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Pepperdine University  
Graduate School of Education and Psychology

PARENTAL SUBSTANCE ABUSE AND ADULTHOOD MORTALITY IN  
TREATMENT-SEEKING MALE VETERANS WITH COMBAT-RELATED PTSD

A clinical dissertation submitted in partial  
satisfaction of the requirements for the degree of  
Doctor of Psychology

by

Kerri E. Schutz

July, 2011

David Foy, Ph.D.-Dissertation Chair Person

This clinical dissertation, written by

Kerri Elizabeth Schutz

under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF PSYCHOLOGY

Doctoral Committee:

David Foy, Ph.D., Chairperson

Kent Drescher, Ph.D.

Robert de Mayo, Ph.D, ABPP

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## DEDICATION

This dissertation is dedicated to the men and women who have served in the United States Military, who make countless sacrifices to protect our freedom.

## ACKNOWLEDGMENTS

I would like to express gratitude to the many people who have guided me through the doctoral program and dissertation process. I would like to thank my committee, Drs. Foy, deMayo, and Drescher for taking an active interest in this project. I am so grateful for the opportunity to work with such an amazing group of faculty and students on projects that are dedicated to understanding an extraordinary population.

I do not know what I would have done without my Aces and Eights! Carrie and Anna, you were the best teammates anyone could have asked for. During the times of confusion, you helped me find clarity and always made me laugh. I'm so glad I got to share this crazy adventure with you. Katy, Lea, Sarah, and Shana, you were incredible mentors. I am so thankful that I had the opportunity to learn from all of you. Your support and guidance has been invaluable.

Most of all, I would like to thank my parents and brother. I would not have made it to or through this program without each of you. I am amazingly lucky to have people in my life who encourage me to achieve my goals and stand behind me, especially when things are at their most difficult.



## VITA

**Kerri E. Schutz, M.A.****EDUCATION**

---

**Pepperdine University, Los Angeles, CA***Doctoral Degree in Clinical Psychology (Psy.D.), Expected Spring 2011*

- APA- accredited program
- Multicultural Research and Training Lab
- Existential Humanistic Training Lab
- Pepperdine Colleagues Grant Scholarship (2007-present)
- **Clinical Competency Exam:** Passed June, 2009
- **Assessment Competency Exam:** Passed July, 2009
- **Dissertation:** Parental Substance Abuse and Adulthood Mortality in Treatment-Seeking Male Veterans with Combat-Related PTSD
  - **Chair:** David W. Foy, Ph.D.
  - **Preliminary Defense Completed:** May 26, 2009
  - **Final Defense Completed:** December 1, 2010
  - **Dissertation Questions:**
    - Controlling for personal substance dependence, does parental substance abuse predict mortality in this sample of veterans with PTSD?
    - Controlling for personal substance dependence, what is the relationship between parental substance abuse and likelihood of behavioral or natural cause of death?

**Pepperdine University, Los Angeles, CA***Master of Arts in Psychology, June 2007***University of Southern California, Los Angeles, CA***Bachelor of Arts in Psychology, May 2004**Minor in Substance Abuse Prevention (Keck School of Medicine)***CLINICAL EXPERIENCE**

---

**Atascadero State Hospital, Atascadero, CA***Clinical Psychology Intern (M. Tandy, Ph.D, E. Rosten, Ph.D)*

August 2010-July 2011

- Attend weekly didactic treatment seminars in Diversity, Law and Ethics, and Forensics
- Completed malingering tutorial
- Completed training in risk assessment, including reliability training in the Hare Psychopathy Checklist-Revised
- Facilitated long-term individual therapy with 4 individuals
- Legal commitments include: incompetent to stand trial, mentally disordered offender, mentally ill inmate, not guilty by reason of insanity

*Admissions Rotation (G. Renzaglia, Ph.D.)*

August 2010-November 2010

- Completed integrated assessments-psychology section (IAPS) for individuals experiencing acute symptoms
- Conducted cognitive screenings
- Screened for malingering
- Collaborated with interdisciplinary team to make appropriate treatment recommendations and provided feedback to individuals regarding their treatment objectives and progress
- Prepared individuals to successfully pass R-CAI, mock trial, clinical staffing and forensic staffing

- Administered Revised-Competency Assessment Instrument (R-CAI) to assess for restoration to competency
- Facilitated staying safe, anger management, and sexual offender treatment groups

*Treatment Rotation (K. Lowry, Ph.D.)*

December 2010-March 2011

- Complete Axis I and II diagnostic clarifications
- Complete risk assessments including PCL-R
- Participate in interdisciplinary treatment planning for individuals under the mentally disordered offender commitment
- Discharge plan for individuals who have been decertified as mentally disordered offenders or restored to sanity and are preparing for release into the community
- Co-facilitate anger management, problem solving, physical wellness and treatment planning groups
- Treatment approaches include cognitive behavioral techniques and acceptance and commitment therapy

*Forensic Rotation (B. Yakush, Psy.D.)*

December 2010-July 2011

- Complete assessments for mentally disordered offender certification and decertification
- Evaluate individuals for restoration to trial competency
- Gain education regarding state and federal mental health law
- Participate in mock trial to defend assessments to gain training in expert witness testimony

**VA Long Beach Healthcare System, Long Beach, CA**

*Clinical Psychology Pre-Intern*

- Attended bi-weekly Posttraumatic Stress Disorder didactic treatment seminars which include education on Cognitive Processing Therapy and Prolonged Exposure

*Spinal Cord Injury (D. Kerner, Ph.D.)*

September 2009-February 2010

- Provided psychological intervention to veterans with acute spinal cord injury and veterans with spinal cord injuries who need ongoing care
- Interventions addressed presenting problems related to spinal cord injury such as adjustment, pain management, depression, anxiety, posttraumatic stress disorder, and sexual concerns
- Assessed cognitive functioning and mental status of veterans to identify potential barriers to rehabilitation
- Conducted psychoeducation regarding importance of rehabilitation program compliance
- Met weekly with the interdisciplinary team to ensure veterans are being provided with the most comprehensive care, which often requires providing occasional education to medical staff with regard to enhancing veterans' motivation to participate in rehabilitation activities

*PTSD and Anger Management (S. Houston, Ph.D.)*

February 2010-August 2010

- Conducted anger management groups with self-referred and court-mandated veterans diagnosed with PTSD
- Conducted combat trauma groups with WWII, Korea, Vietnam, and OIF/OEF veterans with combat-related PTSD
- Groups are tailored to group members such as medics, corpsmen, and recently discharged veterans
- Provided individual weekly therapy to five veterans with PTSD and anger management difficulty

**Metropolitan State Hospital, Norwalk, CA**

*Pre-Doctoral Practicum in Assessment and Therapy*  
(K. Hartley, Ph.D.)

September 2008-August 2009

- Conducted cognitive screenings and wrote integrated interpretations to make recommendations regarding future testing and treatment planning of individuals who are Incompetent to Stand Trial or Guilty, but Not Guilty by Reason of Insanity
- Conducted neuropsychological assessment to identify strengths and weaknesses and made recommendations regarding how to assist the treatment team restore the individual to competency and rehabilitate mentally ill offenders
- Conducted malingering assessments to address issues regarding secondary gain and feigning of psychological symptoms
- Conducted diagnostic clarifications to assist the treatment teams in conceptualizing symptom presentation and make recommendations for intervention
- Met with civilly committed clients for individual therapy
- Co-facilitated Dialectical-Behavioral Therapy (DBT) Skills Group
- Modified treatment protocol to suit individuals appropriately and promote effective intervention
- Attended weekly supervision which included case presentation, forensic didactics, instrument training such as the SCID, SIRS, PCL-R, and malingering assessment protocol
- Diagnoses of individuals included schizophrenia, schizoaffective disorder, antisocial personality disorder, bipolar disorder, posttraumatic stress disorder, borderline personality disorder, and delusional disorder

**Pepperdine University, Los Angeles, CA**

Pepperdine Psychological and Educational Clinic

*Pre-Doctoral Practicum Therapist (A. Aviera, Ph.D.)*

September 2007-July 2010

- Conducted initial assessments with clients to determine if services offered were appropriate
- Assessed for risk and suicide
- Evaluated therapeutic needs and constructed treatment plans for a variety of diagnoses, including substance use, mood, anxiety, and chronic pain disorders
- Prepared case presentations for clinic conference
- Conducted individual and couples therapy
- Provided coverage of after hours emergency pager
- Participated in weekly supervision

**Pacific Clinics, Pasadena, CA**

Hudson Family Services

*Substance Abuse Counselor (E. Lei, M.F.T.)*

October 2006-August 2007

- Conducted initial assessment, evaluated needs such as coping mechanisms, competing behavior, social support, financial support
- Facilitated group treatment as primary counselor in skills-building, process, and interpersonal communication groups
- Implemented crisis intervention and risk assessment regarding relapse prevention; educated about HIV/AIDS and relationship with alcohol and drug use
- Established treatment plans in order to decrease risk of relapse and increase social and occupational functioning
- Maintained all charts and paperwork in accordance with Los Angeles County Department of Mental Health guidelines
- Clients in this community mental health setting were all diagnosed with a substance abuse or dependence disorder as well as a major Axis I disorder such as bipolar, major depressive, and schizoaffective disorders and schizophrenia

Adult Outpatient Program

April 2005-September 2006

*Case Manager (L. Hughes, Ph.D.)*

- Collaborated with therapists and medical doctors in developing assessments of client needs, strengths, resources, and risk
- Assisted with client treatment planning and service plans, collaborated with client on goal setting and treatment outcomes, educated clients on program requirements
- Maintained all charts and paperwork in accordance with Los Angeles County Department of Mental Health guidelines
- Accessed community resources including other programs within the agency for housing and transportation services
- Provided appropriate referrals to individual therapy and other wellness services
- Provided crisis intervention and risk assessment
- Performed regular internal chart audits
- Facilitated group therapy for Social Skills Training and Men's Groups

**RESEARCH EXPERIENCE**

---

**Pepperdine University, Graduate School of Education and Psychology, Los Angeles, CA***Research Assistant (D. Foy, Ph.D.)*

May 2008-present

- Conducted research on veterans with chronic combat-related PTSD
- Reviewed and summarized literature pertinent to current research topics including Adverse Childhood Experience, posttraumatic stress disorder, religious coping, depression, and substance abuse
- Assisted principal investigators with organization, analysis, and interpretation of quantitative and qualitative data
- Collaborated with Kent Drescher, Ph.D. and David Foy, Ph.D. on further research needs

**Pepperdine University, Graduate School of Education and Psychology, Los Angeles, CA***Trauma and Dissertation Lab Member (D. Foy, Ph.D.)*

January 2008-present

- Assisted David Foy, Ph.D. and Kent Drescher, Ph.D. with trauma research and review of publishable material
- Offered attention and feedback to projects being conducted within the lab
- Assisted lab members in preparing research questions and hypotheses
- Acted as *Lab Manager* from June 2009 to June 2010

**Childrens Hospital Los Angeles, Los Angeles, CA***Research Assistant (J. Gold, Ph.D.)*

May 2003-June 2004

- Assented children ages 8-12 and consented their parents after recruiting them for the study which presented Virtual Reality technology as a method of pain distraction during venipuncture
- Administered test battery including Test of Nonverbal Intelligence, Wong-Baker FACES Pain Rating Scale, and interviews before and after the experiment to measure anxiety; prepared children for experimental portion of study
- Organized and reported data; ensured all IRB protocol was observed for the duration of the experiment

**University of Southern California, Los Angeles, CA***Research Assistant (A. Rizzo, Ph.D.)*

May 2001-September 2001

- Assisted the principal investigator with his research project assessing the efficacy of Virtual Reality in assessing symptoms of attention deficit hyperactivity disorder
- Prepared the experimental Virtual Reality equipment including computer program and head mount
- Administered the experimental portion of the study to children ages 8-12, by giving them proper instructions

## **SUPERVISORY EXPERIENCE**

---

**Pepperdine University**, Los Angeles, CA

Pepperdine Psychological and Educational Clinic

*Peer Supervisor (A. Aviera, Ph.D.)*

September 2009-July 2010

- Meet during weekly individual supervision with a first-year student who is beginning her therapy training and two second-year students who are continuing to see clients at the West Los Angeles Clinic
- Assist with training students to develop therapeutic skills, discuss process issues, and introduce formal therapeutic intervention skills when appropriate for students to implement in therapy
- Each student manages up to six individual clients or couples
- Meet weekly with licensed supervisor for supervisory training dyads and didactics

## **PRESENTATIONS**

---

**Schutz, K.**, Kelly, C., Leshner, A., Jakle, K., Drescher, K., & Foy, D. (2009, November). Adverse childhood experiences and religious coping styles in veterans with combat-related PTSD. Poster session presented at the 25<sup>th</sup> annual meeting of ISTSS, Atlanta, GA.

**Schutz, K.**, Didion, L., Burgoyne, M., Casas, E., Drescher, K., & Foy, D. (2008, November). Aggression and forgiveness. Poster session presented at the 24<sup>th</sup> annual meeting of ISTSS, Chicago, IL.

