

2013

## Childhood Predictors In The Severity Of Combat Related Posttraumatic Stress Disorder Among Veterans With Combat Related Exposure

Michael Bermes  
*University of Central Florida*

 Part of the [Public Affairs Commons](#), and the [Social Work Commons](#)

Find similar works at: <https://stars.library.ucf.edu/etd>

University of Central Florida Libraries <http://library.ucf.edu>

This Doctoral Dissertation (Open Access) is brought to you for free and open access by STARS. It has been accepted for inclusion in Electronic Theses and Dissertations, 2004-2019 by an authorized administrator of STARS. For more information, please contact [STARS@ucf.edu](mailto:STARS@ucf.edu).

---

### STARS Citation

Bermes, Michael, "Childhood Predictors In The Severity Of Combat Related Posttraumatic Stress Disorder Among Veterans With Combat Related Exposure" (2013). *Electronic Theses and Dissertations, 2004-2019*. 2603.

<https://stars.library.ucf.edu/etd/2603>

CHILDHOOD PREDICTORS IN THE SEVERITY OF COMBAT RELATED  
POSTTRAUMATIC STRESS DISORDER AMONG VETERANS WITH COMBAT  
RELATED EXPOSURE

by

MICHAEL S. BERMES  
B.S., Upper Iowa University, 2006  
M.S.W., University of Central Florida, 2009

A dissertation submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy  
in the Department of Public Affairs  
in the College of Health and Public Affairs  
at the University of Central Florida  
Orlando, Florida

Summer Term  
2013

Major Professor: Eileen Mazur Abel

© 2013 Michael S. Bermes

## **ABSTRACT**

Emerging research suggests that childhood adversities may increase both the risk and symptomology of posttraumatic stress disorder (PTSD) in our veteran population. Over 40% of our reintegrating military veterans return with significant mental health issues led by combat-related PTSD. PTSD impacts veterans in numerous areas including unemployment, increased criminal justice involvement, increased treatment costs, divorce, co-morbid mental illness, greater levels of domestic violence, homelessness, high college dropout rates, suicide, and long term health problems. The purpose of this study is to investigate the impact of childhood adversities (abuse, neglect, and poverty) upon the severity of combat-related PTSD in veteran populations. Specifically, the researcher examines the direct effects of: (1) childhood trauma; (2) childhood neglect; and (3) childhood poverty (as assessed based on socioeconomic status [SES]) upon the severity of combat-related PTSD. This study of student veterans ( $n=102$ ) receiving services from a veteran service center at a major metropolitan university in Central Florida is a non-experimental, explanatory, retrospective survey design using structural equation modeling (SEM) to test the relationships among study variables. Findings strongly supported a relationship between childhood trauma and neglect and the severity of combat-related PTSD. Similarly, findings also supported that no relationship existed between childhood SES and the severity of combat-related PTSD. Both childhood trauma and neglect were significantly associated with combat-related PTSD at an even greater effect than that of combat exposure. SES was not found to be significant in the severity of combat-related PTSD. The findings

suggest that preventive screening policies to reduce costs and severity of combat-related PTSD might be needed.

This dissertation is dedicated to the men, women, and families of the Armed Forces, past, present, and future that have not only given their lives, but sacrificed their minds. To the many brothers and sisters in arms who will never have closure. It is my hope that our politicians may understand that their decisions impact far beyond global geopolitical interests. To my son Zachary Michael Bermes who taught me what it meant to see others inside rather than outside. To all of my children who have supported me through all the tough times in our lives; Liebe Hope Mowbray, Jocelyn Daye Cramton, and Megan Joan Bermes. Also my grandchildren, Zoie and Madison Mowbray, Jude, Gabriella, and Maxwell Cramton may you always hunger for education and understand its worth in following your dreams. My dear friend and mentor, Kenneth Cherry, USMC Vietnam, who's encouragement allowed me to go where I thought I could not. Finally, and most importantly to my bride and love of my life, Joie Bermes, without her deep abiding love, patience, and support I would not be writing this and would not be in the wonderful place I am in my life. Thank you my joie. I am yours and will love you forever!

## ACKNOWLEDGMENTS

This dissertation would not be possible without the support and encouragement of those who believed in me beyond what I could imagine within myself. I would like to thank my dissertation committee: Dr. Eileen Mazur Abel (Chair), Dr. Mary Ann Burg, Dr. Julie Steen, and Colonel Ann McCulliss. Johnson. These professionals are the standard bearers for excellence in their chosen fields of expertise and set the example for all, regardless of discipline. It is a great privilege to have had the opportunity to learn and grown under their guidance.

Dr. Eileen Mazur Abel, I will never be able to repay you for your support, encouragement, and the powerful mentorship you have afforded me. My only hope is that I can impact veteran research, our students, and communities in just a small degree of what you have accomplished in your lifetime.

A very special thank you to Dr. Maralee Walsh who has mentored me from my professional youth, supported my dream to become a military social worker, and coached me in learning to live and thrive in academia. You helped me have the courage to start this journey for our veterans. Thank you for your tremendous strength and always being there for me my dear friend.

Thank you, Dr. Mary Beth Harris for welcoming me into our profession. I will never forget the times we had together and the many personal and professional teaching points you cemented within my being forever.

Great thanks to Ms. Haley Helms, my research assistant, who provided both extensive spreadsheet expertise and data input as well as moral support throughout the process.

I would like to thank my many students who have been with me along this trip culminating in this special moment. You have inspired me, chastened me, assisted me, and loved me as I have had the honor and privilege to teach you social work. You will all be forever in my thoughts.

Finally, to the University of Central Florida, School of Social Work, and Public Affairs leadership, the many outstanding professors I have understudied, and of course the forever supportive and kind, Ms. Margaret Mlachak and Shelley Pozdoll. I am eternally grateful for the outstanding education I have received throughout the years. As my life begins at a new stage, and as I move on towards other aspirations and professional goals, my thoughts will always return to the Pegasus. Go Knights!



## TABLE OF CONTENTS

|   |      |
|---|------|
| LIST OF FIGURES .....   | xii  |
| LIST OF TABLES .....  | xiii |
| CHAPTER ONE: INTRODUCTION.....                                  | 1    |
| Background.....   | 2    |
| What is PTSD? .....   | 5    |
| Severity and Complexity of PTSD .....                           | 9    |
| PTSD in Combat-exposed Veterans .....                           | 11   |
| Childhood Trauma.....   | 13   |
| Childhood Neglect.....  | 15   |
| Socioeconomic Status.....                                       | 17   |
| Purpose of the Study & Organization of the Dissertation .....   | 19   |
| Relevance to Public Affairs & Social Work.....                  | 19   |
| CHAPTER TWO: LITERATURE REVIEW & THEORETICAL FOUNDATIONS.....   | 21   |
| Introduction .....  | 21   |
| Statement of the Problem .....                                  | 21   |
| Definition of Terms .....                                       | 22   |
| Historical Overview: PTSD and PTSD in the Military .....        | 28   |
| The Uniqueness of Combat-related PTSD .....                     | 31   |
| Overview of Varying Theories of PTSD Etiology .....             | 34   |
| Psychoanalytic Trauma Theoretical Framework .....               | 34   |
| Erikson's Psychosocial Developmental Theoretical Framework..... | 36   |

|   |    |
|---|----|
| Social Causation Theoretical Framework .....  | 39 |
| Childhood Adversity: A Primary Predictor of PTSD Severity .....   | 40 |
| Summary of the Literature Review .....  | 50 |
| CHAPTER THREE: RESEARCH DESIGN.....   | 54 |
| Introduction .....  | 54 |
| Research Question .....   | 54 |
| Hypotheses .....  | 55 |
| Study Design .....  | 55 |
| Measures .....  | 58 |
| Early Childhood Trauma Inventory-Self Report-Short Form (ETISR-SF) .....  | 58 |
| Strauss Multidimensional Neglectful Behavioral Scale, Personal Relationship Profile,<br>Neglect History Subscale (MNBS-PRP-NH)..... | 59 |
| Hollingshead Four-Factor Index of Socioeconomic Status .....  | 60 |
| Impact of Event Scale – Revised (IES-R).....  | 60 |
| Combat Exposure Scale (CES) .....   | 61 |
| Demographic Profile .....   | 61 |
| Population and Sample .....   | 62 |
| Procedures and Data Collection .....  | 63 |
| Data Analysis.....  | 65 |
| CHAPTER FOUR: FINDINGS & DISCUSSION .....   | 68 |
| Findings .....  | 68 |
| Demographics .....  | 68 |
| PTSD .....  | 69 |

|   |     |
|---|-----|
| Levels of Trauma .....  | 69  |
| Levels of SES .....   | 70  |
| Levels of Neglect .....   | 70  |
| Structural Equation Modeling .....  | 71  |
| Measurement Model Testing .....   | 71  |
| Structural Model Hypothesis Testing .....   | 74  |
| Model Goodness of Fit .....   | 82  |
| Discussion .....  | 84  |
| Practice and Policy Implications .....  | 87  |
| Study Limitations .....   | 88  |
| Conclusion .....  | 90  |
| APPENDIX A: IRB APPROVAL LETTER .....   | 91  |
| APPENDIX B: INFORMED CONSENT .....  | 93  |
| APPENDIX C: UCF REGISTRAR’S APPROVAL TO USE THE VETERAN’S ACADEMIC<br>RESOURCE CENTER DATABASE .....  | 97  |
| APPENDIX D: INITIAL STUDENT VETERAN EMAIL INVITATION TO PARTICIPATE<br>IN SURVEY .....  | 99  |
| APPENDIX E: FOLLOW UP STUDENT VETERAN EMAIL INVITATION TO<br>PARTICIPATE IN SURVEY .....  | 101 |
| APPENDIX F: ONLINE VETERAN SURVEY .....   | 103 |
| APPENDIX G: EARLY TRAUMA INVENTORY SELF REPORT-SHORT FORM (ETISR-<br>SF) .....  | 123 |
| APPENDIX H: STRAUSS MULTIDIMENSIONAL NEGLECTFUL BEHAVIORAL SCALE<br>(MNBS), PERSONAL RELATIONSHIP PROFILE (PRP), NEGLECT HISTORY (NH)<br>SUBSCALE ..... | 125 |

|   |     |
|---|-----|
| APPENDIX I: HOLLINGSHEAD FOUR-FACTOR INDEX SOCIOECONOMIC STATUS.                            | 127 |
| APPENDIX J: IMPACT OF EVENT SCALE – REVISED .....   | 132 |
| APPENDIX K: COMBAT EXPOSURE SCALE .....   | 134 |
| APPENDIX L: APPROVAL TO USE ETISR-SF .....  | 136 |
| APPENDIX M: APPROVAL TO USE MNBS, PRP, NH SUBSCALE .....                                    | 139 |
| APPENDIX N: APPROVAL TO USE CES .....   | 141 |
| APPENDIX O: APPROVAL TO USE HOLLINGSHEAD FOUR-FACTOR INDEX OF<br>SOCIOECONOMIC STATUS ..... | 143 |
| APPENDIX P: APPROVAL TO USE IMPACT OF EVENT SCALE .....                                     | 145 |
| APPENDIX Q: TRAUMA, SES, AND NEGLECT CHARACTERISTICS .....                                  | 147 |
| APPENDIX R: PRE & POST-HOC REGRESSION WEIGHTS FOR EACH VARIABLE<br>MEASUREMENT MODEL.....   | 152 |
| APPENDIX S: POST-HOC GOF STATISTICS FOR EACH VARIABLE MEASUREMENT<br>MODEL .....            | 155 |
| APPENDIX T: FIRST ORDER, THREE FACTOR MEASUREMENT MODEL RESULTS .                           | 157 |
| LIST OF REFERENCES .....  | 160 |

