical records unless you report risk of harm to self or others. Data will be retained for 7 years after the last publication from the data set. Patient identifiers connected to research ID numbers will be included in a file also secured at the VA that is stored in a locked cabinet separate from the rest of the study data and destroyed at the same interval as the study data.

Sometimes discussing stressful events can be distressing and cause a person to remember troubling events. Persons often become tearful or upset when responding to questions like those that you answered today. If you are feeling upset, please tell the interviewer. There is no rush to leave, if you need a few minutes to regain your composure, please stay until you feel better.

If you find that you continue to have difficulty managing your emotions after you leave this session, or believe you may be a danger to yourself or others, professional help is available to you.

Veterans should contact their primary provider at the VA. Veterans can also access triage services at the Mental Health Clinic. The phone number is 734-213-6998. If you need help when this center is closed, please contact 911 emergency services for mental health assistance.

Above all, please contact Dr. Sheila Rauch at (734) 769-7100 x6040 or Dr. Dean Lauterbach at (734) 487-0785 if you are having any difficulties as a result of this study.

While we do not expect many individuals to develop symptoms that warrant further care, you should be aware that there are many treatment options available to you and that it is not unusual to feel down for a while after discussing a traumatic event.

Appendix O.1

IRB Approval Letter from Eastern Michigan University

EASTERN MICHIGAN UNIVERSITY

May 30, 2007

Shawn Mason
Department of Psychology

Dear Shawn Mason:

The Human Subjects Institutional Review Board (IRB) of Eastern Michigan University has granted approval to your modified proposal, "Psychometric Properties and Factor Structure of the Computerized PTSD Scale: Multimedia Version (CPS-M) in a Clinical Sample."

After careful review of your completed application, the IRB determined that the rights and welfare of the individual subjects involved in this research are carefully guarded. Additionally, the methods used to obtain informed consent are appropriate, and the individuals participating in your study are not at risk.

You are reminded of your obligation to advise the IRB of any change to the protocol that might alter your research in any manner that differs from that upon which this approval is based. Approval of this project applies for one year from the date of this letter. If your data collection continues beyond the one-year period, you must apply for a renewal.

On behalf of the Human Subjects Committee, I wish you success in conducting your research.

Sincerely,

Deb de Laski-Smith, Ph.D.
Interim Dean
Graduate School
Administrative Co-Chair
University Human Subjects Review Committee

Note: If project continues beyond the length of one year, please submit a continuation request form by **5/30/08**.

Reference # 070519M

Graduate Studies & Research • Office of the Dean • Starkweather Hall • Ypsilanti, Michigan 48197
Phone: 734.487.0042 FAX: 734.487.0050

Appendix O.2

IRB Approval Letter from Henry Ford Hospital

RESEARCH ADMINISTRATION

May 15, 2007

Research Administration
CFP Basement 046
2799 West Grand Boulevard
Detroit, MI 48202-2689
(313) 916-2024 Office
(313) 916-2018 Fax

To: Shawn Mason, M.S.
Patient Care Services

Fm: Timothy Roehrs, Ph.D., Chair
Tom Mikkelsen, M.D., Vice Chair
Institutional Review Board (IRB)

Re: **Psychometric Properties and Factor Structure of the Computerized Posttraumatic Stress Disorder Scale-Multimedia Version in a Clinical Population** (IRB No. 4505)

Period of IRB Approval: **May 15, 2007 – May 14, 2008**

This is to apprise you that the above-named project was reviewed through the expedited procedure on **May 15, 2007**. The human rights aspects of the above-referenced protocol were reviewed and approved. This approval is based on Title 45, Section 46.110 of the HHS Code of Federal Regulations related to no more than minimal risk to the subject. The approval of this project will be presented as an informational item at a subsequent IRB meeting.

The Institutional Review Board and Federal Regulations require that each research proposal involving human subjects be reviewed at intervals appropriate to the degree of risk but not less than once per year and that a final report is submitted at the termination of the project. ***Therefore, a continuation or final report for this proposal is due in one year. The report must be submitted to and approved by the IRB by May 14, 2008 to avoid a lapse in your approval. As the Principal Investigator, you are ultimately responsible for timely submissions of continuation and final reports. You are encouraged to create a tracking mechanism to ensure timely submissions.***

Revisions to the protocol must be approved by the IRB prior to implementation. In addition, our IRB is expected to review all documents and activities that bear directly on the rights and welfare of participants of research. A copy of the signed and stamped application, indicating approval by the Institutional Review Board, is enclosed for your files.

Forms for progress reports, final reports, modification and adverse/unexpected event are available on the IRB website or in the Research Office (CFP-Bsmt). Please contact the Research Office at 916-2024 if you have questions regarding these matters.

Appendix O.3

IRB Approval Letter from the VA

MEMORANDUM

Department of
Veterans Affairs

Date: July 16, 2007
To: Rauch, Sheila, PhD
From: Ann Arbor VA Research Service (11R), Subcommittee on Human Studies (FWA# IRB00000264) of the VA Ann Arbor Healthcare System (FWA00000348)
Subj: Project review at the July 12 meeting, Item #4.23.

4.23 Rauch, Sheila, PhD 0001 Psychometric Properties and Factor Structure of the Computerized PTSD Scale (CPS-M) Among Veterans

Continued Approval Status (Months, Exp Date, Risk) 12 8/9/2007 Low
6/15/07 Project is ACTIVE [VA Consent Form] (210 subj at VA)
7/12/07 The summary report is acceptable.

VA CONSENT FORM CORRECTIONS
Risks:
->Add this statement: "There may be other risks that are unforeseeable at this time."
Compensation:
->Revise as shown: "You will receive a $10 gift card to a local store after you complete each of the two study sessions."

ACTION TAKEN:
APPROVED, Continued Use of Human Subjects, VA Consent Form (210 subj at VA)
The risks are reasonable in relation to benefits to subjects and the knowledge to be gained.
The risks of the study have been minimized to the extent possible.
Continued Approval Status (Months, Exp Date, Risk) 12 7/10/2008 LOW
(9=for, 0=opposed, 0=abstain, 1=not present) [HK]

Human Studies Committee regulations require investigators to follow these procedures:

1) You must use copies of the VA IRB-approved Consent Form with the VA logo and date of approval & expiration.
2) You must submit a "Request for Continued Approval of Human Use" at least 10 days before the expiration date.
3) All changes or deviations from the project protocol, consent form or IRB policies must first be approved by the IRB.
4) Report a Serious Adverse Event or Unanticipated Problem that occurs to a local subject within 7 calendar days See the VA IRB SAE and UPR Reporting Policy at "http://www1.va.gov/aavaresearch/page.cfm?pg=3"

VA Human Studies IRB Coordinator = Douglas Feldman (734) 761-7951 e-mail = doug.feldman@med.va.gov
R&D FAX = (734) 761-7693 VA Research Web Site = http://www1.va.gov/aavaresearch

Sincerely,

Carol Kauffman, M.D.
VA Human Studies Chairperson