**Schutz, K.**, Parker, F., Swanson, B., & Yu, G. (2008, June). Major Depressive Disorder, Bipolar Disorder, Schizophrenia, and Post-traumatic Stress Disorder. Presentation given at the Union Rescue Mission in Los Angeles, CA.

## **PUBLICATIONS**

---

Allen, R., Buckwalter, J., Gold, J., Mendelowitz, E., Reger, G., Rizzo, A., & **Schutz, K.** (2004). A controlled study of the effectiveness of virtual reality to reduce children's pain during venipuncture. *CyberPsychology & Behavior*, 7, 285.

Drescher, K.D., Foy, D.W., Litz, B., Leshner, A.F., Kelly, C.M., & **Schutz, K.** (in press). A qualitative exploration of moral injury among mental health and religious professionals. *Traumatology: An International Journal*.

Leshner, A., **Schutz, K.**, Kelly, C., Foy, D., & Drescher, K. (2010). Adverse childhood experiences and religious coping styles in veterans with combat-related PTSD. Manuscript in preparation.

Foy, D., **Schutz, K.**, Kelly, C., Leshner, A. (in press). Retraumatization. *Encyclopedia of Trauma*.

## **TEACHING EXPERIENCE**

---

**Pepperdine University**, Los Angeles, CA

Substance Abuse Evaluation and Treatment

*Teaching Assistant (Professor D.W. Foy, Ph.D.)*

Summer, Fall 2009

Clinical Evaluation and Research Methods

*Teaching Assistant (Professor D.W. Foy, Ph.D.)*

Summer, Fall 2009

Behavioral Assessment and Intervention

*Teaching Assistant (Professor D.W. Foy, Ph.D.)*

Summer 2009

Principles and Theories of Learning  
 Teaching Assistant (Professor S. Hall, J.D., Ph.D.)

Spring 2007

### **EDITING EXPERIENCE**

---

**Pepperdine University, Los Angeles, CA**

Dissertation Support

June 2008-present

*Graduate Assistant (Regina Meister)*

- Reviewed dissertations from the Graduate School of Education and Psychology for APA format and Pepperdine publication guidelines
- Assisted students with preparing their manuscripts for publication

### **CONTINUING EDUCATION AND CLINICAL TRAINING**

---

**International Society for Traumatic Stress Studies Annual Conference, Atlanta, GA** November 2009

*Traumatic Stress Disorders: Towards DSM-V and ICD-11*

- Poster presentation

**International Society for Traumatic Stress Studies Annual Conference, Chicago, IL** November 2008

*Terror and Its Aftermath*

- Poster presentation

**James S. Grotstein Annual Conference, Los Angeles, CA**

February 2008

*Attachment and the Infantile Neurosis: Their Impact on the Therapeutic Process and Technique*

### **PROFESSIONAL AFFILIATIONS**

---

American Psychological Association of Graduate Students

*Campus Representative*

January 2009-September 2009

American Psychological Association, Student Affiliate

International Society for Traumatic Stress Studies

Psi Chi

## ABSTRACT

Vietnam veterans with posttraumatic stress disorder (PTSD) are at risk for negative health outcomes, including mortality and death. Recently, research has found that there are seven adverse childhood experiences (ACEs) that are also associated with mortality. Further, these ACEs have been found to put Vietnam veterans with PTSD at increased risk of mortality. Although there is research to suggest a significant relationship between the ACEs as a group and health-related outcomes, there is limited research studying the relationship between health outcomes and individual ACEs. Specifically, there is no known research examining the relationship between Parental Substance Abuse (PSA) and these outcomes, specifically vital status. The current study examines the relationship between PSA and vital status in a large inpatient sample of veterans with chronic combat-related PTSD. Upon entrance to residential PTSD treatment, 1866 male veterans completed measures of household dysfunction, depression, and personal substance abuse. Correlational analyses revealed a significant relationship between personal substance dependence and PSA. Analyses showed no significant relationship between PSA and vital status when accounting for personal substance dependence. The importance of addressing PSA and personal substance dependence among veterans receiving inpatient PTSD treatment is discussed.

## Introduction

Recent posttraumatic stress disorder (PTSD) research has been focused on the psychological and psychosocial associated with the disorder. However, research also suggests the disorder may be associated with particular health outcomes including increased risk of mortality (Schafer, 2007). Further, studies have found Vietnam-theater veterans are at an elevated risk to die from behavioral causes (Boscarino, 2006b; Crawford, Drescher, & Rosen, 2009). These veterans have also been found to be at increased risk for nonfatal strokes, heart attacks, seek health care less frequently, and develop high cholesterol and obesity (Buckley, Mozley, Bedard, & Dewulf, 2004; David, Woodward, Esquenazi, & Mellman, 2004).

In addition to studying the relationship between PTSD and health outcomes (including death), investigators have begun to evaluate early childhood experiences and their relationship with mortality in the general population (i.e. Anda et al., 2008; Felitti et al., 1998). Mental health researchers now hypothesize there are seven particular risk factors known as adverse childhood experiences (ACEs), which may contribute to mortality in individuals who have experienced them in childhood (Anda et al., 1999; Edwards, Holden, Felitti, & Anda, 2003). Findings in this area have found ACEs have a relationship with particular health conditions or complications arising from high-risk lifestyle factors such as substance use, high-risk sexual behavior, and physical inactivity (Dube, Anda, Felitti, Chapman et al., 2001; Dube, Felitti, Dong, Giles, & Anda, 2003b; Cabrera, Hoge, Bliese, Castro, & Messer, 2007; Felitti et al., 1998). The correlation between ACEs and health-related problems has also been established in the Vietnam veteran population (Cabrera et al., 2007).



Significant research findings have discovered the interrelatedness of the ACEs and described their additive effects (Anda et al., 1999; Edwards et al., 2003). However, they have not yet aimed to describe potential relationships between single ACEs and mortality. It is estimated that 25% of children under age 18 grow up in a household where one or both parents abuses or is dependent on alcohol (Grant, 2000). Further, studies have estimated overall household substance abuse to be between 11% and 28% (Gance-Cleveland, Mays, & Steffen, 2007; Dong et al., 2003). The present study aims to examine the relationship between one of these factors, parental substance abuse (PSA), and its potential individual relationship with mortality in a sample of treatment seeking Vietnam veterans with PTSD.

Although there is limited research examining effects of individual ACEs on health status and mortality in any population, some researchers have examined the effects of PSA on development of mental health disorders and other health conditions (Felitti et al., 1998). Children who experience PSA during their childhood were found to be at risk for developing anxiety disorders such as PTSD, depression, suicidality, risk taking behaviors, personal substance abuse, substance-related health complications and violent death (Christoffersen & Soothill, 2003; Hanson et al., 2006; Harmer, Sanderson, & Mertin, 1998; Ohannessian & Hesselbrock, 2008; Pagano et al., 2007; VanDeMark et al., 2005; Young, Boles, & Otero, 2007).

ACE has been linked to mental illness in general, specifically depression (Anda et al., 2002; Chapman et al., 2004) and suicide attempts and depression (Dube, Anda, Felitti, Croft et al., 2001). There appears to be a dose-response relationship between the number of ACEs and likelihood of developing depression.

Another significant correlate of ACEs is substance abuse. Research has consistently found a significant dose-response relationship between number of ACEs and likelihood of personal substance abuse (Dube et al., 2002; Dube et al., 2003).

### **Summary**

Research suggests the presence of significant relationships between PTSD in veterans with combat trauma and mortality. ACEs have also been found to have a significant relationship with mortality and health-related outcomes. However, research has not yet been conducted to study the potential independent relationship between PSA and mortality in veterans with combat-related PTSD. This study will attempt to examine the ACE variable of PSA and describe its relationship with PTSD and mortality in a sample of deceased veterans who were seeking outpatient treatment for their combat-related PTSD symptoms. The research questions and hypotheses are as follows:

1. Controlling for depression and personal alcohol dependence, does PSA predict mortality in this sample of veterans with PTSD?

Hypothesis: Veterans with PTSD who have a history of PSA will have a higher rate of mortality than veterans without a history of PSA.

2. Controlling for depression and personal substance dependence, what is the relationship between PSA and likelihood of behavioral or natural cause of death?

Hypothesis: Veterans with a history of PSA are more likely to have a behavioral cause of death than veterans without a history of PSA.

## **Method**

### **Participants**

The 1,866 participants in this study were all male Vietnam veterans in the U.S. military who sought inpatient treatment for combat-related PTSD. The sample contained 268 deceased and 1598 living participants when death records were last obtained and rates were tabulated. The participants sought treatment through the U.S. Department of Veterans Affairs and were admitted to one of the National Center for Posttraumatic Stress Disorder (NC-PTSD) facilities between January 1, 1990 and December 31, 1998. The programs provided 60-day inpatient treatment for PTSD. Inclusion criteria for the study were substance abstinence for at least 15 days prior to admission, lack of a severe medical condition, and lack of active psychosis.

### **Procedure**

The information from this archival data set was collected with the intention to study mortality in United States military combat veterans. The research protocol received Institutional Review Board (IRB) approval from Stanford University and the Department of Veterans Affairs. The de-identified data was accessed after written permission was obtained from the participants by the study's principal investigator, Kent D. Drescher, Ph.D. All participants were administered the Structured Clinical Interview for the DSM-III or the DSM-IV (SCID) to determine PTSD status.

### **Variables**

**Vital status.** The data set used for the current study was the same set used by Schafer (2007) to describe rate and cause of death in veterans with PTSD. He obtained vital status and date of death through an internet search of the Social Security Death Master

File using the participants' social security numbers. After the participants were grouped according to living or deceased status, requests were made to the national Death Index (NDI) to obtain the causes of death, which appeared in the form of an ICD-9 or ICD-10 code.

**Cause of death.** The study separated deceased participants into two groups: those who died from behavioral causes and those who died from natural causes. The participants were classified in the behavioral cause group if they died from conditions that are associated with high-risk behavior for which behavioral health intervention is available. Deaths linked to substance abuse (e.g. cirrhosis or overdose) and conditions resulting from high risk intravenous substance abuse (HIV, Hepatitis C) were classified as behavioral. Deaths that resulted from external causes such as automobile accidents and homicide were also classified as behavioral. Given the broad range of behavioral death, four groups were created: (a) accidents (motorcycle, automobile, truck, bus; as pedestrian, passenger, or driver); (b) substance related, where drugs or alcohol were noted on the death certificate to be a precipitator (such as overdose, cirrhosis, drowning resulting from substance use, but not including tobacco or cigarette-smoking related death); (c) high-risk intravenous behavior resulting in HIV, Hepatitis C, or any other blood-borne infection resulting from IV substance use and high-risk sexual behavior; (d) intentional death (suicide, homicide). Tobacco related illnesses and deaths and deaths related to diabetes will not be included in behavioral causes of death because insufficient data is available with regard to smoking, family health, diet, and exercise histories.

Natural causes of death included all deaths that are not included in the behavioral causes. These causes include: (a) cancers, (b) cardiovascular disease, (c) respiratory

failure, and (d) diabetes. In addition, unknown causes of death are included in the natural cause group.

**Parental substance abuse.** Data regarding parental substance abuse was obtained from a background questionnaire that was filled out by the participants at the time of their admission to the PTSD treatment program. Participants were given the opportunity to answer *yes* or *no* to the question: *Did either of your parents abuse drugs/alcohol?*

**Potential covariates.** Severity of depression was assessed as a continuous variable from the Beck Depression Inventory (BDI). Personal alcohol and substance dependence were assessed from the Structured Clinical Interview for the DSM-IV (SCID-IV). Participants were classified as having a history of personal substance dependence if they met criteria for alcohol dependence, other substance dependence, or both. Both items were administered at the time of intake into the PTSD treatment program.

## **Instruments**

**Background Questionnaire.** This questionnaire was used to obtain background and demographic data from the participants at the time of their entry into the PTSD treatment program. Demographic variables such as age at treatment, date of birth, and ethnicity were gathered. In addition, the proposed study's main variable (PSA) was obtained from one of the additional questions on the questionnaire, described previously.

**Beck Depression Inventory (BDI).** Beck, Ward, Mendelson, Mock, & Erbaugh, (1961) developed this 21-symptom self-report inventory to measure the presence and severity of affective, cognitive, and somatic symptoms of depression. Each item is

scored on a 4-point Likert scale (0-3). The minimum score is 0 and the maximum score is 63.

**Structured Clinical Interview for the DSM-IV (SCID-IV).** Alcohol and other substance dependence was determined by the SCID-IV. All participants were administered this interview by a clinician and met criteria for dependence in order to meet criteria for personal substance dependence in this study. The SCID-IV is a semi-structured interview that can be used to aid in diagnosis of psychiatric disorders. In addition to specific diagnostic criteria, the interview addresses treatment history and background history. This measure has demonstrated adequate reliability in axis I diagnosis in general (Segal, Hersen, & Van Hasselt, 1994), and good to excellent validity in substance-related diagnosis (Kranzler, Kadden, Babor, Tennen, & Rounsaville, 1996).