## LIST OF FIGURES

|  |    |
|--|----|
| Figure 1. Depiction of the relationship of early life predictors and adult PTSD severity. .... | 10 |
| Figure 2. Relationship of PTSD severity and DSM diagnostic criteria. ....                      | 11 |
| Figure 3. Depiction of childhood trauma. ....  | 14 |
| Figure 4. Illustration of childhood neglect. ....  | 16 |
| Figure 5. Hollingshead four-factors of SES. ....   | 18 |
| Figure 6. Conceptual Model of Increased Severity in Combat-Related PTSD. ....                  | 53 |
| Figure 7. Hypothesized Model. ....   | 66 |
| Figure 8. First Order, Three Factor Measurement Model. ....                                    | 73 |
| Figure 9. Model 1: Original Trauma Structural Equation Model. ....                             | 74 |
| Figure 10. Model 2: Original Neglect Structural Equation Model. ....                           | 75 |
| Figure 11. Model 3: Revised Trauma Structural Equation Model. ....                             | 75 |
| Figure 12. Model 4: Revised Neglect Structural Equation Model. ....                            | 76 |
| Figure 13. Model 5: Final Trauma Structural Equation Model. ....                               | 76 |
| Figure 14. Model 6: Final Neglect Structural Equation Model. ....                              | 77 |

## LIST OF TABLES

|  |     |
|--|-----|
| Table 1: Evolution of the DSM.....   | 7   |
| Table 2: Operational Definitions of Study Variables .....                          | 56  |
| Table 3: Characteristics of Respondents.....                                       | 69  |
| Table 4: Standardized Regression Weights for Six SEM Models of Combat-Related PTSD |     |
| Severity .....   | 77  |
| Table 5: Comparison of Disaggregated Model GOF .....                               | 83  |
| Table 6: Means ( $\mu$ ) of Various Trauma Dimensions .....                        | 148 |
| Table 7: Incidents of General Trauma among Study Participants .....                | 148 |
| Table 8: Incidents of Physical Trauma among Study Participants .....               | 148 |
| Table 9: Incidents of Emotional Trauma among Study Participants .....              | 148 |
| Table 10: Incidents of Sexual Trauma among Study Participants .....                | 149 |
| Table 11: Means ( $\mu$ ) of Various SES Dimensions.....                           | 149 |
| Table 12: Educational Levels of the Heads of Household.....                        | 149 |
| Table 13: Occupational Levels of the Heads of Household .....                      | 150 |
| Table 14: Number of Physical Neglect Incidents .....                               | 150 |
| Table 15: Number of Emotional Neglect Incidents .....                              | 150 |
| Table 16: Number of Supervisory Neglect Incidents .....                            | 150 |
| Table 17: Number of Cognitive Neglect Incidents .....                              | 151 |
| Table 18: Regression Weights of Final Severity of Combat-Related PTSD Model.....   | 153 |

|  |     |
|--|-----|
| Table 19: Regression Weights of Original Childhood Trauma Model.....                   | 153 |
| Table 20: Regression Weights of Revised Childhood Trauma Model .....                   | 153 |
| Table 21: Regression Weights of Original Childhood SES Level Model .....               | 153 |
| Table 22: Regression Weights of Revised Childhood SES Level Model.....                 | 154 |
| Table 23: Regression Weights of Original Childhood Neglect Model.....                  | 154 |
| Table 24: Regression Weights of Revised Childhood Neglect Model .....                  | 154 |
| Table 25: GOF Statistics of Childhood Trauma Model.....                                | 156 |
| Table 26: GOF Statistics of Childhood SES Model .....                                  | 156 |
| Table 27: GOF Statistics of Childhood Neglect Model.....                               | 156 |
| Table 28: GOF Statistics of Combat-Related PTSD.....                                   | 156 |
| Table 29: GOF Statistics of Original First Order, Three-Factor Measurement Model ..... | 158 |
| Table 30: GOF Statistics of Adjusted First Order, Three-Factor Model .....             | 158 |
| Table 31: Regression Weights of Original First Order, Three-Factor Model.....          | 158 |
| Table 32: Regression Weights of Adjusted First Order, Three-Factor Model .....         | 159 |

## **CHAPTER ONE: INTRODUCTION**

The prevalence rate for Posttraumatic Stress Disorder (PTSD) within the general population is approximately seven percent (NIMH, 2012). In contrast, PTSD among the military/veteran population ranges from 18-30% (Gates et al., 2012; NIMH, 2012). PTSD impacts veterans in numerous areas including unemployment, increased criminal justice involvement, increased treatment costs, divorce, comorbid mental illness, greater levels of domestic violence, homelessness, high college dropout rates, suicide, and long term health problems (Institute of Medicine [IOM] & National Research Council [NRC], 2007).

Differences in research methodologies, cohorts, diagnostic definitions (Yarvis, 2013), types of combat exposure (Hoge et al., 2004; Kulka et al., 1990), variety of military environments (IOM & NRC, 2007), social supports (Fontana & Rosenheck, 1994; Koenen, Moffitt, Poulton, & Caspi, 2004), childhood adversities (Bremner, Southwick, Charney, 1995; Bremner, Southwick, Johnson, Yehuda, & Charney, 1993; Breslau, Chilcoat, Kessler, & Davis, 1999), and the comorbidity of PTSD with other disorders have often resulted in disparate outcomes (National Center for PTSD, 2011). That being said, the literature is in agreement that both: (1) combat exposure; and (2) childhood adversity may impact the severity of PTSD (Brewin, Andrews, & Valentine, 2000; IOM & NRC, 2007). Despite the consequences and costs of combat-related PTSD, there is a paucity of research that specifically examines the effects of childhood adversities upon the increased severity of combat-related PTSD (IOM & NRC, 2007). The dissertation to follow addresses this gap in the literature. The purpose of this study is to investigate the impact of childhood adversities (i.e. abuse, neglect, and poverty) upon the



severity of combat-related PTSD in veteran populations. Specifically, the researcher examines the direct effects of: (1) child abuse; (2) childhood neglect; and (3) childhood poverty (as assessed based on socioeconomic status [SES]) upon the severity of combat-related PTSD.

### **Background**

The economic, social, and human costs for both Iraq (Operation Iraqi Freedom [OIF]) and Afghanistan (Operation Enduring Freedom [OEF]) wars have and will continue to have an impact on the United States for decades to come. OEF and OIF data indicate an excess of 40% of returning veterans are affected with some form of mental illness most frequently, PTSD (Tanielian & Jaycox, 2008). Disparate prevalence rates indicate that between 18 and 30% of veterans have been diagnosed with or screened positive for PTSD (Ramchand et al., 2010; Thomas et al., 2010). The Department of Veterans Affairs (VA) explains that the number of veterans receiving treatment for PTSD has drastically increased from 2004 through 2008 by 60%, from over 274,000 to 442,000 veterans. VA experts quantify OIF and OEF PTSD prevalence rates of at least 20% (U.S. GAO, 2011). Moreover, these percentages are representative of only 53% of the entire deployed population that has sought help through the VA system. Thus actual incidents and prevalence of PTSD among veterans is thought to be much higher than current data indicates (Tanielian et al., 2008).

Tanielian et al. (2008) estimated that the total number of returning veterans through 2011 affected with PTSD would be upwards of 460,000. These same authors suggest that the costs of treating these returning veterans may be in excess of \$1.9 billion (Tanielian et al., 2008). These costs do not consider the additional expense of co-occurring disorders, adjunct treatments,

previous war veterans, or expenditures beyond 24 months of treatment. Tanielian & Jaycox (2008) suggest that future non-treatment seeking veterans will add billions to the expenditures for OEF and OIF PTSD treatment to the VA, DoD, and more specifically community-based providers.

Recent research reported in the *Brown University, Costs of War Program* suggests that PTSD expenditures from these wars may exceed \$534 billion depending on the continuance and severity of the existing conflicts. If the fallout of these wars follows the path of Vietnam disability claims then the total disability and medically related costs of these armed conflicts may exceed \$1 trillion (Bilmes, 2011).

Given the human and economic costs of severe PTSD, researchers have begun looking into identifying variables that may moderate PTSD levels. One emerging area of focus is early life risk factors and correlated rates, severity, and complexity of combat-related PTSD (Rechtman, 2004). Previous research provided a framework for explaining the higher levels of severity and higher rates of PTSD within certain at-risk populations exposed to childhood adversities (Owens et al., 2009).

Information suggesting that early life experiences may impact the development of later life PTSD began appearing in the literature almost a century ago (Jones, Hyams, & Wessely, 2003). More recently, investigators have drawn an association between the greater likelihood of PTSD in combat veterans and prior childhood adversities (Bremner et al., 1993; Breslau et al., 1999; Britten, Corday, & Polk, 1992; Lapp et al., 2005; Regehr, LeBlanc, Jelley, Barath, & Daciuk, 2007). These childhood adversities include sexual, physical, emotional abuse, or

neglect. The evidence supporting this link between childhood adversities and PTSD vulnerability comes from data on significant exposure rates of early childhood trauma in Vietnam veterans with PTSD (Bremner et al., 1993; Gahm, Lucenko, Retzlaff, & Fukuda, 2007; Kulka et al., 1990; LeardMann, Smith, & Ryan, 2010; Zaidi & Foy, 1994). Bremner et al. (1992) and Bremner et al. (1993) found that Vietnam veterans with PTSD had much higher rates of childhood abuse (26%) than those without PTSD (7% percent). Gahm et al. (2007) reported childhood adversity rates of 60.8% physical abuse, over 45% witnessing violence, and 11.6% rates of childhood sexual trauma. Over 22% of the study's participants reported three or more childhood adverse events. LeardMann et al. (2010) research results suggested a 1.5 times increase in the vulnerability of a post-mobilization diagnosis of PTSD in soldiers having two or more childhood traumatic events. Zaidi & Foy (1994) research noted that 45% of Vietnam veterans with PTSD had been exposed to physical trauma as a child.

Evidence has also been found within the literature suggesting that other childhood adversity factors such as low SES or childhood neglect also increase diagnosis rates of combat-related PTSD and severity (Fritch, Mishking, Reger, & Gahm, 2010; King, King, Foy, & Gudanowski, 1996; LeardMann et al., 2010). Previous life traumas, neglect, and low SES, combined with contemporary military personnel screening policies, suggest a continued increased probability and severity of mental health problems for combat-exposed veterans (Foa & Riggs, 1993; Solomon, Mukulincer, & Jakob, 1987). The literature is supportive of a robust link between early life trauma and the development of maladaptive stress responses to even

minimal stimuli from later stress events (Van Wormer & Davis, 2008). However, specific research on the link between early life trauma and combat-related PTSD has been minimal.

In order to develop a basis for further exploration of childhood adversity and PTSD, this chapter will include a full definition of PTSD, review the existing scientific evidence on how PTSD develops and effects combat-exposed veterans, and determine what predictors or risk factors suggest greater severity of later life combat-related PTSD symptoms.

### **What is PTSD?**

Although called many other names through the centuries, it can be argued, the diagnosis of PTSD is new only in its name. Prior to being called PTSD, the disorder had been termed demonic possession, railway spine, soldiers' heart, hysteria, battle fatigue, and shell shock to name but a few (Bannister, Mahoney, & Dao., 2012; Nash, 2007a; Rosen, Frueh, Elhai, Grubaugh, & Ford, 2010). The disorder had previously been codified within the *DSM-I* as *stress response syndrome* (as cited in Lamprecht & Sack, 2002). Regardless, PTSD became a documented mental health disorder in 1980 when the American Psychiatric Association (APA) included it as a diagnosable mental disorder in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-III)* in response to the Vietnam Veteran's lobby efforts (APA, 1980; Wakefield & Horwitz, 2010).

As currently described in the *DSM-IV-TR*, PTSD is a mental disorder under the umbrella category of anxiety disorders (APA, 2000). PTSD typically results from a physical or psychological traumatic event or stressor and manifests through persistently reliving and avoiding specific stimuli, as well as exhibiting increased or hyperarousal as defined within the

criteria of the *DSM-IV-TR* (APA, 2000). The range of traumatic events consists of, but is not limited to, domestic violence, terrorism, war, community violence, medical or physical trauma, death of a loved one, divorce, natural disasters, assault, accidents, rape, and sexual or physical abuse (APA, 2000). The key factor in the diagnostic criteria is that the individual perceives the event or events as life-threatening to self or others (APA, 2000; Prasad, 2012).

As a result of advancements in PTSD research, these diagnostic criteria have evolved from the original conceptualization in the *DSM-III* (1980) to the current model within the *DSM-IV-TR* (APA, 2000). Figley (1978) first posited that the severity of trauma was the primary factor in the development of PTSD. The *DSM-III* was the first acknowledgement that trauma was thought to be the primary influence in the diagnosis of PTSD which has continued to be adjusted through the subsequent iterations (McKeever & Huff, 2003). Through the changes of the *DSM*, it is helpful to note that the professional viewpoint moved from the traumatic event or stressor being primarily causal to the consideration of other risk or vulnerability factors impacting the development and severity of PTSD (Bannister et al., 2012). To assist in bringing clarity to the progressive *DSM* changes and subsequent impact upon the symptomology of PTSD, Table 1 illustrates the evolution of the symptom clusters used in diagnosing of PTSD since 1980 through the *DSM-IV-TR* (2000). It is through these symptoms that researchers can view and measure PTSD severity as a result of a childhood adverse event exposure (Clancy et al., 2006; Cloitre et al., 2009; Horowitz, Wilner, & Alvarez, 1979; Weiss, 2004; Weiss, 2007; Weiss & Marmar, 1997).

Table 1: *Evolution of the DSM*

| DSM Edition     | Diagnostic Criteria (Symptom Clusters)  |
|-----------------|---|
| DSM-III, 1980   | <ol style="list-style-type: none"> <li>1. Re-experiencing</li> <li>2. Numbing</li> <li>3. Two of six miscellaneous symptoms</li> </ol>          |
| DSM-III-R, 1987 | <ol style="list-style-type: none"> <li>1. Re-experiencing</li> <li>2. Persistent avoidance or numbing</li> <li>3. Increased arousal</li> </ol>  |
| DSM-IV, 1994    | <ol style="list-style-type: none"> <li>1. Re-experiencing</li> <li>2. Persistent avoidance and numbing</li> <li>3. Increased arousal</li> </ol> |
| DSM-IV-TR, 2000 | <ol style="list-style-type: none"> <li>1. Re-experiencing</li> <li>2. Avoidance and numbing</li> <li>3. Increased arousal</li> </ol>            |

*Note.* American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.) Washington, DC: Author. American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev.) Washington, DC: Author. American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.) Washington, DC: Author. American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.

It is generally agreed that while trauma can create manifestations such as PTSD, not all who are exposed to a traumatic event develops PTSD (Banister et al., 2012). The diathesis-stress model provides a framework for understanding the factors or variables involved in the disorder's etiology (Deykin & Buka, 1997; Elwood, Hahn, Olatunji, & Williams, 2009; Yarvis, 2013). This particular theory explores both risk and vulnerability factors and also considers the environmental system as an interactive component regarding the genesis and maintenance of the disorder. The diathesis-stress model not only gives reasons for the non-development of the disorder in some, it provides a connective explanation for biological, psychological, and

environmental factors or variables that work together across the lifespan to create a greater risk and severity of PTSD (McKeever & Huff, 2003). Simply, individuals who are at the greatest risk for developing PTSD have accumulated more risk factors or vulnerabilities within their lifetime. These individuals will need less of a traumatic event to trigger PTSD development. Those with fewer risk factors would need a more prominent traumatic event to initiate PTSD development and may never manifest the disorder (McKeever & Huff, 2003). This perspective directly relates to PTSD symptom development, severity, longevity, and an individual's ability to recover (Elwood et al., 2009). Ultimately, this theoretical approach can provide insights to preventative treatments or policy changes impacting those future enlistments into military service and subsequent combat deployments (McKeever & Huff, 2003).

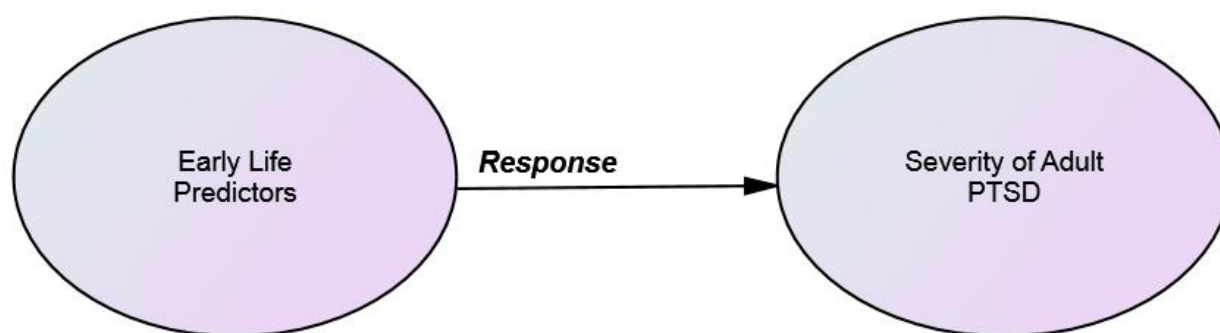
PTSD prevalence estimates are established by World Health Organization (WHO) and the National Institute of Mental Health (NIMH). The NIMH indicates that the lifetime prevalence rate of PTSD among American adults is 7.8% and 4.0% for children or adolescents (NIMH, 2012). Based on the most current census figures this roughly equates to over 24.1 million adults and 12.3 million children or adolescents experiencing PTSD within America at some point in their lives (U.S. Census Bureau, 2013). Approximately 5.2 million American adults have the symptomology that meets the criteria for PTSD in any given year (National Center for PTSD, 2011). Sixty percent of all males and 50% of females experience at least one traumatogenic event within their lifetimes (Prasad, 2012). However, women are twice as likely to develop PTSD within their lifetime (National Center for PTSD, 2011). To further place PTSD

in context, Bremner (2002) posits that PTSD is 10 times as prevalent as cancer and eight times more common than schizophrenia.

### **Severity and Complexity of PTSD**

While prevalence rates provide a partial framework for explaining the impact of PTSD it does not speak to the predictors of severity or complexity of the disorder within the individual. The aspects of PTSD severity and complexity are what contribute to the increased costs, greater levels of human suffering, and more difficulty in treating the disorder (IOM & NRC, 2007; Walker et al., 2003). The robust volume of this literature clearly provides the rationale for further research on the relationship of risk and protective factors, as well as mediators, and moderators impacting the severity of symptoms, chronicity, and individual impairment (APA, 2000; Cloitre et al., 2009; Glover et al., 2013; IOM & NRC, 2007; Van Voorhees et al., 2012). These risk factors or predictors can include, but are not limited to, adverse childhood experiences in the form of cumulative trauma and neglect, low SES, lack of social supports, age, combat exposure, gender, race, and family history (Cloitre et al., 2009; IOM & NRC, 2007). Figure 1 illustrates the relationship of these early life predictors and the severity of PTSD.



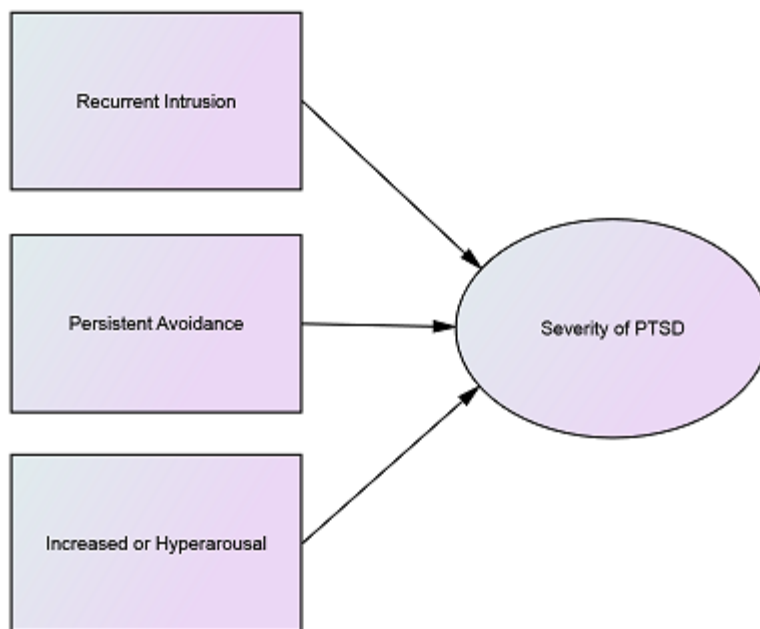


*Figure 1.* Depiction of the relationship of early life predictors and adult PTSD severity.

Research has consistently illustrated the associations of the severity of adult PTSD symptoms with childhood adverse experiences (Berntsen et al., 2012; Clancy et al., 2006; Pratchett & Yehuda, 2011; Schoedl et al., 2013). Severity of combat-related PTSD is further examined within the literature regarding military or veteran populations by demographics, family history and factors, gender, current age, age at trauma onset, race, number of combat tours and level of combat stressor exposure, as well as child abuse, neglect, and low SES (Bremner et al., 1993; Horesh, Solomon, Zerach, & Ein-Dor, 2011; IOM & NRC, 2007; Lapp et al., 2005).

PTSD severity is typically gauged through the symptom clusters and chronicity of the clinical manifestations. The level of severity can be measured using various standardized survey instruments that are subjective in nature, but can provide a quantifiable dimension of current effects or symptoms causal to a specific traumatic event (Horowitz et al, 1979; Weiss, 2004; Weiss, 2007; Weiss & Marmar, 1997). The VA protocols also employ tools that measure these symptoms for purposes of PTSD disability compensation and pension eligibility (IOM & NRC, 2007). For purposes of this analysis the PTSD dimensions measured are those used by the VA that mirrors the *DSM-IV-TR* symptom clusters of intrusion, avoidance, and hyperarousal. These

measurable domains have utility not only to veteran populations, but also to various at risk populations exposed to traumatic events. Figure 2 depicts the relationship of these domains to PTSD severity as explained in the *DSM-IV-TR* (2000). The relationships of these constructs provide a basis for examining the increased costs, and greater human suffering of our military, veterans, and their families. This view also provides the opportunity to use innovative public affairs tools to compare and contrast alternative policy strategies capable of addressing these types of public problems (Salamon, 2002).



*Figure 2.* Relationship of PTSD severity and DSM diagnostic criteria.