### **Data Analysis**

Data analyses were conducted using the Predictive Analytics SoftWare (PASW) 17.0. After the data was cleaned, it was examined to ensure it is normally distributed and free from outliers. Study and demographic data was described. Chi-square analysis was used to determine if substance dependence differed significantly between mortality and cause of death. ANOVA analysis was used to determine if depression differed significantly between mortality and cause of death groups.

Further Chi Square analyses examined if there is a relationship between PSA and mortality. Personal substance dependence was found to have a relationship with mortality, therefore it was added in as a layer in the chi-square analyses for the study variables.

## **Results**

### **General Characteristics of the Sample**

Demographic characteristics of the sample are displayed in Appendix B. The sample consisted of 1866 male combat veterans with PTSD (268 deceased and 1598 living). Their average age at the time of intake to the residential treatment program was 47 years with a range of 21 to 73 years. The majority (66%) of the participants were Caucasian, 13.3% were Hispanic, and 11.7% were African-American. A majority of the sample (62.9%) had over 12 years of education; however, 699 cases were missing information on the demographic questionnaire.

The sample consisted primarily of veterans who served in the Army (65.3%), with 24.3% serving in the Marine Corps, 7.1% in the Navy, and 3.3% in the Air Force. Regarding marital status, 43% were divorced, 33.9% were married or had a domestic partner, 11.9% were separated, and 8.9% were never married.

The participants' responses to questions assessing for PSA, personal substance dependence and depression are displayed in Table 2. Forty-two percent of the sample endorsed PSA, 67.7% met SCID-IV criteria for personal alcohol dependence, 49.9 percent met SCID-IV criteria for another substance dependence disorder (other than alcohol), and 31.6% met criteria for depression. In order to code for overall personal substance dependence, participants were classified as having a history if they met criteria for alcohol dependence, other substance dependence, or both.

### **Relationships between Study Variables**

ANOVA analysis was used to assess the relationship between depression severity, vital status, and cause of death. Results revealed that depression did not have a

significant relationship with vital status or cause of death in this sample. A chi-square analysis was conducted to examine the relationship between personal substance dependence, vital status, and cause of death. Eighty-eight percent of the deceased veterans endorsed a history of substance dependence, while 76% of living veterans endorsed a history of substance dependence. Analysis indicates a significant positive relationship between personal substance dependence and vital status. Veterans with a personal substance dependence history were more likely to be deceased than those veterans who did not have a personal substance dependence history,  $X^2(1, N=1402)=14.64, p=.001$ .

### **Hypotheses**

**PSA and vital status.** A chi-square analysis was conducted to examine the relationship between PSA and vital status. Since a significant relationship was found between personal substance dependence and vital status, separate analyses were conducted to determine if PSA and vital status had a significant relationship independent of personal substance dependence history. Twenty-eight percent of the deceased veterans without a history of personal substance dependence endorsed a history of PSA. Of the living veterans without a history of personal substance dependence, 35% endorsed a history of PSA. Analyses indicate there was no significant relationship between PSA and vital status when accounting for personal substance dependence. For those veterans who did not meet criteria for personal substance dependence, a history of PSA did not have a relationship with vital status  $X^2(1, N=276)=.376, p=.540$ . Of the deceased veterans who endorsed a history of personal substance dependence, 47% also endorsed a history of PSA. Forty-five percent of the living veterans who endorsed a history of personal



substance dependence also endorsed a history of PSA. Similarly, in the sample of veterans who met criteria for personal substance dependence, a history of PSA did not have a relationship with vital status  $X^2(1, N=972)=.116, p=.733$ .

**PSA and cause of death.** Chi-square analysis indicated there is no significant relationship between PSA and cause of death. Forty three percent of the veterans with a history of PSA died from a behavior-related death. Forty-seven percent of the veterans who had a history of PSA died from a natural causes-related death. Analyses indicate there is no significant relationship between PSA and cause of death. In this sample, Veterans who were deceased were not more likely to die from behavioral causes than natural causes  $X^2(2, N= 175)=1.52, p=.468$ .

## Discussion

A number of studies have found significant relationships between experiences in early childhood and physical health outcomes, (Dube, Anda, Felitti, Chapman et al., 2001; Dube et al., 2003b; Cabrera et al., 2007; Felitti et al., 1998). Since the body of literature was last reviewed, more research has been published citing significant relationships between ACEs and health outcomes, such as lung cancer (Brown et al., 2010). In addition to the research describing this relationship, many studies suggest the additive effect of experiencing more than one ACE (Anda et al., 1999; Edwards et al., 2003) and developing substance abuse disorders, depression, and dying from behaviorally associated causes (Pagano et al., 2007). More recent research also supports these findings, showing that the more ACEs a person reported, the higher risk they are for certain health-related outcomes (Chartier, Walker, & Naimark, 2010).

PTSD has also been shown to be related to many health-related outcomes including early and behavioral death in veteran populations. These findings are particularly concerning for veterans, who have been found to have high rates of death from behavioral causes (e.g. Schafer, 2007; Boscarino, 2008; Crawford, Drescher, & Rosen, 2009). PSA has been shown to be a common co-occurring factor when more than one ACE has been endorsed. Although the recent trend in ACE research has been to describe additive effects on various populations, this study was focused on the singular relationship between PSA, vital status, and cause of death in a sample of veterans with chronic combat-related PTSD.

The two primary hypotheses for this study were not supported. One of the most likely explanations for lack of a significant relationship between PSA and vital status is

the presence of a significant relationship between PSA and personal substance dependence in this population. Given the high rate of personal substance dependence and the relationship it has with vital status, it would be difficult to determine if PSA alone was a significant enough factor to be correlated with vital status. Further, recent research indicates personal substance dependence has a significant relationship with many causes of death in the veteran population (Crawford et al., 2009).

The results from analysis of the relationship between PSA and cause of death were also insignificant. Again, the significant relationship between PSA and personal substance dependence was significant, therefore PSA could not be found as a significant correlate on its own. Further, the sample size for the deceased group of veterans was likely too small to allow for adequate power for hypothesis testing, especially in the subsample of veterans without a history of personal substance dependence.

Although PSA was not found to be significantly associated with vital status or early death as a single variable, the finding that PSA was significantly related to development of personal substance dependence disorders in this veteran sample is consistent with past research describing similar relationships (e.g. Anda et al., 2002).

### **Limitations**

PSA status was collected via retrospective self-report. It was determined by a singular question on a demographic questionnaire that was completed at the time veterans entered residential treatment. This question asked the participant to report whether their parents abused drugs or alcohol. There were no uniform criteria listed to assist the participants in determining if their parents abused substances. Therefore, the participants answered the item based on their own assessment of what constitutes abuse. Further, the

answer to this question would depend on if they recalled their parents' substance abuse behaviors. Although unlikely, some participants' parents may have abused drugs or alcohol but successfully hid overt behaviors from their children.

The clinically significant correlation between personal substance dependence and PSA is also a limitation of this study. This relationship makes it difficult to determine if PSA has an independent relationship with vital status.

Again, relatively small sample size for the deceased group of veterans likely limited power for hypothesis testing, especially in the subsample of veterans without a history of personal substance dependence. The results may have been more meaningful if the sample size of both living and deceased groups were relatively even.

### **Clinical Implications for Treatment**

The significant relationship found in this sample between PSA and personal substance dependence supports that suggest substance abuse behaviors may be intergenerationally transmitted (Anda et al., 2002; Dube et al., 2002). Since the relationship has been established, veteran populations may benefit from a screening upon discharge to determine if individuals have family histories of substance abuse. Based on the individual's history, treatment programs may emphasize development of adaptive coping and education about substance abuse to those who are at risk. Although some veterans who have a history PSA or personal substance abuse dependence are ambivalent about participating in prevention programs or treatment, the VA may adopt a transtheoretical approach. Groups may be constructed based on stage of change, during which motivational interviewing techniques are utilized so they may develop skills based on their own perceived risk of developing substance dependence or medical problems

associated with substance dependence (DiClemente & Prochaska, 1998). Individuals who have already developed substance abuse as coping for symptoms of PTSD may also benefit from education about how these behaviors are learned, normalize their experience, and help them develop alternative coping. For those veterans who have a family history of substance abuse and have children of their own, treatment programs may also want to develop parenting education with this in mind to reduce their children's risk of developing substance abuse disorders.

Given the additive effects of ACE found in the literature, treatment may benefit from addressing the additive effects of ACE in this population. The treatment for trauma in the veteran population focuses largely on combat-related PTSD and trauma symptoms. However, group and individual treatment addressing the entire childhood experience of a veteran may help increase insight and adaptive coping for symptoms related specifically to childhood issues.

### **Recommendations for Future Research**

Although the relationship between personal substance dependence and PSA may remain significant, future research may benefit from studying PSA as an independent ACE for exploratory purposes. In order to meet that objective, studies may benefit from the development of a more detailed questionnaire assessing PSA, possibly including sections that ask the participant to answer questions about which substances were used, how often, if both parents were using, if they ever used substances with their parents, etc.

Future research will benefit from studies designed to elucidate the relationship between PSA and other ACEs in veterans with chronic combat PTSD. Understanding the

ACEs independently and their unique relationships with each other may clarify particular combinations of abuse that are significant to health-related outcomes.

Continued research exploring the impact of ACE, health-related outcomes, and mortality in Veterans with combat-related PTSD will continue to help clinicians understand how childhood experiences shape interpretation of violence in the warzone. However, continued research studying the presentation and outcome of ACE in the general population will also continue to be invaluable. As the healthcare industry changes, it will be important to make a case for prevention and early intervention for psychological symptoms that may arise from these environmental experiences.

## REFERENCES

- Anda, R.F., Brown, D.W., Dube, S.R., Bremner, J.D., Felitti, V.J., & Giles, W.H. (2008). Adverse childhood experiences and chronic obstructive pulmonary diseases in adults. *American Journal of Preventive Medicine*, 34(5), 396-403.
- Anda, R., Croft, J., Felitti, V., Nordenberg, D., Giles, W., Williamson, D., & Giovino, G. (1999). Adverse childhood experiences and smoking during adolescence and adulthood. *Journal of the American Medical Association*, 282(17), 1652-1658.
- Anda, R.F., Whitfield, C.L., Felitti, V.J., Chapman, D., Edwards, V.J. Dube, S.R.,... Williamson D.F. (2002). Adverse childhood experiences, alcoholic parents, and later risk of alcoholism and depression. *Psychiatric Services*, 53(8), 1001-1009.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561-571.
- Boscarino, J. (2006b). External cause mortality after psychologic trauma: The effects of stress exposure and predisposition. *Comprehensive Psychiatry*, 47, 503-514.
- Boscarino, J. (2008). A prospective study of PTSD and early-age heart disease mortality among Vietnam veterans: Implications for surveillance and prevention. *Psychosomatic Medicine*, 70, 668-676.
- Brown, D.W., Anda, R.F., Felitti, V.J., Malarcher, A.M., Croft, J.B., & Giles, W.H. (2010). Adverse childhood experiences are associated with the risk of lung cancer: A prospective cohort study. *BMC Public Health*, 10, 20-32.
- Buckley, T., Mozley, S., Bedard, M., & Dewulf, A. (2004). Preventive health behaviors, health-risk behaviors, physical morbidity, and health-related role functioning impairment in veterans with post-traumatic stress disorder. *Military Medicine*, 169(7), 536-540.
- Cabrera, O.A., Hoge, C.W., Bliese, P.D., Castro, C.A., & Messer, S.C. (2007). Childhood adversity and combat as predictors of depression and post-traumatic stress in deployed troops. *American Journal of Preventative Medicine*, 33(2) 77-82.
- Chapman, D., Whitfield, C., Felitti, V., Dube, S., Edwards, V., & Anda, R. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders*, 82, 217-225.
- Chartier, M.J., Walker, J.R., & Naimark, B. (2010). Separate and cumulative effects of adverse childhood experiences in predicting adult health and health care utilization. *Child Abuse & Neglect*, 34, 454-464.

- Christoffersen, M., & Soothill, K. (2003). The long-term consequences of parental alcohol abuse: A cohort study of children in Denmark. *Journal of Substance Abuse Treatment, 25*, 107-116.
- Crawford, E., Drescher, K., & Rosen, C. (2009). Predicting mortality in veterans with posttraumatic stress disorder 30 years after Vietnam. *Journal of Nervous and Mental Disease, 197*(4), 260-265.
- David, D., Woodward, C., Esquenazi, J., & Mellman, T. (2004). Comparison of comorbid physical illnesses among veterans with PTSD and veterans with alcohol dependence. *Psychiatric Services, 55*(1), 82-85.
- DiClemente, C., & Prochaska, J. (1998). Toward a comprehensive transtheoretical model of change. In W. Miller & N. Heather (Eds.), *Treating Addictive behaviors* (2<sup>nd</sup> ed.). New York, NY: Springer.
- Dong, M., Anda, R.F., Felitti, V.J., Dube, S.R., Williamson, D.F., Thompson, T.J., ... Giles, W.H. (2004). The interrelatedness of multiple forms of childhood abuse, neglect, and household dysfunction. *Child Abuse and Neglect, 28*, 771-784.
- Dube, S., Anda, R., Felitti, V., Croft, J., Edwards, V., & Giles, W. (2001). Growing up with parental alcohol abuse: exposure to childhood abuse, neglect, and household dysfunction. *Child Abuse and Neglect, 25*, 1627-1640.
- Dube, S., Anda, R., Felitti, V., Chapman, D., Williamson, D., & Giles, W. (2001). Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the life span. *Journal of the American Medical Association, 286*(24), 3089-3096
- Dube, S., Anda, R., Felitti, V., Edwards, V., & Croft, J. (2002). Adverse childhood experiences and personal alcohol abuse as an adult. *Addictive Behaviors, 27*, 713-726
- Dube, S., Felitti, V., Dong, M., Giles, W., & Anda, R. (2003). The impact of adverse childhood experiences on health problems: Evidence from four birth cohorts dating back to 1900. *Preventive Medicine, 37*, 268-277.
- Edwards, V., Holden, G., Felitti, V., & Anda, R. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: results from the adverse childhood experiences study. *American Journal of Psychiatry, 160*(8), 1453-1460.
- Felitti, V., Anda, R., Nordenberg, D., Williamson, D., Spitz, A., Edwards, V., ... Marks, J. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. *American Journal of Preventative Medicine, 14* (4), 245-258.