### **PTSD in Combat-exposed Veterans**

Although prevalent within the general population, PTSD found in the military is significantly more prevalent than in the general population (Nash, 2007a). Combat-related

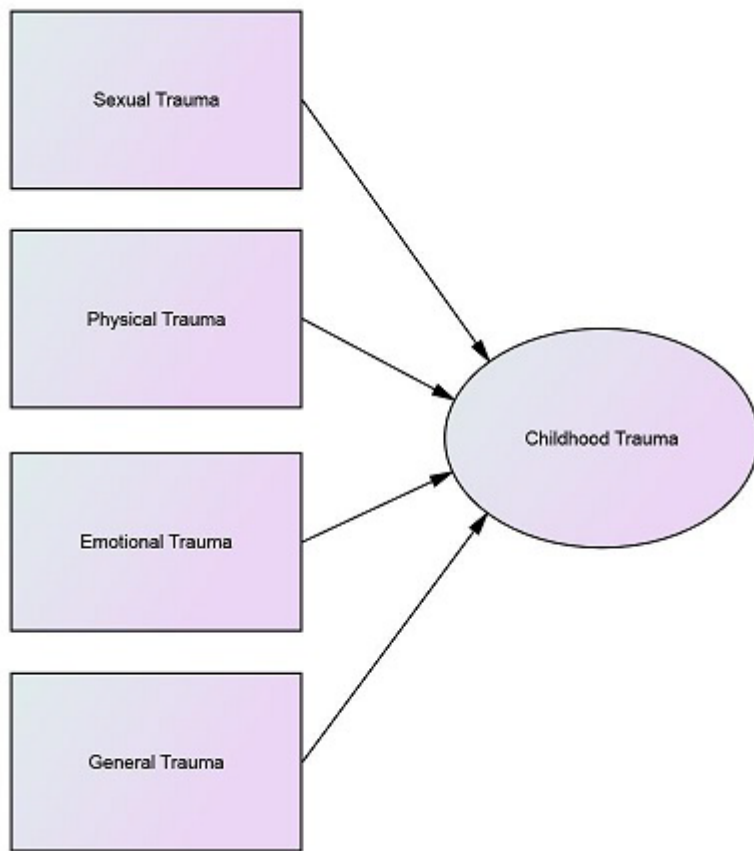
PTSD is defined as a severe stress reaction to the traumas of combat-related activities (Nash, 2007b). These traumatic events in combat or combat-related activities include exposure to life-threatening experiences, being shot at, shooting someone, seeing another service member shot or blown up in an explosion, seeing death, and experience of military sexual trauma (MST) (National Center for PTSD, 2011).

Combat-related PTSD prevalence rates are significant within the current American military conflicts with rates of up to 30% (Ramchand et al., 2010). There is some dialogue about the notion that PTSD is an OEF or OIF unique disorder. However, during World War I almost one million American service members, or upwards of 40% of all veterans were diagnosed with neuropsychiatric breakdowns. Neuropsychiatric breakdowns were the precursor to our modern day PTSD diagnosis (Pois & Oak, 2007; Wakefield & Horwitz, 2010). Korean War rates reported were approximately 25% per year for neuropsychiatric invisible wounds similar to that of modern day combat-related PTSD (Pois & Oak, 2007). Thirty percent of Vietnam veterans and one in 10 Gulf War (Desert Storm) veterans were diagnosed with PTSD (National Center for PTSD, 2011). This growing body of research on combat-related PTSD indicates that PTSD is also associated with later life medical problems, shorter life spans, increased drug use, suicides, higher levels of motor vehicle accidents, higher health care costs, and a greater risk of further injuries or traumas associated with the emerging continuum of the effects of combat-related PTSD (Boscarino, 2007). The magnitude and severity of PTSD and PTSD-related outcomes present serious public affairs challenges and implications for an increasing burden on both public and private organizations, and more recently communities-based economic resources. To find

the appropriate tools for these solutions, it is critical to consider risk factors, vulnerabilities, or other variables associated with the overarching impact and severity of PTSD in this population.

### **Childhood Trauma**

One of the risk factors for PTSD is the occurrence of childhood trauma (Bremner, 2002; Bremner et al., 1993). As previously discussed the theoretical underpinnings of the diathesis-stress theory provides one framework for explaining the heightened PTSD vulnerability in survivors of childhood trauma. The current research postulates neurological changes in those impacted by early childhood trauma that result in greater vulnerability for the development of PTSD when exposed to later life stressful experiences (Bremner, 2002; Bremner et al., 1993; Jarvis, 2013; Seifert, Polusny, & Murdoch, 2011). These traumas also can precipitate later life problems in many forms such as increased medical diagnoses, psychiatric issues, intimate partner violence (IPV), substance abuse, and an increased possibility of risky behaviors and exposure to additional adult traumagenic incidents (Zlotnick et al., 2008). The range of possible childhood traumas include sexual, physical, emotional abuse or maltreatment, school or community violence, domestic violence, natural disasters, medical traumas, accidents, refugee or war zone trauma, terrorism, and grief (Child Welfare Information Gateway, 2008; National Child Trauma Stress Network, 2012). These traumas can be condensed into the categories of sexual, physical, emotional, and general traumas. Figure 3 shows the relationships of these measures of childhood trauma categories that will be used for purposes of this research as expressed in Bremner, Vermetten, & Mazure (2000).



*Figure 3.* Depiction of childhood trauma.

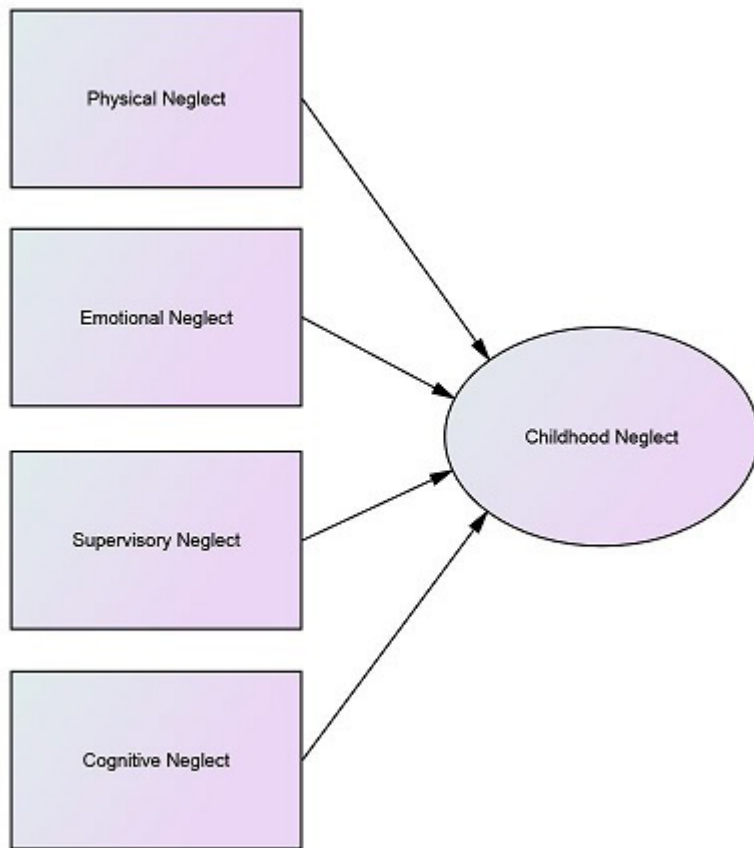
There is a paucity of literature regarding the prevalence rates of various childhood traumatogenic incidents, specifically in the realm of physical and emotional abuse. Existing research confirms the epidemic trends of child abuse and the increasing number of survivors. For example, a large cross-sectional study (N=833) screening adult primary care patients for childhood trauma indicated between 44 and 50% of male and female patients reported physical, sexual, or emotional abuse during their childhoods (Weinreb et al., 2010). Sexual abuse survivors in the United States are estimated at approximately 39 million, which does not account for other traumas or abuse. These significant numbers equate to one in four girls and one in six

boys that are sexually violated prior to their 18<sup>th</sup> birthday (Schober, Fawcett, Thigpen, Curtis, & Wright, 2012). A National Incident Study (2005-2006) also found that 58% of all children have been physically abused and another 36% emotionally abused (Office of Planning, Research & Evaluation, 2010). Although the more recent studies indicate an overall reduction in child maltreatment there were still over 3.3 million cases of child maltreatment involving 6 million children reported in 2009. These figures underscore the significance of exploring the impact of child abuse on PTSD (Giardino, Hanson, Hill, & Leventhal, 2011).

### **Childhood Neglect**

Another risk factor explored within this study is childhood neglect. There are several perspectives for analyzing the neglect construct (Slack, Holl, Altenbernd, McDaniel, & Stevens, 2003; Strauss & Kantor, 2005). Neglect is typically defined as the failure of a caregiver to meet a child's basic needs. This can occur in the form of failure to provide physical, emotional, supervisory, or the cognitive needs of a child, which generally places the child's health or safety at risk (Child Welfare Information Gateway, 2008; Straus & Kantor, 2005). Care must be used in defining childhood neglect in too complex or broad terms to be found useful for statistical analysis (Strauss & Kantor, 2005). For purposes of this study childhood neglect will be measured by quantifying the perceived neglectful behaviors of the primary caregiver through a standardized measure (Strauss & Kantor, 2005). The analysis used in this research employs the diathesis-stress theoretical model previously discussed for conceptualizing symptom severity in adult onset PTSD. It is through the stress vulnerability model that linkages between childhood neglect and adult outcomes can be explicated (Ingram & Luxton, 2005; Yarvis, 2013). Figure 4

shows the relationships of these variables to childhood neglect as expressed in Strauss & Kantor (2005).



*Figure 4.* Illustration of childhood neglect.

Neglect as a form of child maltreatment is the most common type and accounts for almost 60% of cases that are reported to Child Protective Services. Much of the current research directly associates child neglect with lower SES or poverty (Nikulina, Widom, & Czaja, 2011). A 2009 study exploring predictors of complex PTSD reported that almost 50% of the adult participants with diagnosed PTSD indicated childhood neglect as a trauma (Cloitre et al., 2009).

Of the 772,000 survivors of child maltreatment in 2008, over 71% of the cases were considered neglect (Kazemian, Widom, & Farrington, 2011). Sexual and physical abuse rates have been trending downward within the American culture over recent years, while the incidence of neglect has been rapidly increasing (Kazemian et al., 2011). There is a dearth of research addressing mid to long-term implications of neglect upon the developing human being (Kazemian et al., 2011).

### **Socioeconomic Status**

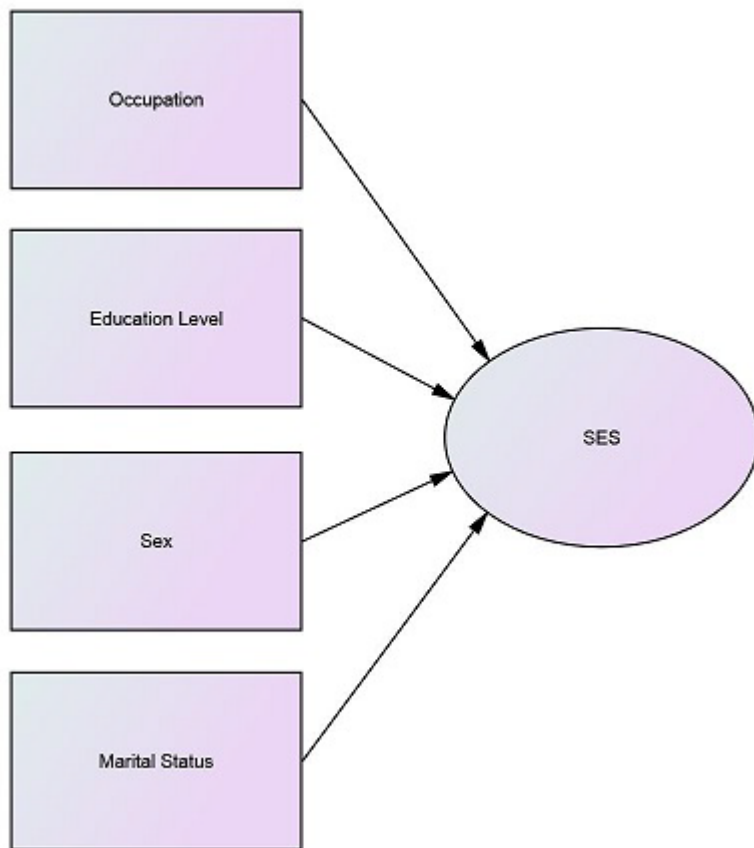
SES is a construct used in combination with a vast variety of variables within social science research (Cirino et al., 2002). SES is usually defined within the parameters of social standing or class. This is typically quantified through education level, occupation, and sometimes income levels, and is relevant to all levels of social science research, study, clinical practice, and community advocacy (American Psychological Association, 2012a).

SES has been shown to have direct links to psychological, physiological, human functioning, and development across the lifespans of individuals. Low SES, sometimes applied interchangeably as poverty, is related to greater family violence, lower educational levels and intelligence quotients (IQ), higher rates and severity of mental illness, greater medical challenges, and predictors of child abuse and neglect (American Psychological Association, 2012b; Cirino et al., 2002; Hudson, 2005).

Measuring SES is somewhat more controversial as evidenced by the array of survey instruments available to the research community (Cirino et al., 2002). However, Hollingshead (1975) four-factor index of SES continues to be the gold standard among the various tools of



SES research and is used within this dissertation to determine the SES of the participants (Cirino et al., 2002). Hollingshead (1975) and Hollingshead & Redlich (1958) explain that there is clearly an imbalanced status structure within the American society and these inequalities provide the basis for differences in behaviors as a result. Figure 5 illustrates the four-factors of SES as explored within the Hollingshead (1975) research. This shows the relationship of these factors to the level of SES which are used within this dissertation.



*Figure 5.* Hollingshead four-factors of SES.

A large volume of research supports the relationship of low SES with high rates of mental illness. Researchers have consistently measured the variables of education level, occupation, and levels of income to determine these associations. Investigators have also integrated the theories of social causation and social selection to further support the connections between low SES and higher rates of behavioral health issues (Aneshensel, 1992; Hudson, 2005; Johnson, Cohen, Dohrenwend, Link, & Brook, 1999; Ritscher, Warner, Johnson, & Dohrenwend, 2001; Turner & Marino, 1994).

### **Purpose of the Study & Organization of the Dissertation**

The purpose of this dissertation is to explore predictive associations of childhood adversities as they relate to the increased severity of combat-related PTSD within our veteran populations. A comprehensive review of the theoretical and empirical literature regarding childhood predictors and the associations with the severity of combat-related PTSD will be examined. Subsequent to a clear understanding of the directionality of the literature and supportive theories, a quantitative statistical analysis will be employed to test targeted hypotheses and answer a focused research question regarding the variables within this study. Finally, the results of that hypotheses testing will be analyzed and discussed.

### **Relevance to Public Affairs & Social Work**

Public Affairs, a relative new field of research and study, is an interdisciplinary profession that combines organizational, administrative, and community science. These domains partner to address problem solving from an organizational perspective and are influenced by the complexities of various external environments (Breen, Matusitz, & Wan, 2009). Social work, an

integral part of public affairs, compliments the discipline through social services and social policy practices. The concepts and challenges of childhood predictors, PTSD severity levels, and the human and economic impact of these variables as measured through the lens of war is intimately tied to public affairs and its various interdisciplinary sciences (Breen et al., 2009). It is through these public affairs tools that necessary partnerships can evolve to address the types of organizational, cultural, and policy problems emerging as a result current enlistment regulations of the DoD. Therefore, the results of this study can build upon the unique public affairs interdisciplinary networks which are capable of resolving complex social problems such as these for our soldiers, sailors, airmen, marines, and their families. Improving these screening processes to reduce the intergenerational future levels of catastrophic and potentially irreversible traumatogenic effects of exposure to war trauma is imperative (Flynn & Hussan, 2010).

Chapter two will identify, analyze, and synthesize pertinent historical and contemporary literature to form a conceptual and research foundation explaining the relationships between childhood adversities and the level of severity of PTSD in combat-exposed veterans. Theoretical foundations will be examined and utilized to guide the specific research questions and hypotheses of this analysis.

## **CHAPTER TWO: LITERATURE REVIEW & THEORETICAL FOUNDATIONS**

### **Introduction**

The purpose of the current investigation is to examine the potential impact of three childhood adversities, trauma, neglect, or low SES (childhood poverty), on the severity of combat-related PTSD. The literature related to understanding the background and history of PTSD in general and combat-related PTSD in particular, is reviewed. Next, this chapter includes a review of the literature assessing the connection between childhood adversity and severity of adult PTSD. Emphasis will be given to literature that focuses on the development and severity of PTSD in adults who have combat-related PTSD. Conceptual and operational definitions of study concepts and variables will be delineated. Further, this chapter will examine theoretical frameworks that have utility for explaining and predicting the linkages between childhood adversity (neglect, abuse, and poverty) and the severity of combat-related PTSD. Lastly, established theories that have been previously used to understand the connections between the childhood adversity and the severity of adult PTSD will be examined for their utility in guiding this investigation.

### **Statement of the Problem**

Combat trauma, when compounded with prior childhood adversities, appears to negatively impact the difficulties of re-entry for veterans (Cabrera, Hoge, Bliese, Castro, & Messer, 2007). This is noteworthy as 66% of American children now experience some form of a traumatic event by the time they reach their 16<sup>th</sup> birthday (American Psychological Association, 2012b). Over 40% of our reintegrating military veterans are returning with significant mental

health issues led by combat-related PTSD (Tanielian & Jaycox, 2008). Combat-related PTSD rates exceed 18% and yet, only 50% have sought assistance, representing a large volume of undiagnosed mental health problems presenting major public health challenges in the U.S. (Tanielian & Jaycox, 2008). Combat-related PTSD affects not only the military and veteran populations, but also our society at large through increased economic costs, child abuse, intimate partner violence, suicides, divorce rates, alcohol and drug use, homelessness, and loss of jobs (Howell & Wool, 2011). Despite the fact that the literature suggests that childhood adversities appear to predispose our service members to a greater vulnerability to combat-related PTSD (Flynn & Hassan, 2010), the screening processes of the Department of Defense (DoD) do not include measurement of childhood adversity factors such as childhood abuse, neglect, or child poverty (National Research Council, 2006). Given that the severity of combat-related PTSD may be, in part, fueled by epidemic rates of childhood adversities, this dissertation will explore the relationship of various childhood adversity predictors and their impact upon the greater severity of combat-related PTSD. Evidence for the impact of childhood adversity on the severity of combat-related PTSD could lead to important new avenues in the screening for risk for combat-related PTSD as well as new avenues for prevention of social problems secondary to combat-related PTSD.

### **Definition of Terms**

Definition and operationalization of terms used in this study is provided to assist in interpreting and understanding the literary content, theoretical frameworks, and the posited relationships among these concepts.

Childhood Adversities. For purposes of this study, childhood adversities include certain negative events which occur from 0-18 years of age and prior to military service. In this study childhood adversities include childhood trauma (sexual, physical, emotional, and general traumas), neglect, low socioeconomic status and/or a combination of these variables that has the potential to bring harm (physical, psychological, emotional, or developmental) to the child involved (Berger, 2003; Bremner et al., 2000).

Childhood Trauma. Childhood trauma, which for purposes of this study occurs from 0-18 years of age and prior to military service (Berger, 2003) is defined as, “an injury to the body or psyche by some type of shock, violence, or unanticipated situation” (Barker, 2004, p. 441). Bremner et al. (2000) further quantifies four domains that summarize the scope of childhood trauma; general, physical abuse, emotional abuse, and sexual abuse for purposes of this research.

- Childhood general trauma, for purposes of this research, is defined as those events occurring through the developmental periods between 0-18 years of age and prior to military service consisting of stressful occasions that include events such as natural disasters, serious accidents, personal injury or illnesses, death of parent or caregiver, divorce or separation of parents, death or accident involving a family member such as a brother or sister, violence within the family, violence against the family, family mental health or breakdowns, family embedded alcoholism or drug addiction, or observing someone murdered (Bremner et al., 2000).
- Childhood physical trauma, for purposes of this research, is defined as those events occurring through the developmental periods between 0-18 years of age and prior to

military service consisting of the physical detention, touching, or restraint for purposes of harming another (Bremner et al., 2000).

- Childhood emotional trauma, for purposes of this research, is defined as those events occurring through the developmental periods between 0-18 years of age and prior to military service, consisting of communicating to another with the clear resolve to demean or vitiate someone and bring harm (Bremner et al., 2000).
- Childhood sexual trauma, for purposes of this research, is defined as those events occurring through the developmental periods between 0-18 years of age and prior to military service unsolicited sexual activities precipitated completely for the indulgence of the offender. In addition to a purely sexual purpose, these sexual activities can also be for controlling or vitiating the object individual (Bremner et al., 2000).

Childhood Neglect. The conceptualization of neglect has historically and broadly defined as the failure of a parent, guardian, or other caregiver to provide for a child's basic needs (Strauss & Kantor, 2005). This neglect creates unfulfilled emotional and physical needs within the family, specifically impacting the children. The focus of neglect for this research is steeped within the perspectives of Strauss & Kantor (2005) wherein neglect is conceptualized as separate from doing harm, maltreatment, cause or motivation, but rather as failed behaviors. These behavioral failures are on the part of the responsible primary caregiver or caregivers in the family system who acts in a manner contrary to culture norms, and in ways that do not meet the developmental requirements of the child. Strauss & Kantor (2005) explain that while many neglect scales measure neglectful behaviors combined with harm or maltreatment, it is essential

to separate these constructs for clarity of measurement. Strauss & Kantor (2005) also provide clarity in their conceptualization of neglect through their four neglect domains defined as follows.

- Physical needs: Failure to provide necessary food or shelter, lack of appropriate medical care, or not providing basic clothing and cleanliness (Strauss & Kantor, 2005).
- Emotional needs: Inattention to a child's emotional needs or perceived problems, lack of love or affection, comforting the child, or failure to provide supportive behaviors or companionship (Strauss & Kantor, 2005).
- Supervisory needs: Failing to establish appropriate or any boundaries, not addressing behavioral issues, failure to know where the child is at or who they are with at any given time, failing to appropriate or adequately supervising the child or related activities (Strauss & Kantor, 2005).
- Cognitive needs: Interacting with the child to include reading and playtime activities, helping and explaining life events when the child lacked understanding (Strauss & Kantor, 2005).

Childhood Socioeconomic Status (SES). Socioeconomic status, a construct, is commonly operationalized as the social standing or class of an individual or group measured as the combination of education, income and occupation (APA, 2012a). Low SES is typically used interchangeably with childhood poverty within the literature and is considered the same for this study. For purposes of this research SES shall be measured through education level, occupation, sex (gender), and marital status. The latter two variables are included as a portion of the



mathematical computation on overall level of SES as outlined in Hollingshead & Redlich (1958) & Cirino et al. (2002).

Military and Veterans. For purposes of this study, military and veterans will encompass only American uniformed combat services as identified by the branch of service regardless of their current or past affiliation or status; Air Force, Army, Coast Guard, Marine Corps, and Navy to include reserve and National Guard components (Blaise, Saathoff-Wells, Pereira, Wadsworth, & Dombro, 2012).