- Gance-Cleveland, Mays, M., & Steffen, A. (2008). Association of adolescent physical and emotional health with perceived severity of parental substance abuse. *Journal of Specialists in Pediatric Nursing, 13*(1), 15-25.
- Grant, B., (2000). Estimates of US children exposed to alcohol abuse and dependence in the family. *American Journal of Public Health, 90*(1), 112-115.
- Hanson, R., Self-Brown, S., Fricker-Elhai, A., Kilpatrick, D., Saunders, B., & Resnick, H. (2006). Relations among parental substance use, violence exposure and mental health: The national survey of adolescents. *Addictive Behaviors, 31*, 1988-2001.
- Harmer, A., Sanderson, J., & Mertin, P. (1998). Influence of negative childhood experiences on psychological functioning, social support, and parenting for mothers recovering from addiction. *Child Abuse and Neglect, 23*(5), 421-433.
- Kranzler H.R., Kadden, R.M., Babor, T.F., Tennen, R., & Rounsaville, B.J. (1996). Validity of the SCID in substance abuse patients. *Addiction 91*(6), 859-868.
- Ohannessian, C., & Hesselbrock, V. (2008). Paternal alcoholism and youth substance abuse: The indirect effects of negative affect, conduct problems, and risk taking. *Journal of Adolescent Health, 42*, 198-200.
- Pagano, M.E., Rende, R., Rodriguez, B.F., Hargraves, E., Moskowitz, A., & Keller, M. (2007). Impact of parental history of substance use disorders on the clinical course of anxiety disorders. *Substance Abuse Treatment, Prevention, and Policy, 2*(13).
- Schafer, D.W. (2007). *Causes and rates of death among help-seeking male Vietnam veterans treated for PTSD: A follow-up study* (Unpublished doctoral dissertation). Retrieved from Pepperdine University, Los Angeles, CA.
- Segal, D.L, Hersen, M., & Van Hasselt, V.B. (1994) Reliability of the Structured Clinical Interview for DSM-III-R: An evaluative review. *Comprehensive Psychiatry, 35*, 316-327.
- Young, N., Boles, S., & Otero, C. (2007). Parental substance use disorders and child maltreatment: Overlap, gaps, and opportunities. *Child Maltreatment, 12*(2), 137-149.

## TABLES

Table 1

*Study Variable Descriptives*

Instrument	N	%	Mean	SD	Range	Number Missing
Demographic Questionnaire Parental Substance Abuse	1388	42.2				518 (27.2%)
SCID						
Alcohol Dependence Disorder	1401	67.7				505 (26.5%)
Substance Dependence Disorder	1404	49.9				502 (26.3%)
BDI	1314		31.56	10.24	1-63	

*Note.* SCID=Structured Clinical Interview for the DSM-IV; BDI=Beck Depression Inventory

## APPENDIX A

### **Literature Review (Written and Tabled)**

The following is a review of the available literature addressing the study variables and their relationships. The review was conducted with the following objectives: to further examine the relationship between veterans with combat-related PTSD and mortality; gather information on the relationship between ACE and mortality, specifically PSA; and attempt to gather information on veterans with PTSD regarding health conditions and mortality as an outcome of ACE.

#### **Search Criteria**

All relevant studies were quantitative in design. Only studies published in peer-reviewed journals since 1997 with a sample size above 30 participants were considered for review. Articles addressing three of the main variables were ideal. Articles addressing two of the main variables were acceptable. Search variables included Adverse Childhood Experiences (ACEs), Parental Substance Abuse (PSA), health-related outcomes, vital status (or mortality), substance abuse, and depression. Studies containing these variables that were conducted with male Veteran populations were most valuable.

A variety of search engines were utilized to access this research. Academic Search Elite, EBSCO, GoogleScholar, PILOT, PsychINFO, PubMed, and SCOPUS all yielded relevant research articles peer reviewed journals.

#### **Veterans and Mortality**

In addition to the psychological and psychosocial outcomes associated with Posttraumatic Stress Disorder (PTSD), recent research suggests the disorder may be associated with particular health outcomes including increased risk of mortality (Schafer,

2007). Schafer (2007) found Vietnam veterans with PTSD were more likely to die earlier than their general population counterparts and from behavioral rather than natural causes.

### **Adverse Childhood Experiences**

In addition to studying the relationship between PTSD and mortality, many investigators have begun to evaluate lifestyle and behaviors that lead to many causes of death (i.e. Anda et al., 2008; Felitti et al., 1998). Anda, Felitti, and their colleagues have discovered a relationship between many childhood experiences that act as risk factors for developing behaviors, which result in many of the leading causes of death. Initially, researchers concentrated on clarifying the relationship between childhood physical or sexual abuse and long term mental health outcomes (Felitti et al., 1998). However, mental health researchers now hypothesize there are seven particular risk factors which may contribute individually, or in combination to mortality in individuals who have experienced them in childhood. These factors are known as the Adverse Childhood Experiences (ACEs) and include: (a) psychological abuse, (b) physical abuse, (c) sexual abuse, (d) parental substance abuse, (e) parental or household mental illness, (f) domestic violence witness, and (g) household criminal behavior (Felitti et al., 1998). The present study aims to examine the relationship between parental substance abuse (PSA) and its potential individual relationship with mortality in a sample of treatment seeking Vietnam veterans with PTSD.

### **Veterans with PTSD, Mortality, and Health**

In addition to the results found by Schafer (2007), a review of the literature produced eight more studies examining the relationship between PTSD and mortality among veterans. Seven studies found Vietnam veterans with PTSD had higher mortality

rates overall (Boscarino, 2006a; Boscarino, 2008; Crawford, Drescher, & Rosen, 2009; Johnson, Fontana, Lubin, Corn, & Rosenheck, 2008; Kasprov, & Rosenheck, 2000; Price, Risk, Haden, Lewis, & Spitznagel, 2004; Watanabe & Kang, 1995). Three studies found Vietnam theater veterans were more likely to die from behavioral causes (Boscarino, 2006b; Crawford, Drescher, & Rosen, 2009; Drescher, Rosen, Burling, & Foy, 2003).

Veterans with PTSD have also been found to exhibit poor levels of self-care and are at increased risk for nonfatal strokes, heart attacks, and seek health care less frequently (Buckley, Mozley, Bedard, & Dewulf, 2004). In addition, these veterans are more likely to develop high cholesterol and Body Mass Index (BMI; David, Woodward, Esquenazi, & Mellman, 2004).

Due to advancements in health care, it is possible for serious diseases to be diagnosed and treated. Although mortality appears to be a drastic outcome of PTSD, some researchers have found PTSD status is associated with increased risk of select medical conditions, which may be fatal if the person is not screened by a physician regularly (Schnurr, Spiro, & Paris, 2000; David et al., 2004).

### **Adverse Childhood Experiences**

The available research studying the relationship between the ACEs and mortality suggest a positive relationship between these factors, and those adults who experience at least two ACEs are more likely to experience health conditions which may lead to earlier death than those adults who did not experience an ACE (Anda et al., 2008; Anda et al., 2002; Christoffersen & Sothill, 2003). There also seems to be evidence of the interrelatedness of ACEs. Two studies found those who were exposed to one ACE

category were 81-98% more likely to have been exposed to an additional ACE category (Anda et al., 1999; Edwards, Holden, Felitti, & Anda, 2003). Dong and colleagues (2004) found parental substance abuse commonly co-occurs with the other ACEs. Twenty-eight percent of their participants reported living in a home with a parent who abused substances when they were children.

**Health.** Researchers have found ACEs may have a relationship with particular health conditions or complications arising from high-risk lifestyle factors such as substance use, high-risk sexual behavior, and physical inactivity (Dube, Anda, Felitti, Chapman et al., 2001; Dube, Felitti, Dong, Giles, & Anda, 2003; Cabrera, Hoge, Bliese, Castro, & Messer, 2007; Felitti et al., 1998). Of the five studies which examined the relationship between ACE and health conditions, all found a significant positive correlation between ACE and health conditions which are linked to many of the leading causes of death such as: chronic obstructive pulmonary disease (Anda et al., 2008); reduced overall health-related quality of life (Corso, Edwards, Fang, & Mercy, 2008); suicidality and high-risk sexual behavior (Dube, Felitti, Dong, Giles, et al., 2003); tobacco use, obesity, and suicidality (Felitti et al., 1998); and altered immune status (Surtees et al., 2003).

Three studies suggested the relationship between ACE and development of health-related conditions is not only positive, but the more ACEs a person experiences, the higher the chance of developing risk factors such as smoking, obesity, depression, alcohol and drug abuse, and suicide attempts which are linked to behavioral causes of death (Felitti et al., 1998; Anda et al., 2008; Cabrera et al., 2007). Although ACEs may have a relationship with developing non-behavioral diseases such as heart disease,

cancer, hepatitis, head injury, and overall poor health by self report, there is limited research which examines effects of individual ACEs on health status and mortality (Felitti et al., 1998).

**Veterans with PTSD.** The possible correlation between these ACEs and many of the leading causes of death has been examined not only in the general population, but in Vietnam veterans with PTSD (Cabrera et al., 2007). This study found a dose-response relationship between ACE and heart disease, obesity, drug abuse, depression and suicidality. In addition, they found ACE predicted depression and PTSD in their sample.

### **Parental Substance Abuse and Health**

Few researchers have examined the effects of individual ACEs to explore the possibility of some risk factors being necessary or sufficient for behavior-related or natural deaths. Pagano and his colleagues (2007) studied the potential individual effects of parental substance abuse and found results to suggest children who grow up in the care of parents who have substance abuse disorders are at increased risk for developing psychiatric disorders than those children who grow up with non substance abusing parents. These children are at an increased risk for developing anxiety disorders in particular, such as PTSD. The findings in this 2007 study indicate these children are more likely to relapse with regard to anxiety disorders than those children of non-abusing parents.

Children who are reared by parents who abuse substances are at higher risk for accidental mortality, possibly because they are more likely to engage in self-destructive behavior which may result in violent death (Chistoffersen & Soothill, 2003). In addition, those children who grow up in an environment with a parent who abuses substances are

at higher risk for experiencing another ACE (Anda et al., 2002). Of the four studies examining the relationship between PSA and other kinds of abuse, all presented data indicating PSA may be a common co-occurrence (Dube, Anda, Felitti, Craft et al., 2001; Magura & Laudet, 1996; Wolock & Magura, 1996; Young, Boles, & Otero, 2007).

A review of the literature yielded six studies which examined the relationship between PSA as a variable negatively impacting health. All research groups found results suggesting there are potential negative consequences for adults who grew up in a household with PSA, including increased risk taking behaviors, personal substance abuse, self-destructive behavior and depression which can lead to substance related health complications, suicidality, and violent death (Christoffersen & Soothill, 2003; Hanson et al., 2006; Harmer, Sanderson, & Mertin, 1998; Ohannessian & Hesselbrock, 2008; VanDeMark et al., 2005; Young, Boles, & Otero, 2007).

Although the field lacks longitudinal research with regard to the long-term effects of parental substance abuse, one meta-analysis found families with alcoholic parents report higher levels of conflict, and are less likely to demonstrate effective parenting or positive modeling for problem solving (Johnson, & Leff, 1999). Children in these families are more likely to experience emotional and physical violence, illness, financial strain, and household moves. These children tend to exhibit more adjustment problems in health, social and emotional areas. In addition, these children are less aware of the consequences of their behavior, have decreased self-esteem, and are at higher risk for future mental health disorders (Johnson & Leff, 1999).

Issues regarding parental substance abuse severity have also been studied to address the potential discrepancy that may occur with regard to the child's perception of



their parents' substance use. Particularly, Gance-Cleveland, Mays, and Steffen (2008) found adolescents who perceive their parents' substance abuse to be more severe have more medical conditions, physical symptoms, and negative moods than those in low or moderate severity groups.

Concern related to the validity of the retrospective reports have also been addressed with regard to assessing ACEs. Dube, Williamson, Thompson, Felitti, and Anda (2004) examined the test-retest reliability of the ACE questionnaire they developed, and found responses were stable over time.