Combat Exposure. For purposes of this dissertation, combat exposure is defined according to Keane et al. (1989) definition and the National Center for PTSD (2012) definition as exposure to combat-related events or stressors including the following events:

- Having engaged in combat patrols or dangerous duty.
- Having been under enemy fire.
- Having been surrounded by the enemy.
- Having some percent of unit killed, wounded, or missing in action.
- Having fired rounds at an enemy.
- Observed others being hit by incoming or outgoing rounds.
- Having been in danger of being injured or killed in the line of duty.

Combat-related Exposure. Banister et al. (2012) expand the definition of combat-exposure to include those events adjunct to a combat situation or deployment in support of a combat situation. For purposes of this research, combat exposure and combat-related exposure will be

used interchangeably as it relates to the military veteran study participants and their combat-related PTSD.

- Direct or indirect contact with war exposed victims, situations, stories, visualizations, or other adjunct stimuli (Banister et al., 2012).
- Military sexual trauma (MST) (Banister et al., 2012).

Combat or Combat-exposed Veterans. A present or former member of the armed forces who was directly or indirectly involved in or exposed to combat operations within or in support of a war zone against an enemy combatant as defined by VA (Vet Center, 2011). For purposes of this research the type of military discharge is immaterial and not relevant.

Combat-related PTSD. PTSD is defined as the set of clinical symptoms of, derived or resulting from the direct or indirect act or exposure to military combat, victims, situations, military sexual trauma (MST), stories, visualizations, or other adjunct stimuli. For the purpose of this dissertation, those veterans who are assigned to the category of having combat-related PTSD include those whose PTSD symptoms were diagnosed through the *DSM* (regardless of version) by a clinically licensed professional (National Center for PTSD, 2012), and/or who have received treatment for PTSD, and/or have been informed of having symptoms of PTSD. For the purpose of this dissertation the specification of combat-related PTSD also includes additional criteria set forth in Bannister et al. (2012), so as to include the large percentage of participant veterans who have not yet sought help for their symptomology (Tanielian & Jaycox, 2008; Tanielian et al., 2008). This includes veterans who may have been told that their symptoms portray PTSD, completed a self-screening on a specialized website, or have received treatment

through an agency to include the “Vet Centers” which assists with reintegration and specialized counseling and referrals rather than specifically diagnosing PTSD as a prerequisite for counseling or treatment (National Center for PTSD, 2013; Vet Center, 2012).

Traumatic Event/s. An event or events that are threatening to the individual or someone close to the individual that is adjunct to feelings or perceptions of intense horror, fear, and helplessness. These reactions may be different in children. These traumatic events may include, but are certainly not limited to this specific list, assault, sexual molestation, community violence, natural disasters, combat, kidnapping, exposure to terrorism or related acts of violence, torture, being jailed or detained, the death of someone close, receiving a diagnosis of a terminal disease or disorder, a violent injury, a car wreck, the observing of dead bodies or parts of bodies, or military sexual trauma by rape, harassment, and molestation (APA, 2000; Bremer, 2002).

These definitions will provide a greater understanding of the remaining parts of this dissertation. The next portion of the chapter is a review of the historical progression of the literature on combat-related PTSD.

### **Historical Overview: PTSD and PTSD in the Military**

Some of the first references to PTSD come from the 19<sup>th</sup> century. Hermann Oppenheim (1889), a German Neurologist, initiated the focus on PTSD by first using the terms “traumatic neurosis” in an attempt to conceptualize the trauma he was observing in his clients (as cited in Schumber & Lee, 2009). Oppenheim’s conceptualization of trauma exposure began the protracted argument regarding the theoretical implications of the cause and progression of PTSD (as cited in Schumber & Lee, 2009). Oppenheim postulated that psychological trauma caused

organic changes within the brain causing symptom manifestations (Yarvis, 2013). In contrast to Oppenheim's view, the French neurologists Charcot & Janet began a dialogue which argued opposite views on the causal etiology of the disorder (Yarvis, 2013; as cited in Schumber & Lee, 2009). Charcot's work supported the hypothesis that biological processes predisposed individuals to traumatic events, while Janet posited that it was not a traumatic event that caused the disorder, but rather predictive ideas, memories, or cognitive representations from previous life events that provided the stimulus for the disorder to begin (Janet, 1920/1924). Freud also postulated that it was not specifically a traumatic event, but the developed vulnerabilities of the individual that proceed and stimulate further symptoms from trauma exposure (Breuer, & Freud, 1893/1957). Although many of these early theorists provided inaugural insights to the study of trauma, it was the seminal work of Sandor Ferenczi that provides the framework using psychoanalytical theory to connect childhood adversities to later life trauma development (Ferenczi, 1932/1988; Ferenczi, 1920/1955a; Ferenczi, 1929/1955b; Ferenczi, 1932/1955c).

World War I was the next pivotal period for an increased understanding of trauma and its effects upon a human being, especially those in military combat service (Jones, Fear, & Wessely, 2007). Until this time, war related trauma was considered a purely neurological disorder. From World War I forward war-related trauma was conceptualized as involving both physical and emotional based dysfunction, laying the foundation for further research in the areas of trauma exposure especially in combat operations. This emerging contemporary construct was continued into World War II inspiring a more determined approach by the United States War Office in the researching of shell shock. The War Office clearly believed a connection between neurological

and psychology dimensions of the disorder and styled their disability claims to support such a belief. However, the debate about a universal diagnosis languished until the 1980s (Jones, et al., 2007).

By the early 1980s the numbers of Vietnam veterans seeking treatment and filing disability claims was growing at an unanticipated rate that challenged the service delivery system (Atkinson, Henderson, Sparr, & Deale, 1982). These unmanageable numbers combined with the lack of professional support for a PTSD diagnosis led to significant clinical and political challenges during these initial years of the PTSD evaluation process. At this point in time PTSD was not considered a problem that was connected to military combat service and had little relevance to practioners, administrators, and interdisciplinary service providers in general (Atkinson et al.,1982). In fact, although many veterans favored this reluctance in the military to diagnose and treat PTSD, this professional ambivalence led to closures of Vet Centers in 1984 and a VA plan to eliminate health services for certain types of disorders such as PTSD.

In the mid-1980s, with the advent of expanded studies and more supportive government reports, the VA's view on PTSD again shifted (Figley & Nash, 2007). This changing perception was partially fueled by interest within the growing numbers of combat veterans. Simultaneously, there was a revised PTSD entry in the 1980 *DSM-III*, which expanded the definition of trauma related features and symptoms to clearly include groups of returning Vietnam veterans (APA, 1980; Foy, Sipprelle, Rueger, & Carroll, 1984). Although academic interest in combat-related PTSD was increasing, most of the early to mid-1980s literature did not consider any pre-military causation, relationships, or associations between childhood adversity and the increased severity

of combat-related PTSD (Bremner et al., 1993; Foy et al., 1984; Solkoff, Gray, & Keill, 1986). The initial research viewed the relevance of pre-military variables only from a post-combat adjustment perspective rather than through a pre-combat trauma causation or associational lens (Foy et al., 1984). One of the major challenges during this era of early PTSD research was navigating through the political and cultural controversies rapidly increasing from the Vietnam aftermath as well as the new and much debated diagnostic criteria for PTSD within the *DSM-III*. Some researchers reported that the diagnosis was simply invented to quell the political upheaval of the returning anti-social Vietnam veterans, while other researchers argued with the clinical criteria for the diagnosis of PTSD (McNally, 2003; Summerfield, 2001). The debate regarding criteria and conceptual frameworks continues today and appears to be escalating in light of the upcoming *DSM-5* (Rosen & Frueh, 2010). However, these discussions marked a beginning point in the analysis of PTSD within the constructs of risk factors, vulnerability, and resilience, and overall a major transition in the mental health's profession's epistemological and conceptual view of trauma (Rechtman, 2004).

### **The Uniqueness of Combat-related PTSD**

Until recently, the uniqueness of combat-related exposure has been under-researched and inconsistent (Nash, 2007a; Naifeh et al., 2013; Olusanya, 2012). Significant differences between prevalence rates of combat-related rates of PTSD and community rates of PTSD are one distinguishable difference. A Gates et al. (2012) study of 229 research articles examining the prevalence of PTSD in both civilian and military populations, noted that while the prevailing American PTSD rates range between 7 to 8% lifetime rate the lifetime rate for veterans ranges

between 14-16%. Investigators did conclude that while disparate prevalence rates clearly exist within the literature, PTSD is notably higher in the military compared to the general American population (Gates et al., 2012).

Other research explores and supports the hypothesis that combat-related PTSD manifests with greater severity than PTSD in the general population (Castillo, C'De Baca, Conforti, Qualls, & Fallon, 2002; Fontana & Rosenheck, 1994). A 2013 VA PTSD study compared 187 military veterans and 47 adult civilian crime victims. The findings indicate that combat-related trauma is associated with greater PTSD symptom severity than that of other forms of traumatic exposure (Naifeh et al., 2013). The relationship of combat exposure and more severe PTSD symptoms is also supported in an international sample. A 1996 Israeli study compared four groups of adults with PTSD who had been exposed to various types of traumas, combat, civilian terrorism, and work and traffic accidents. The results revealed combat-exposed participants were significantly more impaired as evidenced by increased symptom severity than any of the other categories (Amir, Kaplan, & Kotler, 1996).

Although the literature supports that combat exposure increases PTSD severity, research also indicates that attitudes, perceptions, and social meaning of events tend to moderate PTSD intensity and provides some explanation of how military culture, norms, and processes influence the incidence of posttraumatic stress in general (Ben-Ya'acov, Amir, Arzy, & Kotler, 2005). This phenomenon may be understood by considering the nature of the "profession of arms" (Nash, 2007a). The notion that higher rates of PTSD are associated with simply being in the military is not difficult to grasp for those who have worn the uniform. The stressors elicited by

contemporary combat are generally understood by the general public; however the mindset, characteristics, and unique culture of the American soldier are not (Nash, 2007a). The military inculcates this mindset to which enables soldiers to inflict combat trauma upon the enemy, to deny the existence of war trauma in oneself, and to view this denial as a badge of honor rather than a sign of failure. This culture of military service most likely affects PTSD outcomes (Nash, 2007a).

In fact, there is discourse regarding the need for a separate diagnostic category of war trauma. While this debate is beyond the scope of this analysis, it is worthy of some discussion (Hunt, 2010). War trauma is unique, more complex, exhibits greater severity, and manifests symptoms beyond that of the PTSD diagnosis. However, war trauma is not simply about the aftermath of combat, it is about living in the present after returning to their communities (Hunt, 2010). This realization supports the need for further and broader exploration of combat-related PTSD (Creamer, Wade, Fletcher, & Forbes, 2012). Chronicity of combat-related PTSD appears in the literature to be a defining characteristic of the military experience of the disorder. Distinctive aspects of combat stressors are likely associated with the uniqueness of combat PTSD (Creamer et al., 2012). In addition to the uniqueness of combat-related PTSD there are many characteristic associations that influence the level of severity in our returning veterans. The next section will explore these unique relationships and predictors shaping symptom severity of combat-related PTSD.



## **Overview of Varying Theories of PTSD Etiology**

Childhood adversities, developmental issues, neurobiological factors, and socioeconomic status have all been posited in the literature as potential predictors of PTSD and thus there is a strong argument for using integrated theories to examine combat-related PTSD (Schottenbauer, Glass, Arnkoff, & Gray, 2008). One of the most important aspects of research is the ability to use existing theory to explain relationships among concepts and constructs that give organization and sense within the world. Theory explains, predicts, provides a basis for future research, and is the foundation for this research (Shoemaker, Tankard, & Lasorsa, 2004). Theory can provide a model of the key variables in an attempt to parsimoniously explain the phenomena of trauma in the experience of combat-related PTSD (Maxwell, 2005; Shoemaker et al., 2004). This next section will explore the various and competing theories of PTSD causation.