### **Disorders associated with ACE and PSA**

**Depression.** ACE has also been linked to mental illness in general (Anda et al., 2007), specifically depression (Anda et al., 2002; Chapman et al., 2004) and suicide attempts and depression (Dube, Anda, Felitti, Craft et al., 2001). There appears to be a similar dose-response relationship between the number of ACEs and likelihood of developing depression. This relationship has also been studied in a sample of veterans with PTSD. Researchers found ACE predicted PTSD and depression when controlled for demographics and gender (Gahm, Lucenko, Retzlaff, & Fukida, 2007). Those children who experience ACE as well as combat are also at an increased risk for developing depression (Cabrera et al., 2007). Depression has also been associated with smoking behavior and substance abuse leading to premature mortality (Kinder et al., 2008).

**Substance abuse.** Another significant outcome of ACE is substance abuse. Two studies found a dose-response relationship between number of ACEs and likelihood of personal substance abuse (Dube, Anda, Felitti, Edwards, & Croft, 2002; Dube, Felitti, Dong, Chapman, Giles, & Anda, 2003).

**Smoking behavior.** Anda and his colleagues found (1999) all ACE categories were significantly associated with smoking initiation and heavy use during adulthood. In addition to finding similar results, two more studies found the likelihood of smoking initiation increases as number of childhood ACE exposures increase (Dube, Anda, Felitti, Craft et al., 2003; Felitti et al., 1998).

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Anda, Brown, Dube, Bremner, Felitti, & Giles (2008).	correlational: logistic regression, cox hazard models, binomial regression	17,337 baseline, 15,472 follow up (54% female, 46% male; 76% white; 51% never-smokers, 41% former smokers, 8% current smokers)	Examine the relationship between ACE and COPD	COPD measured by self-report, incident hospitalization from ICD-9 - coded hospital-discharge records and use of prescription medication for the treatment of COPD	Calculated as part of an ACE index score (maximum 8)	ACE Index score	<b>Findings:</b> those with an ACE score >5 were at 2 times risk for hospitalizations than those with a score of 0. The higher the ACE score, the sooner they were hospitalized for COPD even when controlled for smoking status. <b>Limitations:</b> self report data

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Anda, Brown, Felitti, Bremner, Dube, & Giles (2007).	multivariable- adjusted negative binomial regression (PROC GENMOD); prospective design	17,377 baseline, 15,033 follow- up	Assess the relationship between ACE index score and rate of psychotropic medication prescription	none	Calculated as part of an ACE index score (maximum 8)	<b>Rate of psychotropic medication prescription:</b> Kaiser pharmacy database	<b>Findings:</b> In young, middle- aged, and older adults, the prescription rate for antidepressants and anxiolytics increased as the ACE score increased. In young and middle-aged adults, the prescription of anti-psychotic medication increased as the ACE score increased. Authors suggest ACE has a lifetime effect on emotional and mental health in this population. <b>Limitations:</b> Although prospective, some risk of self-report and recall biases.

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Anda, Croft, Felitti, Nordenberg, Giles, Williamson, & Giovino (1999).	retrospective cohort survey; used age, sex, race, and education as covariates	9215 adults: 4958 female(55 mean age), 4257 male (58 mean age)	Assess the relationship between ACE and 5 types of smoking/tobacco use behaviors	none	Calculated as part of an ACE index score (maximum 8)	<p><b>Smoking:</b> <i>Early initiation of smoking:</i> before 14 years of age. <i>Ever smoked:</i> at least 100 cigarettes. <i>Current smokers:</i> at the time of survey. <i>Heavy smokers:</i> 20+ cigarettes per day. <i>Parental smoking:</i> if parent smoked at any time during childhood.</p> <p><b>Depression:</b> one question from the Diagnostic Interview Schedule: "Have you felt depressed or sad much of the time in the past year?"</p>	<p><b>Findings:</b> Those exposed to one ACE category were 85.5% more likely to have been exposed to an additional ACE category. All ACE categories were significantly associated with ever smoking and heavy smoking. Household substance abuse appeared to play a causal role in exposure to the other ACEs in this sample.</p> <p><b>Limitation:</b> self report data.</p>

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Anda, Whitfield, Felitti, Chapman, Edwards, Dube,... Williamson D.F. (2002).	retrospective cohort	9,346	Describe the effect of alcoholic parents on children, specifically with regard to alcoholism and depression	none	<i>Parental alcoholism:</i> adapted from National Health Interview Survey; <i>ACE:</i> Wyatt, Conflict Tactics Scale, other questions: maximum score of 9	<i>Depression:</i> Diagnostic Interview Schedule. <i>Alcoholism:</i> affirmative response to "Have you ever considered yourself to be an alcoholic?"	<i>Findings:</i> those with alcoholic parents were at higher risk for having all nine ACEs; children of alcoholics more likely to become alcoholics, depression higher in alcoholic families. <i>Limitations:</i> non-specific questionnaire may have resulted in underreporting.
Boscarino (2006a).	correlational: Cox hazard regression	15,288 male U.S. army veterans (7,924 Vietnam theater veterans; 7,364 Vietnam era veterans) 82% Caucasian, 11% African American, 5% Hispanic, 2% of other racial background	Assess the relationship between PTSD and specific causes of mortality	telephone survey asking for health status, history of substance abuse, cigarette smoking, demographics, and military history; Military records; Death certificates	none	none	<i>Findings:</i> Veterans with PTSD were more likely to have higher rates of mortality overall (era and theater), era veterans at higher risk for death of external causes. Cause of death was obtained from death certificates, unable to discern whether the cited condition was a result of a behavior. <i>Limitations:</i> risk factor data came from self- reports.

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Boscarino (2006b).	quantitative/ correlational	15,288 male U.S. army veterans (7,924 Vietnam theater veterans; 7,364 Vietnam era veterans) 82% Caucasian, 11% African American, 5% Hispanic, 2% of other racial background	To investigate the relationship between external causes of death in combat veterans with PTSD, combat exposure, and predisposing factors	telephone survey asking for health status, history of substance abuse, cigarette smoking, demographics, and military history; Military records; Death certificates	none	none	<i>Findings:</i> theater veterans more likely to die from suicide, homicide, and alcohol and drug related causes. <i>Limitations:</i> reliance on self report data.
Boscarino (2008).	longitudinal, Cox regressions	4328 male U.S. Army Vietnam Era and Theatre Veterans <65 years old	To examine early-age heart disease onset in Vietnam veterans who did not have HD at baseline in 1985	standard medical history, blood pressure, ECG obtained from medical records	none	D-PTSD; DIS- PTSD	<i>Findings:</i> PTSD was associated with HD mortality. HD may be an outcome of military service in those with PTSD. <i>Limitations:</i> reliance on self report data

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Breslau, Chilcoat, Kessler, & Davis, (1999).	correlational	2181 individuals aged 18-45	To study the effect of previous trauma on the development of PTSD following subsequent trauma	none	none	information obtained by telephone survey regarding previous trauma exposure effects on subsequent trauma exposures. Interview consisted of 19 possible traumatizing childhood events as outlined by the DSM-IV	<i>Findings:</i> Those who experienced or witnessed violence were associated with higher risk of developing PTSD after subsequent traumas. <i>Limitations:</i> no assessment for intervention or coping post-trauma.



Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Buckley, Mozley, Bedard, & Dewulf (2004).	correlational: t-test and chi- square	826 consecutive veterans self or physician referred by the VA between 1996-2002; 51.69 mean age; 81.9% Caucasian	To describe physical conditions, health behaviors and functioning in veterans with PTSD	<b>Health:</b> Health Risk Appraisal, Medical Information Form, Body Mass Index	none	<b>PTSD:</b> Clinician- Administered PTSD Scale; <b>Psycho- pathology:</b> Structured Clinical Interview for DSM-IV; <b>Substance abuse:</b> Alcohol use Disorders identification Test and Drug Abuse Screening Test	<b>Findings:</b> statistics suggest the veterans in this sample have poor levels of self-care and have high physical morbidity, specifically an increased risk for nonfatal stroke and myocardial infarction. Restates the veteran population engages in smoking at twice the general population rate, seek preventive health care less frequently, and exercise less frequently. <b>Limitations:</b> retrospective data, self- reports
Cabrera, Hoge, Bliese, Castro, & Messer (2007).	quantitative/ correlational; 2 groups: non- deployed vs. deployed	4529 non- deployed male troops; 2392 post-Iraq serving troops	Examine the relationship between childhood adversity, combat, PTSD and Depression	<b>Health status:</b> modified survey used in Felitti et al. (1998),	none	<b>Depression:</b> Patient Health Questionnaire (PHQ); <b>PTSD:</b> the PTSD Checklist; <b>Combat exposure:</b> 29- item Likert-type scale	<b>Findings:</b> dose response relationship between ACE and heart disease, obesity, drug abuse, depression, and suicidality; ACE predicts depression and PTSD. <b>Limitations:</b> retrospective data, self-reports

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Chapman, Whitfield, Felitti, Dube, Edwards, & Anda (2004).	retrospective cohort	9460 adults	Examine ACE score and correlation with depression	none	two questions from ACE questionnaire	<b>Depression:</b> screening instrument for depressive disorders developed for the Medical Outcomes Study. <b>Other ACEs:</b> ACE questionnaire	<b>Findings:</b> lifetime prevalence of depressive disorders 23%. Dose response relationship between ACE score and probability of lifetime and recent depressive disorders. <b>Limitations:</b> self-report data.

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Christoffersen & Soothill (2003).	correlational, odds ratio	84,765 males and females between the ages of 13-27 living in Denmark	To examine the effect of parental alcohol use on their children before adolescence	none	<i>Alcohol/ Drug abuse/addiction:</i> reasons for hospital admissions: alcohol psychosis, alcoholism, esophageal varices, cirrhosis of liver, chronic pancreatitis, delirium, and alcohol poisoning.	none	<i>Findings:</i> parents' alcohol abuse may frame the childhood with parental violence, very high occurrence of family separations; may influence increased mortality, self-destructive behavior, hospitalization due to violence as well. <i>Limitations:</i> number of cases restricted due to narrow criteria, absence of empirically validated instruments, information from a registry which may include inaccurate or invalid treatment.
Corso, Edwards, Fang, & Mercy (2008).	correlational, between groups	2812 adults maltreated in childhood; 3356 controls	Examine the relationship between childhood maltreatment and quality of life	<i>Health:</i> Short-Form-6D	none	measure of childhood maltreatment	<i>Findings:</i> persons who experienced childhood maltreatment had significant and sustained losses in health-related quality of life in adulthood relative to persons who did not experience maltreatment

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Crawford, Drescher, & Rosen (2009).	receiver operating characteristics (ROC)	79,551 males seeking treatment for PTSD (8,992 of the participants were deceased); 58.8% white/non- Hispanic, 15.4% African American, 5% white Hispanic, .4% Asian, .6% Native American, 19.6% unknown.	To identify patient characteristics which preceded mortality	<b>Mortality:</b> BIRLS; <b>Cause of Death:</b> ICD- 10 codes from NDI; <b>Medical Diagnoses and Severity of Illness:</b> Charlson index- weighted score based on risk for mortality.	none	<b>PTSD:</b> Identified by ICD-9 diagnosis code	<b>Findings:</b> recent medical hospitalization, severity of medical diagnoses, and substance-related diagnosis defined sub-groups of patients with varying risk of death. Veterans with more than one severe medical diagnosis were at an extreme level of risk. High prevalence of substance- related diagnoses in participants with mortality who had lower medical severity before death. <b>Limitations:</b> lacked reliability and validity of diagnostic information, participant pool restricted to veterans with PTSD.
David, Woodward, Esquenazi, & Mellman (2004).	correlational: chi square and t- test	55 male veterans admitted for PTSD (mean age 49.7 years), 38 admitted for alcohol dependence (mean age 48.3).	To examine the prevalence of health risk factors in veterans with chronic PTSD and alcohol dependence	<b>Physical illness:</b> investigator review of medical investigator	none	<b>Psychiatric diagnoses:</b> Structured Clinical interview for DSM-III. <b>Drug abuse history, tobacco use, alcohol abuse and sobriety:</b> Clinical interview	<b>Findings:</b> Participants with PTSD more likely to be diagnosed with osteoarthritis, diabetes, heart disease depression, obesity, and elevated lipid levels. Patients with alcohol dependence more likely to be diagnosed with hepatic disease. <b>Limitations:</b> small sample size, absence of control group.

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Dong, Anda, Felitti, Dube, Williamson, Thompson, ...Giles (2004).	correlational	8,629 HMO patients from San Diego. 54% women, 46% men. Women mean age 55, men mean age 57. 73% women Caucasian, 75% men Caucasian	Examine co-occurrence of the ACEs	none	item from ACE questionnaire	<i>Additional ACE:</i> ACE questionnaire (range 0-10)	<i>Findings:</i> 81%-98% who had experienced one ACE had experienced at least one other ACE, 53% had at least 3 additional ACES. 28.2% endorsed household substance abuse. <i>Limitations:</i> self-report data, present emotional impairment may impact accuracy of information recall.