The theoretical underpinnings of trauma are based on subjectivity and speculation that creates challenges in application in clinical work with PTSD clients. We need to extend theory with research evidence to reinforce a framework from which constructs can be explained and predictability can be applied in developing appropriate clinical approaches for working with PTSD clients (Radstone, 2007). Theory-driven hypotheses must be advanced and repeatedly tested to produce confirmatory evidence for an understanding of the effects of childhood adversity and PTSD (Harvey, 2011).

## **Psychoanalytic Trauma Theoretical Framework**

Psychosocial models are the oldest and most predominate perspective explaining the relationship between traumatic events and later life severity of symptoms in PTSD. While these

frameworks may not provide complete answers or a perfect model fit, they provide critical information to build upon the body of trauma knowledge that may lead to the resolution of this debate (Nash & Baker, 2007). The roots of trauma theory are difficult to trace, but have a connection to early psychoanalytic theory (Trimble, 1985). Theoretical nuances continued to evolve until the related constructs were finally codified into the *DSM-III* (1980) and through several subsequent iterations of the *DSM* in an effort to provide explanation for the emerging pathologies of returning veterans from Vietnam (Becker-Blease & Freyd, 2005). However, the ongoing controversies regarding conscious versus unconscious memories (Radstone, 2007), one or two-dimensional models of trauma, and even the difficulties in simply defining trauma continue to cloud the efficacy of theoretical application to traumatogenic research (Becker-Blease & Freyd, 2005). The thrust of this chapter is not to engage in the controversial issues surrounding trauma theory, but to understand and apply appropriate and applicable portions of trauma theory in an attempt to explain trauma and the predictive value of childhood adversities on combat-related PTSD.

The seminal work of Ferenczi (1929/1955b) adopted the focus that psychological functioning is the centerpiece for the conceptualization of trauma. Ferenczi's theory provides an explanation for PTSD symptom development as an adaptive process for protecting the mind and body as a result of traumatic events (Ferenczi, 1929/1955b). Ferenczi posited that trauma is not inextricably linked to negative incidents, but that trauma may also emanate from the lack or neglect (childhood adversity) during the development of the human being (Ferenczi, 1920/1955a). Ferenczi articulated how the mind adapts to traumatic events through a process of

auto-plasticity wherein the externalities of the outside world are resolved through a neurological response that protects the body and mind and can manifest in varying levels of dissociation or fragmentation. The human brain is designed to react and develop to these early life events as it evolves into adulthood (Teicher, Andersen, Polcari, Anderson, & Navalta, 2002). Childhood adversities impact brain development through stress hormones which appear to sensitize the brain in several areas providing the substructures for PTSD risk. These hormones affect many areas of brain development and provide the vulnerability to subsequent trauma challenges, which may manifest as PTSD (Teicher et al., 2002).

### **Erikson's Psychosocial Developmental Theoretical Framework**

Erikson's developmental theory framework provides another solid foundation for the explaining and predicting the impact of childhood adversity on the severity of PTSD among combat veterans. Developmental theory has given rise to advances in research and has been resilient over time (Floyd, Rice, & Black, 2002). Numbers of studies have validated developmental theory in regards to its clinical and cultural application in explaining socioeconomic status (Ochse & Plug, 1986; Rosenthal, Gurney, & Moore, 1981; Vaillant & Milofsky, 1980). There is some research on the utility of developmental theory in veteran populations with PTSD (Garte, 1985). Garte hypothesized that younger Vietnam veterans had not successfully negotiated the "identity versus role confusion" stage of development as a result of combat exposure leading to more reintegration problems and difficulties in later life responsibilities (Garte, 1985). This developmental lag created the vulnerability that precipitated the emergence of PTSD through combat exposure (Garte, 1985).

Erikson referred to the term “identity crisis” as being first applied to veterans in World War II (Erikson, 1968, p.16). Psychiatric professionals realized what combatants were experiencing was not “shell shock” or even malingering. The mental health professionals understood the damaged veteran “had lost a sense of personal sameness and historical continuity” (Erikson, 1968, p.17). Even at that time period, these disturbances of the developmental cycle were being identified and analyzed within the framework of psychosocial theory.

The notion of the reciprocal relationship between trauma and developmental theory is reinforced by Erikson (Erikson, 1968). Erikson brought forward the term psychosocial to integrate mind and social factors into a singular conceptualization (Erikson, 1980a). He also formulated the "epigenetic principle" which explains that human beings develop through predetermined stages. The success or failure through these stages is influenced by the environment (Erikson, 1980b). Through the psychosocial construct and the epigenetic principle, Erikson theorized that the past and future are combined through these levels or stages of development (Erikson, 1980b). This theoretical framework suggests that all humans develop through the same levels of opportunity and from these stages either positive or negative influences occur within the person. The negative influences he termed maladaptive (Erikson, 1980b). Specifically, Erikson postulated that the better the individual navigates through these developmental stages or crises then the better prepared, or less vulnerable, they are to future adversities (Erikson, 1968). This conceptualization and theory applies to the major premise of this study, wherein the impact of childhood adversity increases the likelihood of maladaptive

responses to subsequent environmental challenges, and this maladaptive response can manifest as PTSD (Erikson, 1968).

Specifically, Erikson's theory provides a plausible explanation for the potential for childhood adversities to create risk factors or vulnerabilities that impact the development of future traumas in adulthood such as combat-related PTSD. For example, a person impacted by a trauma during their time of identity development may manifest vulnerabilities such as low self-esteem, identity confusion, or a loss of self all of which can lead to the development of PTSD in later life (Erikson, 1968; Wilson, Smith, & Johnson, 1985). An individual impacted by a later life trauma such as combat can regress as a result of previous vulnerabilities potentially increasing the severity of their PTSD (Wilson et al., 1985). Lastly, a traumatized individual can develop greater resiliency that may moderate the development of PTSD altogether or delay its onset until much later in life if (Floyd et al., 2002; Wilson et al., 1985). This perspective provides explanation for the wide variety of symptoms, severity an onset of PTSD depending upon the developmental time of trauma, previous vulnerabilities, and resiliency (Wilson et al., 1985).

More contemporary Eriksonian work explains that the reason many aging veterans re-manifest PTSD in later life is their tendency of ruminating on past events. During this developmental stage, ego integrity or despair, the individual attempts to make sense of their life by mentally revisiting events from the past which may lead to a resurgence of PTSD symptoms (Erikson, Erikson, & Kivnick, 1986). In a contrasting view, even though some individuals have a lifetime of successful coping, some studies suggest that the normal cognitive aging processes

regarding memory provide the genesis of these later episodes of PTSD (Floyd et al., 2002). This recurrence of PTSD is produced from age-related cognitive changes that increase the likelihood of intrusive memories, instigating the manifestation of PTSD symptoms (Floyd et al., 2002).

### **Social Causation Theoretical Framework**

In addition to the developmental experiences that may impact PTSD and its severity, social environment also appears to have a causal role in the development of PTSD (Foy, Madvig, Pynoos, & Camilleri, 1996; Koenen et al., 2007; Pittman et al., 2006). Specifically, the association of low socioeconomic status (SES) to mental illness rates has been widely researched and rigorously promoted as an important predictor of mental illness (Murali & Oyeboode, 2004). Furthermore, evidence has emerged that clearly shows a relationship between childhood SES and adult health and wellness (Luo & Waite, 2005).

The theory of social causation is not new. Hollingshead and Redlich (1958) originally championed research exploring the interactions of class and mental illness. The Hollingshead and Redlich study was instrumental in developing linkages among childhood adversities, low SES, and other stressors that increased the likelihood and severity of mental health issues. Social causation theory in a fundamental form, is based upon the premise that social class level is directly related to the development, prevalence, and prolonged impact of mental illness (Hollingshead & Redlich, 1958).

More recent research suggests that there is a clear association between low SES and later life mental illness including higher rates of anxiety, depression, and personality disorders (Johnson et al., 1999). The Johnson et al. (1999) research also noted that low SES negatively

impacts the developmental cycles of children. Given that the literature demonstrates that both psychological development and environmental factors have an impact on the ability of individuals to experience and cope with trauma, both the psychodynamic perspective and social causation perspectives will be employed to guide this research. To provide a framework from which to view the remaining portions of this study, a conceptual model is necessary that provides an explanation for the impact of childhood adversity in the etiology of combat-related PTSD severity. Accordingly, the next section provides empirical evidence for how childhood adversity influences PTSD, so to inform the conceptual model which will be used in this research.

### **Childhood Adversity: A Primary Predictor of PTSD Severity**

PTSD is prevalent among reintegrating combat-exposed veterans (Ray, 2008). Many aspects play into the complexity and severity of this problem. The literature suggests one of the leading factors increasing the risk of PTSD in our veterans is the influence of childhood adversities upon the severity of combat-related PTSD (Bremner et al., 1993; Steenkamp et al., 2012). Theories exploring associations between childhood adverse events and adult trauma symptoms began as a result of varying studies beginning in World War II and continuing through subsequent United States conflicts (Yarvis, 2013). The Vietnam War, subsequent diagnostic conceptualization, and noticeably heightened PTSD severity gave impetus to expand research on the influence of these predictors on the severity of PTSD (Steenkamp et al., 2012; Worthington, 1978).

An early study lent support to the association of childhood adversity on adult mental illness. Bryer, Nelson, Miller, & Krol (1987) conducted early studies of female mentally ill

patients with the purpose of identifying rates of childhood abuse, associations between this abuse and current mental health status, and the utility of using current adult symptoms to identify child abuse survivors. The study's sample (N=66) was drawn among female psychiatric inpatient participants, 18-64 years old. The results demonstrated significant levels of prior abuse history in participants with adult mental illness. Results indicated that 66% of the participants reported a previous abuse history with 59% indicating that the abuse occurred prior to their 16<sup>th</sup> birthday. Of these, 52% reported sexual abuse and 80% reported physical abuse. The authors noted the severity of the adult mental health symptoms was significantly correlated with the childhood adversities of physical and sexual abuse (Bryer et al., 1987). The study did not include male or combat participants limiting the generalizability of the findings across genders and other demographic indicators. Although this study moves the conversation into the cause and effect framework of childhood abuse and adult PTSD severity, it does not provide that definitive link necessary to make empirical assertions about these associations (Bryer et al., 1987). Other important literature of this period also supported the negative effects of both short and long-term early life abuse on the future mental health of the research population (Spinetta, 1972; Widom, 1989).

Similar associations between prior exposure to childhood physical violence and prevalence of adult PTSD were found in a large (N=2,181) randomized non-military study (Breslau et al., 1999). In this research, exposure to previous trauma created a much greater likelihood of developing PTSD after subsequent traumatogenic experiences. There was a dose/response effect implied, in that a history of two or more traumatic incidents was reported as



increasing the risk of PTSD diagnosis five times of the general population (Breslau et al., 1999). A history of a single event created twice the likelihood of being diagnosed with PTSD. The results also indicate that repeated previous exposures of traumatic incidents produced a greater severity of PTSD symptoms than that of a single exposure (Breslau et al., 1999). This study opened the door for deeper comparisons of independent variables as causal predictors of PTSD severity (Breslau et al., 1999). This investigation was the one of the first studies that was able to support the influences of prior trauma and the increased likelihood and severity of a PTSD in later life from a subsequent trauma. Although the study utilized a non-veteran population, the framework developed an explanation of the sensitization of early life trauma survivors resulting in the greater risk and symptom severity of subsequent traumatization leading to PTSD in combat scenarios (Breslau et al., 1999).