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Drescher, Rosen, Burling, & Foy (2003).	quantitative/ correlational	1866 male veterans who were treated for PTSD and were deceased prior to 12/31/99	Are the causes of death for treatment seeking PTSD veterans more from behavioral or natural causes?	<i>Behavioral deaths:</i> associated with high risk behaviors that may be changed with intervention, includes accidental and intentional deaths, substance use related deaths. <i>Natural deaths:</i> heart disease, cancer, etc. <i>Death:</i> obtained from Social Security Death Index.	none	none	<i>Findings:</i> help seeking veterans with PTSD had an increased risk for external causes of death compared with non-PTSD veterans. <i>Limitation:</i> no non-PTSD veteran control group, patients in VA PTSD inpatient programs often have other co-morbid medical and psychiatric conditions, which may also result in early and alternate cause mortality.

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Dube, Anda, Felitti, Chapman, Williamson, & Giles (2001).	quantitative/ correlational	17,377 males and females (mean age 57years)	Examine the relationship between suicide attempt and ACE, in terms of number of ACEs	none	ACE questionnaire	<i>Suicide attempts:</i> self report; <i>ACEs:</i> ACE questionnaire	<i>Findings:</i> the lifetime prevalence of suicide attempt was 3.8% and increased 2-5 fold with those who have ACEs, effect at least partially mediated by depression and substance abuse. <i>Limitation:</i> unable to assess for genetic factors, data regarding familial history of mental illness and suicide not available.
Dube, Anda, Felitti, Croft, Edwards, & Giles (2001).	quantitative/ correlational	4674 females mean age 55; 3955 males mean age 57	Examine the association between parental alcohol abuse and ACE.	<i>Health status:</i> Health questionnaire	ACE questionnaire	<i>ACEs:</i> ACE questionnaire	<i>Findings:</i> participants who grew up with one or both parents who abused alcohol were between 2 and 13 time more likely to have at least one other ACE. <i>Limitations:</i> although no causal relationship can be determined, a correlational relationship is strong.

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Dube, Anda, Felitti, Edwards, & Croft (2002).	survey, correlational	9367 (54%, mean age 56) women; 7970 (46% mean age 58) men. Total 17,377.	Assess relationship of ACEs to adult alcohol abuse	none	ACE questionnaire	<i>ACEs</i> : ACE questionnaire. Personal alcohol abuse: self report item on questionnaire	<i>Findings</i> : each ACE was associated with higher risk of alcohol abuse as an adult. Multiple ACEs increased risk of heavy drinking, self-reported alcoholism, and marrying an alcoholic 2-4 fold, regardless of parental alcoholism. Adult alcoholism most associated with both parents abusing alcohol, followed by mother only. <i>Limitations</i> : self report data.
Dube, Felitti, Dong, Giles, & Anda (2003).	correlational	cohorts: 1900-1978	Assess the relationship between ACE and health problems on 4 age groups	self-report	none	<i>ACE</i> : ACE questionnaire. <i>Depressed affect, sexual health, substance use</i> : self-report endorsement on questionnaire items	<i>Findings</i> : depressed affect, suicide attempt, multiple sexual partners, STDs, smoking and alcoholism increased as ACE score increased. No substantial difference between birth cohorts. <i>Limitations</i> : self-report.



Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Dube, Miller, Brown, Giles, Felitti, Dong, & Anda. (2006).	retrospective cohort	8417 adult HMO members	Examine the relationship between occurrence of ACE and alcohol use initiation in adolescence	none	ACE questionnaire	<i>Personal drinking use and age at initiation:</i> self report question.	<i>Findings:</i> all ACEs except neglect increased risk of alcohol use. Total number of Aces produced a graded relationship to early adolescent alcohol initiation (14 years). <i>Limitations:</i> retrospective self report, no environmental context outside the family.
Dube, Williamson, Thompson, Felitti, & Anda (2004).	Kappa coefficient	334 women, 324 men. Mean age 64 for both sexes	To determine the reliability of the ACE questionnaire used to self-report retrospective data	none	none	<i>ACEs:</i> ACE questionnaire	<i>Findings:</i> test-retest reliability in responses to ACE questions. Suggest retrospective responses are stable over time. <i>Limitations:</i> people may have different emotional reactions to questions which are taboo and may cause underreporting.

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Edwards, Holden, Felitti, & Anda (2003).	correlational	8,667 (54.2% women)	Examine the relationship between ACE and adult mental health status	self -report	ACE questionnaire	Family health history, mental health measure and ACE: self- report questionnaire	<b>Findings:</b> 43% of participants met criteria for some type of abuse or household dysfunction, over 33% had experienced more than one type of maltreatment. <b>Limitations:</b> Self -report.
Felitti, Anda, Nordenberg, Williamson, Spitz, Edwards, ... Marks (1998).	quantitative/ correlational	8056 adult males and females (mean age 56 years). 79.4% white, 43% graduated from college; 94% graduated from hs	Examine the relationship between ACE and mortality	Medical Records	Part of ACE questionnaire	ACE's questionnaire	<b>Findings:</b> 1. prevalence and risk for smoking, severe obesity, physical inactivity, depressed mood, and suicide attempts as the number of childhood exposures increased. 2. the prevalence and risk of alcoholism, use of illicit drugs, injection of illicit drugs, > or equal to 50 sexual partners, and history of an STD increased as number of childhood exposures increased. <b>Limitations:</b> unable to identify effects of individual ACE

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Gahm, Lucenko, Retzlaff, & Fukida (2007).	logistic regression	1,626 active duty soldiers (mean age 29.8 years, 37.9% under age 25, 80% men, 60.9% Caucasian, 13.2% African- American, 12.8% Hispanic)	Determine relationship between ACE, PTSD, and depression in active duty military.	none	ACE questionnaire	<b>ACEs:</b> ACE questionnaire, <b>PTSD:</b> by PC- PTSD, <b>Depression:</b> PHQ-9	<b>Findings:</b> ACE predicted PTSD and depression among sample regardless of gender and demographics. combat was linked to PTSD but not depression. <b>Limitations:</b> screening tools used for PTSD and Depression not validated with active duty military sample, sample was convenient, does not represent the overall Army or military.
Gance- Cleveland, Mays, & Steffen (2008).	group design, correlational	121 from school-based support groups for adolescents with substance abusing family members, grades 9-12 (ages 13-19) from a medium- sized metropolitan high school. 57% female 43% male.	Examine the relationship between adolescent health (mood, physical complaints, mood, and social adjustment) and severity of substance abuse and adolescent health.	Health and Daily Living Inventory for Youth	Children of Alcoholics Screening Tool	none	<b>Findings:</b> Those adolescents who perceive their parents' substance abuse to be more severe have more medical conditions, physical symptoms, and negative moods than those in low or moderate severity groups. <b>Limitations:</b> psychometrics of CAST are limited, data was collected via self report, no control groups.

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				Health/ Mortality	Parental Substance Abuse	Other	
Hanson, Self-Brown, Fricker-Elhai, Kilpatrick, Saunders, & Resnick (2006).	quantitative/ correlational	4023 male and females	Study relationship between parental substance use, violence exposure, and psychopathology	none	Interviewing with specific questions outlined by researchers	<b>PTSD, Depression, Violence and sexual abuse:</b> interview with specific questions outlined by researchers	<b>Findings:</b> violence exposure and parental substance use were independently associated with outcomes; parental substance use is moderator for MDE, PTSD, and SA/D. <b>Limitations:</b> self-report, retrospective data
Jacobson, Ryan, Hooper, Smith, Amoroso, Boyko, ... Bell (2008).	cohort	48,481 veterans	Study the possible relationship between deployment and substance abuse	none	none	<b>Alcohol use:</b> Patient Health Questionnaire. <b>Binge Drinking:</b> self report	<b>Findings:</b> binge drinking associated with deployment and combat exposure. <b>Limitations:</b> failure to account for other environmental stressors which have been linked to binge drinking onset.

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Johnson, Fontana, Lubin, Corn, & Rosenheck (2004).	6-year longitudinal	35 final number (47 in original sample, 8 died) Veterans with PTSD	Describe long-term course of PTSD, determine the clinical condition and health status	rate of mortality in sample, no assessment of cause	cause	<i>Life satisfaction:</i> self-report survey; <i>PTSD:</i> Combat Exposure Scale, Mississippi Scale for PTSD, War Stress Interview- Follow-up Version	<i>Findings:</i> 17% of original sample were deceased before the age of 50. <i>Limitations:</i> small sample, lack of comparison group

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Johnson, & Leff, (1999).	analysis of literature	31 studies	Consolidate findings on studies which study the outcome of parental substance abuse	various	various	various	<i>Findings:</i> lack of longitudinal research, Alcoholic families report higher levels of conflict, Alcoholic families less likely to have effective parenting or positive behavior modeling. Alcoholic families more likely to experience emotional and physical violence, decreased family cohesion, illness, marital strain, financial strain and moves. COAs have more adjustment problems with regard to health, social, and emotional areas. COAs also exhibit lack of how their behavior affects others, decreased ability to adapt in interpersonal relationships, decreased self-esteem, future mental health disorders.

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Kasrow, & Rosenheck (2000).	retrospective cohort	6714 homeless; 1715 nonhomeless	Study the possible effect of homelessness on mortality	dates of death from Beneficiary Identification Records Locator subsystem database	none	<i>Demographic</i> clinical interview	<i>Findings:</i> short-duration homelessness resulted in a significant increase in risk of mortality in older veterans, not younger. Similar results for long-duration homelessness in the general population, but no relationship was found between homelessness duration and mortality in this sample. The risk of mortality did not decrease over time with added intervention. <i>Limitations:</i> possible confounds with homelessness such as wide difference in disorders for which they were seeking services. homeless and nonhomeless groups were being treated for different reasons

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Magura, & Laudet (1996).	statistical review	child abuse protection agencies, nation wide surveys	Communicate magnitude of influence of parental substance abuse on other forms of abuse	none	national reports and surveys, agencies	none	<i>Findings:</i> parental substance abuse is a factor in 13%-70% of child abuse instances; child protection agencies view drugs and alcohol as the largest problem facing their organizations; substance abuse was the leading reason for maltreatment in 79% of children whose families are identified as "substance abusing". substance abuse is a significant predictor of recurrent abuse and neglect.



Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Ohannessian & Hesselbrock (2008).	longitudinal	200 adolescents at time of study and 5 years after.	Determine the interaction between hostility, sadness, conduct problems, and risk-taking and paternal alcoholism and other substance abuse.	none	psychiatric interview; Semistructred Assessment for the Genetics of Alcoholism (SSAGA); Michigan Alcoholism Screening Test (MAST); informal rating on scale 1-8 for frequency of alcohol use	psychiatric interview; sadness and hostility scales from the Positive and Negative Affect Schedule; 51 item Risk Taking Questionnaire	<b>Findings:</b> paternal hostility leads to hostility in the adolescent, which lead to adolescent risk taking, which lead to substance abuse. <b>Limitation:</b> no maternal interactions could be examined
Pagano, Rende, Rodriguez, Hargraves, Moskowitz, & Keller (2007).	longitudinal (12 years)	618 male and female	Examine relationship between PSA and course of anxiety disorders	none	Family-History Research Diagnostic Criteria	<b>Anxiety Disorders:</b> SCID:non-affective disorders, Research Diagnostic Criteria, Longitudinal Interval Follow-up Evaluation	<b>Findings:</b> History of PSA was related to relapse in panic disorder and social phobia. <b>Limitations:</b> no account for the non-clinical sample, those who were not help-seeking, reliance on self-report for personal and parent data.

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Price, Risk, Haden, Lewis, & Spitznagel (2004).	quantitative/ correlational	642 male Vietnam veterans with drug use history	Examine the relationship between PTSD, drug dependence, suicidal ideation, and suicide attempt?	none	none	<b>PTSD, drug abuse, suicidality:</b> undisclosed surveys (archival data); all self report	<b>Findings:</b> strong relationship between variables; drug dependence only causal for PTSD and suicidality in young adults. <b>Limitations:</b> only 9 suicides in the sample, not large enough number to draw conclusions
Schafer (2007).	quantitative/ correlational	325 deceased male Vietnam veterans treated for PTSD	Are mortality rates higher for help seeking diagnosed with PTSD than the mortality rates for age adjusted general population and if so are they due to behavioral or natural causes?	data obtained from death certificates; Social Security Death Master File	none	<b>Mental health symptoms:</b> SCID	<b>Findings:</b> PTSD veterans were more likely to die from behavioral causes than age adjusted matches in general populations. <b>Limitations:</b> lack of non-PTSD sample.

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				Health/ Mortality	Parental Substance Abuse	Other	
Schnurr, Spiro, & Paris, (2000).	quantitative/ correlational	605 male veterans WWII and Korea	Study relationship between PTSD and medical diagnoses.	<b>BMI and assessment of chronic health conditions:</b> records obtained from routine health exams	none	<b>PTSD:</b> Keane's Combat Exposure Scale; Mississippi Scale for Combat-Related PTSD	<b>Findings:</b> PTSD associated with some medical conditions. <b>Limitations:</b> self report retrospective data, lack of control group, many key participants had died and were unable to participate.
Surtees, Wainwright, Day, Brayne, Luben, & Khan (2003).	correlational	11,857 participants from European Prospective Investigation into Cancer and Nutrition in Norfolk.	Examine the relationship between ACE and immune status.	<b>Immune status:</b> lymphocyte counts at follow	self-report questionnaire	<b>ACE:</b> self- report questionnaire	<b>Findings:</b> association between ACE and lymphocyte counts. Counts also attributed to lifestyle factors. <b>Limitations:</b> first project to study the association.

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
VanDeMark, Russell, O'Keefe, Finkelstein, Noether, & Gampel (2005).	quantitative/ correlational	253 male and female children (7 year old mean)	Describe children of mothers who are entering residential treatment for substance abuse	none	Baseline Clinical Interview	<b>Mental health outcomes:</b> Baseline Clinical Interview; Child Behavior Checklist; Behavioral and Emotional Rating Scale	<b>Findings:</b> the children scored in normal or higher ranges regarding behavioral and emotional problems and strengths. These children had mothers who were receiving help early in their disorder. Children who scored lower had mothers who had spent more days in homeless or domestic violence shelters and who had more mental health symptoms. <b>Limitations:</b> assessment of child functioning was indirect by parent interview.
Watanabe & Kang, (1995).	correlational	11,167 veterans who served in Vietnam (90% Caucasian, 8.8% African American, 58.7 high school education); 9,412 veterans who did not serve in Vietnam (91.9% Caucasian, 7.2% African American).	Correlation between military service and death from cancer	Information obtained from death certificates.	none	none	<b>Findings:</b> Vietnam veterans showed excess of deaths for all causes and significant excess for external causes, regardless of year of birth and military rank.

Author/ Year/Title	Research Design	Population/ Sample	Research Objective	Variables			Relevant Findings/Limitations
				Health/ Mortality	Parental Substance Abuse	Other	
Wolock & Magura (1996).	Prospective longitudinal	239 families from five New Jersey CPS agencies were interviewed.	What effects to children who grow up with PSA experience and are those families at risk for future child abuse reports?	none	self report and agency records, personal interviews	socioeconomic status, ethnicity, family structure, perceived quality of neighborhood (Quality of Neighborhood Scale).	<b>Findings:</b> parental substance abuse greatly increases likelihood of re-reports and poorer family functioning. Suggested use of alcohol and other drugs affect visibility of endangering parental behavior.
Young, Boles, & Otero (2007).	descriptive/archival research	data from the National Child Abuse and Neglect Data System, and others	Determine the overlap between the data systems of families with parental Suds', children of parents who enter rehab and how they are affected, and prenatally exposed children; how these systems affect the children.	none	no questionnaires used, criteria to meet substance abuse based on multiple studies, many broken down between drugs, alcohol, and the combination.	none	<b>Findings:</b> a substantial group of families involved in the CWS have parents that abuse AOD (43%-79%); majority of those who enter public AOD rehabilitations and programs are in the care of children who are minors (69.2% mothers and 52.5% fathers); substantial number of infants are born who are prenatally exposed to AOD (8%-11%). <b>Limitations:</b> difficulty in determining overlap between databases; difficulty in accounting for unreported parents; numbers are estimates.

## References

- Anda, R.F., Brown, D.W., Dube, S.R., Bremner, J.D., Felitti, V.J., & Giles, W.H. (2008). Adverse childhood experiences and chronic obstructive pulmonary diseases in adults. *American Journal of Preventive Medicine*, 34(5), 396-403.
- Anda, R., Brown, D., Felitti, V., Bremner, D., Dube, S., & Giles, W. (2007). Adverse childhood experiences and prescribed psychotropic medications in adults. *American Journal of Preventive Medicine*, 32(5), 389-394.
- Anda, R., Croft, J., Felitti, V., Nordenberg, D., Giles, W., Williamson, D., & Giovino, G. (1999). Adverse childhood experiences and smoking during adolescence and adulthood. *Journal of the American Medical Association*, 282(17), 1652-1658.
- Anda, R.F., Whitfield, C.L., Felitti, V.J., Chapman, D., Edwards, V.J. Dube, S.R.,...Williamson D.F. (2002). Adverse childhood experiences, alcoholic parents, and later risk of alcoholism and depression. *Psychiatric Services*, 53(8), 1001-1009.
- Boscarino, J. (2006a). Posttraumatic stress disorder and mortality among U.S. army veterans 30 years after military service. *Annals of Epidemiology*, 16(4) 248-256.
- Boscarino, J. (2006b). External cause mortality after psychologic trauma: the effects of stress exposure and predisposition. *Comprehensive Psychiatry*, 47, 503-514.
- Boscarino, J. (2008). A prospective study of PTSD and early-age heart disease mortality among Vietnam veterans: Implications for surveillance and prevention. *Psychosomatic Medicine*, 70, 668-676.
- Breslau, N., Chilcoat, H., Kessler, R., & Davis, G. (1999). Previous exposure to trauma and PTSD effects of subsequent trauma: Results from the Detroit area survey of trauma. *American Journal of Psychiatry*, 156(6), 902-907.
- Buckley, T., Mozley, S., Bedard, M., Dewulf, A. (2004). Preventive health behaviors, health-risk behaviors, physical morbidity, and health-related role functioning impairment in veterans with post-traumatic stress disorder. *Military Medicine*, 169(7), 536-540.
- Cabrera, O.A., Hoge, C.W., Bliese, P.D., Castro, C.A., & Messer, S.C. (2007). Childhood adversity and combat as predictors of depression and post-traumatic stress in deployed troops. *American Journal of Preventative Medicine*, 33(2) 77-82.
- Chapman, D., Whitfield, C., Felitti, V., Dube, S., Edwards, V., & Anda, R. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders*, 82, 217-225.

- Christoffersen, M., & Soothill, K. (2003). The long-term consequences of parental alcohol abuse: a cohort study of children in Denmark. *Journal of Substance Abuse Treatment, 25*, 107-116.
- Corso, P.S., Edwards, V.J., Fang, X., & Mercy, J.A. (2008). Health-related quality of life among adults who experienced maltreatment during childhood. *American Journal of Public Health, 98*(6), 1094-1100.
- Crawford, E., Drescher, K., & Rosen, C. (2009). Predicting mortality in veterans with posttraumatic stress disorder 30 years after Vietnam. *Journal of Nervous and Mental Disease, 197*(4), 260-265.
- David, D., Woodward, C., Esquenazi, J., & Mellman, T. (2004). Comparison of comorbid physical illnesses among veterans with PTSD and veterans with alcohol dependence. *Psychiatric Services, 55*(1), 82-85.
- Dong, M., Anda, R.F., Felitti, V.J., Dube, S.R., Williamson, D.F., Thompson, T.J., ... Giles, W.H. (2004). The interrelatedness of multiple forms of childhood abuse, neglect, and household dysfunction. *Child Abuse and Neglect, 28*, 771-784.
- Drescher, K.D., Rosen, C.S., Burling, T.A., & Foy, D.W. (2003). Causes of death among male veterans who received residential treatment for PTSD. *Journal of Traumatic Stress, 16*(6), 535-543.
- Dube, S., Anda, R., Felitti, V., Croft, J., Edwards, V., & Giles, W. (2001). Growing up with parental alcohol abuse: exposure to childhood abuse, neglect, and household dysfunction. *Child Abuse and Neglect, 25*, 1627-1640.
- Dube, S., Anda, R., Felitti, V., Chapman, D., Williamson, D., & Giles, W. (2001). Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the life span. *Journal of the American Medical Association, 286*(24), 3089-3096
- Dube, S., Anda, R., Felitti, V., Edwards, V., & Croft, J. (2002). Adverse childhood experiences and personal alcohol abuse as an adult. *Addictive Behaviors, 27*, 713-726
- Dube, S., Felitti, V., Dong, M., Chapman, D., Giles, W., & Anda, R. (2003). Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: The adverse childhood experiences study. *Pediatrics, 111*, 564-572.
- Dube, S., Felitti, V., Dong, M., Giles, W., & Anda, R. (2003). The impact of adverse childhood experiences on health problems: Evidence from four birth cohorts dating back to 1900. *Preventive Medicine, 37*, 268-277.

- Dube, S.R., Anda, R.F., Felitti, V.J., Chapman, D.P., Williamson, D.F., & Giles, W.H. (2001). Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the life span. *Journal of the American Medical Association, 286*(24), 3089-3096.
- Dube, S.R., Williamson, D.F., Thompson, T., Felitti, V.J., & Anda, R.F. (2004). Assessing the reliability of retrospective reports of adverse childhood experiences among adult HMO members attending a primary care clinic. *Child Abuse and Neglect, 28*, 729-737.
- Edwards, V., Holden, G., Felitti, V., & Anda, R. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: Results from the adverse childhood experiences study. *American Journal of Psychiatry, 160*(8), 1453-1460.
- Felitti, V., Anda, R., Nordenberg, D., Williamson, D., Spitz, A., Edwards, V., ... Marks, J. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. *American Journal of Preventative Medicine, 14* (4), 245-258.
- Gahm, G., Lucenko, B., Retzlaff, P., & Fukida, S. (2007). Relative impact of adverse events and screened symptoms of Posttraumatic Stress disorder and Depression among active duty soldiers seeking mental health care. *Journal of clinical Psychology, 63*(3), 199-211.
- Gance-Cleveland, Mays, M., & Steffen, A. (2008). Association of adolescent physical and emotional health with perceived severity of parental substance abuse. *Journal of Specialists in Pediatric Nursing, 13*(1), 15-25.
- Hanson, R., Self-Brown, S., Fricker-Elhai, A., Kilpatrick, D., Saunders, B., & Resnick, H. (2006). Relations among parental substance use, violence exposure and mental health: the national survey of adolescents. *Addictive Behaviors, 31*, 1988-2001.
- Harmer, A., Sanderson, J., & Mertin, P. (1998). Influence of negative childhood experiences on psychological functioning, social support, and parenting for mothers recovering from addiction. *Child Abuse and Neglect, 23*(5), 421-433.
- Jacobson, I., Ryan, M., Hooper, T., Smith, T., Amoroso, P., Boyko, E., ... Bell, N.S. (2008). Alcohol use and alcohol-related problems before and after military combat deployment. *Journal of the American Medical Association, 300*(6), 663-675
- Johnson, D.R., Fontana, A., Lubin, H., Corn, B., & Rosenheck, R. (2004). Long-term course of treatment-seeking Vietnam veterans with Posttraumatic Stress Disorder: Mortality, clinical condition, and life satisfaction. *The Journal of Nervous and Mental Disease, 192*(1), 35-41.



- Johnson, J., & Leff, M. (1999). Children of substance abusers: Overview of research findings. *Pediatrics, 103*(5) 1085-1099.
- Kasprow, W.J. & Rosenheck, R. (2000). Mortality among homeless and nonhomeless mentally ill veterans. *The Journal of Nervous and Mental Disease, 188*(3), 141-147.
- Kinder, L.S., Bradley, K.A., Katon, W.J., Ludman, E., McDonell, M.B., & Bryson, C.L. (2008). Depression, posttraumatic stress disorder, and mortality. *Psychosomatic Medicine, 70*, 20-26.
- Magura, S. & Laudet, A. (1996). Parental substance abuse and child maltreatment: Review and implications for intervention. *Children and Youth Services Review, 18*(3), 193-220.
- Ohannessian, C., & Hesselbrock, V. (2008). Paternal alcoholism and youth substance abuse: the indirect effects of negative affect, conduct problems, and risk taking. *Journal of Adolescent Health, 42*, 198-200.
- Pagano, M.E., Rende, R., Rodriguez, B.F., Hargraves, E., Moskowitz, A., & Keller, M. (2007). Impact of parental history of substance use disorders on the clinical course of anxiety disorders. *Substance Abuse Treatment, Prevention, and Policy, 2*(13).
- Price, R., Risk, N., Haden, A., Lewis, C., & Spitznagel, E. (2004). Posttraumatic stress disorder, drug dependence, and suicidality among male Vietnam veterans with a history of heavy drug use. *Drug and Alcohol Dependence 76*(1), S31-S43
- Schafer, D.W. (2007). *Causes and rates of death among help-seeking male Vietnam veterans treated for PTSD: A follow-up study* (Unpublished doctoral dissertation). Retrieved from Pepperdine University, Los Angeles, CA.
- Schnurr, P.P., Spiro, A., & Paris, A.H. (2000). Physician-diagnosed medical disorders in relations to PTSD symptoms in older male military veterans. *Health Psychology, 19*(1), 91-97.
- Surtees, P., Wainwright, N., Day, N., Brayne, C., Luben, R., & Khaw, K. (2003). Adverse experience in childhood as a developmental risk factor for altered immune status in adulthood. *International Journal of Behavioral Medicine, 10*(3), 251-268.
- VanDeMark, N., Russell, L., O'Keefe, M., Finkelstein, N., Noether, C., & Gampel, J. (2005). Children of mothers with histories of substance abuse, mental illness, and trauma. *Journal of Community Psychology, 33*(4), 445-459.
- Watanabe, K., & Kang, H. (1995). Military service in Vietnam and the risk of death from trauma and selected cancers. *Annals of Epidemiology, 5*, 407-412.

Wolock, I., & Magura, S. (1996). Parental substance abuse as a predictor of child maltreatment re-reports. *Child Abuse and Neglect, 20*(12) 1183-1193.

Young, N., Boles, S., & Otero, C. (2007). Parental substance use disorders and child maltreatment: Overlap, gaps, and opportunities. *Child Maltreatment, 12*(2), 137-149.

## APPENDIX B

## Demographic Information

	N	%	Mean	SD	Number Missing (%)
Age (at intake)	1866		46.94	5.08	0
Years of Education	1318				588 (69.2)
Less than 12 years	164	12.5			
12 years	326	24.7			
More than 12 years	828	62.9			
Ethnicity	1842				14 (0.8)
Caucasian	1226	65.7			
Hispanic	248	13.3			
African American	219	11.7			
Asian/Pacific	21	1.1			
Islander	68	3.7			
Native American	70	3.8			
Other*					
Marital Status	1344				522 (28.0)
Never Married	120	8.9			
Married/Domestic Partner	469	33.9			
Divorced	578	43			
Separated	160	11.9			
Income	1207				699 (36.7)
< 10,000	608	50.4			
10,000-30,000	432	35.8			
30,001-50,000	132	10.9			
> 50,000	35	2.9			
Branch of Service	1249				617 (33.1)
Army	816	65.3			
Marines	303	24.3			
Navy	89	7.1			
Air Force	41	3.3			

\*Other=Includes Mixed and Other

## APPENDIX C

## Demographic Questionnaire

**Demographic Background**

AdmitID	Admin	Enter Today's Date
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> 0 <input type="text"/> 1	<input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/>

**I. DESCRIPTION AND BACKGROUND**

1. Gender  1. Male  2. Female
2. Marital Status (**Check one**)  
 1. Married  3. Widowed  5. Divorced  
 2. Remarried  4. Separated  6. Never Married
3. Race / Ethnic Ancestry (**Check one**)  
 1. Asian / Pacific Islander  4. Caucasian  7. Other  
 2. African American  5. Native American / Alaskan Native  
 3. Hispanic / Latino  6. Mixed Ethnicity
- 4-6 Service Connected Disability
4. For PTSD (Pre-1980; PTSD often diagnosed as Psychoneurosis) .....  No  Yes
5. For Psychiatric, other than PTSD .....  No  Yes
6. For Medical, non-Psychiatric .....  No  Yes
- 7-8. Percent service connection: (**Leave blank if not service connected**)
7. For Psychiatric (including PTSD) .....
8. For Physical .....
9. Veteran's living situation for most of the last 4 months? (**Check one**)  
 a house or apartment  in jail  
 a rooming house  a shelter  
 a halfway house, group home or domiciliary  on the street (no regular place)  
 a hospital or other inpatient treatment unit

**V. EMPLOYMENT / INCOME / EDUCATIONAL STATUS**

10. What was the highest level the veteran completed in school?  
(e.g., completed high school - 12; GED = 12, BA - 16) .....
11. Please estimate your family's income/social status while you were growing up:  
 Very Poor  Lower Middle  Middle Class  Upper Middle  Upper Class (wealthy)
12. What was your total household income last year?  
 < \$10K  \$10K-\$20K  \$20K-\$30K  \$30K-\$40K  \$40K-\$50K  > \$50K+
13. Are you currently seeking some form of monetary compensation? .....  No  Yes
14. Is the veteran working now? (**Check one**)  
 0. No  1. Part-time  2. Full-time
15. Approximately how many jobs have you held since you left the military? (**Check one**)  
 None  1-5  6-12  13-50  50 or more

**II. MILITARY / TRAUMA EXPOSURE**

12. Period of service (**Check all that apply**)  
 1. Pre-WW II  4. Korean War  7. Post-Vietnam War  
 2. World War II  5. Between Korea/Vietnam  8. Persian Gulf War  
 3. Pre-Korean War  6. Vietnam War
- 12A. Since September 11, 2001 (9/11) did the veteran serve in the United States military in:  
Afghanistan .....  No  Yes  
Iraq .....  No  Yes
- 12B. Did the veteran ever serve in the United States military in a peace-keeping operation  
(such as in Lebanon, Somalia, Bosnia, Kosovo)? .....  No  Yes

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## Demographic Background

13. Branch of service (**Check all that apply**)
1. Army  4. Marines  
 2. Navy  5. Coast Guard  
 3. Air Force
14. Did the veteran ever serve in a war zone? .....  No  Yes
15. Did the veteran ever receive friendly or incoming fire from small arms, artillery, rockets, mortars or bombs? .....  No  Yes
16. Was the veteran ever a Prisoner of War? .....  No  Yes
17. Did the veteran ever observe others or participate him/herself in atrocities, such as torturing prisoners, mutilating enemy bodies, or harming civilians? If veteran **both** observed and participated, select "Participated." (**Check one**)
0. No  2. Participated  
 1. Observed others  N. Don't know
18. Were you exposed to a blast(s) while you were deployed? .....  No  Yes
19. Did you have any injury(ies) during your deployment from any of the following? (**Check all that apply**)
- Fragment  
 Bullet  
 Vehicular (any type of vehicle, including airplane)  
 Fall  
 Blast (Improvised explosive device, RPG, Land mine, Grenade, etc)  
 Other Specify: \_\_\_\_\_

### VI. FAMILY BACKGROUND

20. What state were you born in?   21. What state did you grow up in?
22. How many children were in your family growing up? (include yourself)
22. What was your Birth Order: (i.e. if you were the 5th of 6 children - enter a 5)
24. Were you adopted or raised in foster care? .....  No  Yes
25. Did your parents get divorced before you were 18? .....  No  Yes
26. Was anyone in your family hospitalized for emotional or psychiatric reasons? .....  No  Yes
27. Did anyone in your family attempt suicide? .....  No  Yes
28. Did anyone in your family complete suicide? .....  No  Yes
29. Did either of your parents abuse drugs/alcohol? .....  No  Yes
30. Please rate your **childhood happiness** on the scale below: . . .
- Never Happy  Rarely Happy  Sometimes Happy  Very Happy  Extremely Happy
31. Please rate your **adolescent happiness** on the scale below: . . .
- Never Happy  Rarely Happy  Sometimes Happy  Very Happy  Extremely Happy
32. During the **past 30 days**, how many times did you get together with one or more friends or relatives?
- 32a. Friends/relatives visited at your home. ....   times
- 32b. Got together with friends/relatives outside your home. ....   times
33. About how many close friends do you have, people you feel at ease with and can talk to about personal problems? (Write in number) .....   friends
34. In the past 30 days, how many days have you had serious conflicts with your family (such as with your spouse/sexual partner, mother, brother, sister, or other family member)? .....   days
35. How troubled or bothered have you been in the past 30 days by family problems?
- Not at all  Slightly  Moderately  Considerably  Extremely

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## APPENDIX D

## Beck Depression Inventory

**Beck-D**

AdmittID	Location	Admin	Date
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> 0 <input type="text"/> 1	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/>

**INSTRUCTIONS:** The following pages contain groups of statements. Please read each group of statements carefully. Then pick out the **one statement** in each group which best describes the way you have been feeling in the **PAST WEEK, INCLUDING TODAY!** Fill in the box next to the statement you have picked. Be sure to read all the statements in each group before making your choice.

1.  I do not feel sad
  - I feel sad
  - I am sad all of the time and I can't snap out of it
  - I am so sad or unhappy that I can't stand it
2.  I am not particularly discouraged about the future.
  - I feel discouraged about the future.
  - I feel I have nothing to look forward to.
  - I feel that the future is hopeless and that things can't improve.
3.  I do not feel like a failure.
  - I feel I have failed more than the average person.
  - As I look back on my life, all I can see is a lot of failures
  - I feel I am a complete failure as a person.
4.  I get as much satisfaction out of things as I used to.
  - I don't enjoy things the way I used to.
  - I don't get real satisfaction out of anything anymore.
  - I am dissatisfied or bored with everything.
5.  I don't feel particularly guilty.
  - I feel guilty a good part of the time.
  - I feel quite guilty most of the time.
  - I feel guilty all of the time.
6.  I don't feel I am punished.
  - I feel I may be punished.
  - I expect to be punished.
  - I feel I am punished.
7.  I don't feel disappointed in myself.
  - I am disappointed in myself.
  - I am disgusted with myself.
  - I hate myself.
8.  I don't feel I am any worse than anybody else.
  - I am critical of myself for my weaknesses or mistakes.
  - I blame myself all the time for my faults.
  - I blame myself for everything bad that happens.
9.  I don't have any thoughts of killing myself.
  - I have thoughts of killing myself, but I would not carry them out
  - I would like to kill myself.
  - I would kill myself if I had the chance.
10.  I don't cry any more than usual.
  - I cry more now than I used to.
  - I cry all the time now.
  - I used to be able to cry, but now I can't cry even though I want to



## Beck-D

11.  I am no more irritated now than I ever am.  
 I get annoyed or irritated more easily than I used to.  
 I feel irritated all the time now.  
 I don't get irritated at all by the things that used to irritate me
12.  I have not lost interest in other people.  
 I am less interested in other people than I used to be.  
 I have lost most of my interest in other people.  
 I have lost all of my interest in other people.
13.  I make decisions about as well as I ever could.  
 I put off making decisions more than I used to.  
 I have greater difficulty in making decisions than before.  
 I can't make decisions at all anymore.
14.  I don't feel I look any worse than I used to.  
 I am worried that I am looking old or unattractive.  
 I feel that there are permanent changes in my appearance that make me look unattractive.  
 I believe that I look ugly.
15.  I can work about as well as before.  
 It takes an extra effort to get started at doing something.  
 I have to push myself very hard to do anything.  
 I can't do any work at all.
16.  I can sleep as well as usual.  
 I don't sleep as well as I used to.  
 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.  
 I wake up several hours earlier than I used to and cannot get back to sleep.
17.  I don't get more tired than usual.  
 I get tired more easily than I used to.  
 I get tired from doing almost anything.  
 I am too tired to do anything.
18.  My appetite is no worse than usual.  
 My appetite is not as good as it used to be.  
 My appetite is much worse now.  
 I have no appetite at all anymore.
19.  I haven't lost much weight, if any, lately.      I am purposely trying to loose weight by eating less.  
 I have lost more than 5 pounds.  
 I have lost more than 10 pounds.       No     Yes  
 I have lost more than 15 pounds.
20.  I am no more worried about my health than usual.  
 I am worried about physical problems such as aches and pains; or upset stomach; or constipation.  
 I am very worried about physical problems and it's hard to think about anything else.  
 I am so worried about my physical problems that I cannot think about anything else.
21.  I have not noticed any recent change in my interest in sex.  
 I am less interested in sex than I used to be.  
 I am much less interested in sex now.  
 I have lost interest in sex completely.

## APPENDIX E

## Data Use Agreement

## DATA TRANSFER AGREEMENT

## AGREEMENT FOR EXCHANGE BETWEEN VETERANS HEALTH ADMINISTRATION (VHA), VA PALO ALTO HEALTH CARE SYSTEM AND PEPPERDINE UNIVERSITY

**Purpose:**

This Agreement establishes the terms and conditions under which the VA PALO ALTO HEALTH CARE SYSTEM will provide, and DR. DAVID FOY AND HIS RESEARCH TEAM AT THE PEPPERDINE UNIVERSITY will collaborate on data analysis and publication. The following research information will be shared with Dr. Foy and his team for 360 days:

- 1) De-identified PTSD clinical data and mortality data on participants in the PTSD Residential Treatment program between the years 1990-2000. These data include patients' symptoms and functioning, demographics, and mortality status. **It includes no PHI.**
- 2) These data will be used for student dissertations (Kerri Schutz, Carrie Kelly, Anna Leshner) and possibly to collaborate on analysis and publication of VA research for 360 days. The study has IRB and R&D approval at the Palo Alto and is pending IRB approval at the Pepperdine site.

Any other uses will be subject to prior approval by the VA PALO ALTO HEALTH CARE SYSTEM Director, Dr. Elizabeth Freeman.

## TERMS OF THE AGREEMENT:

1. This Agreement is by and between the Dr. David Foy of the Pepperdine University and the VA Palo Alto Health Care System, a component of the U.S. Department of Veterans Affairs.
2. This data transfer agreement covers the transfer and use of data by Dr. Foy and his research team and Dr. Craig Rosen and his team, for the project specified in this agreement. This Agreement supersedes any and all previous data.
3. The terms of this Agreement can be changed only by a written modification of the agreement by the agency signatories (or their designated representatives) to this Agreement or by the parties adopting a new agreement in place of this Agreement.
4. The VA PALO ALTO HEALTH CARE SYSTEM retains all ownership rights to the data file(s) and VHA retains all ownership rights to the VHA data file(s) provided to Dr. Foy under this Agreement.
5. Dr. David Foy and the Pepperdine University will be designed as custodians of the VA data for the VA PALO ALTO HEALTH CARE SYSTEM and will be responsible for complying with all conditions of use and for establishment and maintenance of security arrangements as specified in this Agreement to prevent unauthorized use and disclosure of the Owner's data provided under this agreement