During the late 1980s and throughout the 1990s, researchers explored the influences of childhood maltreatment on PTSD, but ignored the cumulative implications of multiple or complex prior life adversities as they relate to the development or severity of PTSD (Bremner et al., 1993). Bremner et al. (1993) was one of the first investigators to posit that there was a distinct relationship between combat perpetuated PTSD and childhood adverse events. This conceptualization was supportive of previous findings from studies involving Israeli soldiers suggesting that exposure to previous combat created a vulnerability to future combat-related trauma and subsequent PTSD (Solomon et al., 1987).

The participants of the Bremner et al. (1993) study were Vietnam veterans accessing VA psychiatric assistance and inpatient care at a VA Medical Center. Childhood adverse events such

as physical and sexual abuse were explored. The results indicated that those with PTSD had a significantly higher rate of physical and or sexual abuse than that of the comparison group without PTSD. Among those with PTSD, 29% had a history of physical abuse and 26% had a history of sexual abuse (Bremner et al., 1993). The Bremner study was one of the first of its kind to control for differences in combat level exposure, suggesting the need for a rigorous analysis of the relationship between childhood abuse and combat-related PTSD diagnosis (Bremner et al., 1993).

The literature exploring the genesis of PTSD and symptom severity has evolved from a simple causal explanation based upon one traumatic event to the inquiry of multiple factors regarding prior experiences and individual characteristics that influence the development of PTSD. Recent research sought to investigate the factors that might eliminate, minimize, or heighten the effect of PTSD upon the individual human system. King et al. (1996) provided a pivotal piece of research that encapsulated a variety of external factors and their possible relationship with PTSD severity within Vietnam combat veterans. The King et al. (1996) study used secondary data from the National Vietnam Veterans Readjustment Study completed in 1990. It employed 1,200 male and 432 female participants. "Vietnam Theater" veterans were those individuals stationed within the country of Vietnam during the Vietnam War, but did not necessarily engage in direct combat operations (King et al., 1996). This study focused on both childhood adversities and the compounding effects of war-zone stressors. The results indicated that war-zone stressors have a predictive influence upon the severity of combat-related PTSD and its symptomology. The King results also suggested a significant relationship between family

instability, other related childhood adversities factors, and combat-related PTSD. The results suggested a need to further explore the developmental implications of family environment on veterans with PTSD.

Cordray, Polk, and Britton (1992) introduced innovative research that focused specifically on the associations of selected childhood adversity factors upon the development of PTSD in Vietnam combat veterans. The large Cordray study in 1992 was one of the first, and few, that did not rely on retrospective data as the basis for collection methodology. The Cordray 18-year longitudinal study provided 13 waves of data collection that began in high school (1964) and moved through the continuum of time to post-military combat (Cordray et al., 1992). The project originally surveyed 1,227 high school sophomores (1964) finally selecting a random sample of (n=52) Vietnam combat veterans, (n=48) Vietnam era non-combat veterans, and (n=51) non-veterans. Of this sample 57% were considered lower SES and 65% were academically unsuccessful suggesting more vulnerability to the development of PTSD through combat exposure (Cordray et al., 1992). The conclusions, although primarily focused on the association of combat exposure and PTSD, show an indirect effect of childhood adversity on the development of combat-related PTSD (Cordray et al., 1992). The ability to complete a longitudinal study of this magnitude was an important step in supporting the hypothesis of the associations of childhood trauma and post-war levels of PTSD. The results also included the finding of a significant negative association with SES and a future development PTSD (Cordray et al., 1992).

Until the mid-1990s, most researchers other than Cordray et al. (1992) viewed the etiology of combat-related PTSD primarily due to combat exposure without serious scientific consideration of other etiological factors. Zaidi and Foy (1994) pursued a different path of assessing the relationships they believed to be important in understanding the etiology of this combat-related disorder. The study participants were male combat veterans ranging in age from 38 to 54 years who were being admitted to inpatient treatment for PTSD at the Palo Alto, California site of the National Center for PTSD. The veteran participants were administered standardized measures for childhood abuse, its variants, degrees of intensity, as well as PTSD severity and symptomologies (Zaida & Foy, 1994). Study outcomes found that 45% of all of the Vietnam participants diagnosed with PTSD had some form of childhood trauma. These findings supported the hypothesis regarding the impact of trauma in developmental years upon later life trauma development and severity (Zaidi & Foy, 1994).

Although a small developmental study, this research opened the door to further investigation into these associations by other researchers (Zaida & Foy, 1994). This was a critical study because it was one of the first studies that demonstrated that some veterans who were exposed to combat experiences developed PTSD and some did not. This finding opened the door to the notion that combat trauma exposure was not necessarily the primary component in the etiology of PTSD. Furthermore, one of the previous research challenges to exploring the effects of childhood trauma on PTSD was the lack of consistent and standardized instruments capable of quantifying early childhood adversities (Bremner et al., 1993). Researchers used survey instruments that typically were vague and employed undefined terminology as it related

to the variables of childhood abuse and traumas. Using reputable, reliable, and valid survey tools, Zaidi and Foy reported results that strongly suggested a significant correlation between the severity of combat PTSD and childhood abuse exposure.

The Cabrera et al., (2007) study was the first longitudinal and comprehensive study of PTSD and the influences of childhood adversity and health outcomes. The sample came from 4,529 male soldiers who had not yet deployed and 2,392 soldiers that recently returned from Iraq and again were preparing to redeploy. This study used a pre and post hoc analysis of military deployed combat veterans. The Cabrera research attempted to build upon the existing research by using a broader operationalization of childhood trauma through adverse childhood experiences (ACE). The Cabrera study conceptualized ACE as living with a mentally ill person or alcoholic, sexual, physical, psychological abuse, or domestic violence (Cabrera et al., 2007). In addition, the researchers focused on the implications and predictive value of ACE and the associations with both depression and PTSD. Cabrera et al. (2007) also explored the implications of the interactive effectiveness of ACE in predicting combat-related mental health.

The study's outcomes indicated that both ACE, and not surprisingly, combat exposure were predictive of PTSD and depression in the post deployment cohort. They found that two or more ACEs increased the risk of depression and PTSD beyond the level predicted by combat exposure alone. This was true of both for both pre and post deployment samples (Cabrera et al., 2007). The results confirmed that there was a positive association with ACE and greater post deployment symptoms of depression and PTSD. However, there was no indication that any specific childhood event was more predictive compared to others (Cabrera et al., 2007).

Lapp et al. (2005) attempted to bridge the gaps in the research regarding the propensity of physical and sexual victimization of veterans and its implications with PTSD severity. The study participants (n=133) were recruited from VA psychiatric inpatients with combat-related PTSD diagnoses. The findings indicated 96% of all participants had been exposed to some form of trauma within their lifetimes. Over 60% of the participants had experienced childhood physical trauma and 40% had been traumatized sexually. This study suggested clear associations between childhood abuse and later life PTSD prevalence and severity (Lapp et al., 2005). Although this study did not address the effects of predictor variables on the likelihood or severity of combat-related PTSD, it clearly demonstrated the need for future research to explore these effects (Lapp et al., 2005).

Early childhood traumas have consistently shown to be one the most powerful predictors of adult PTSD severity (Bremner et al., 1993; Brewin et al., 2000; Bryer et al., 1987; Clancy et al., 2006; IOM & NRC, 2007; Lapp et al, 2005; Yehuda, Halligan, & Grossman, 2001; Zaida & Foy, 1994) and a major dynamic in the etiology of the disorder (Cockram, Drummon, & Lee, 2010). The next wave of research on the development of and the severity of combat-related PTSD needs to be designed to specify the associations of these indicators of childhood experiences and thereby further the development of a conceptual model of the influence of childhood adversity in the severity of combat-related PTSD.

Bremner conceptualized childhood trauma through the domains of sexual, physical, emotional, and general traumas (Bremner, 2000), and the evidence indicates that these childhood traumas increase not only the risk of a PTSD diagnosis, but the severity of symptoms in the

disorder (Breslau et al., 1999; Davidson, Hughes, Blazer, & George, 1991; LeardMann et al., 2010; Schoedl et al., 2013). The results of subsequent research studies further specify that early sexual trauma is the strongest of all risk factors (McCutcheon et al., 2010), severity is increased exponentially by childhood physical and sexual abuse (Seifert et al., 2011), and childhood traumatic events create greater vulnerability to and severity in subsequent traumatic exposure (Breslau et al., 1999). There are 3 million cases of child maltreatment reported annually within the United States (Heim, Shugart, Craighead, & Meroff, 2010). Of these, 60% are considered neglect (DeBellis, 2005). These figures support an important rationale to further explore the impact and dimensions of childhood neglect on later life mental health issues, including PTSD severity. Strauss & Kantor (2005) conceptualized the dimensions of childhood neglect through four areas: emotional, cognitive, supervision, and physical. These measures form the basis for examining specific neglect behaviors of caregivers that can influence the severity and complexity of adult PTSD (Straus & Kantor, 2005). The literature has traditionally shown other forms of childhood adversities as predictive of greater severity of mental illness to include PTSD, but until recently specific forms of neglect have been woefully understudied (DeBellis, 2005; Sullivan, Fehon, Andres-Hyman, Lipschitz, & Grilo, 2006). New studies are now illustrating the influences of these various dimensions of neglect as predictors of symptom severity in PTSD (Cloitre et al., 2009; Gilbert et al., 2009; Heim et al., 2010). DeBellis' (2005) research clearly supports the hypothesis that childhood neglect may be more damaging than later life adult traumas due to the impacts upon the developmental stages of the child. Yehuda et al. (2001) also presents strong clinical and biological evidence suggesting that the influences of childhood

adversity clearly alters the developmental outcomes of the child and provides support for the idea that childhood neglect is clearly a predictor of later life severity of PTSD.

Poverty is the world's most destructive power (World Health Organization, 1995). The literature is clear and robust characterizing poverty, or low SES, as a determinant of future adult adversities. Low SES promotes increased mental and health problems, and impacts lifecycle developmental issues resulting in destructive combinations of genetic and environmental variables (Murali & Oyebode, 2004). The literature demonstrates that children in the lowest SES households are at a 33% greater risk of mental illness than those within higher level households (Murali & Oyebode, 2004). Lower SES in developing children provides a greater risk of structural and functional damage to the brain (McEwen & Gianaros, 2010), vulnerability to PTSD (Kar et al., 2007), higher rates of disease (Gillespie, Phifer, Bradley, & Ressler, 2009), and are closely linked to other risk factors such as maltreatment, neglect, and abuse that extensively increase symptom severity (Cicchetti, Rogosch, & Sturge-Apple, 2007). Military meta-studies show a modest correlation between low SES and a diagnosis of PTSD, but indicate a significant relationship to the severity of symptoms in combat-related PTSD (Brewin et al., 2000). Research proposes that not only is childhood SES significant as a predictor of PTSD it is critical in the etiology of the disorder (Dohrenwend, 2000).

Many investigators and theorists have found robust associations between the severity and prevalence of combat-related PTSD and early childhood adversities. Examples of these include childhood trauma, neglect, and low SES, but many others predictors can interact to increase PTSD symptom severity. There is a paucity and conflicting body of research regarding the



mediating or moderating effects of these childhood risk factors and the effects of combat-related variables (such as combat exposure, number of combat tours) and demographic variables (such as age, gender, and race or culture ) (Cabrera et al., 2007; Clancy et al., 2006).

### **Summary of the Literature Review**

The discussion of the evolution of the conceptualization of PTSD was steeped in various characterizations of trauma, its cause, and progression within the individual (as cited in Schumber & Lee, 2009; Janet, 1920/1924; Breuer, & Freud, (1893/1957). These different philosophies of causation varied from biological, neurological, to psychological. While all found a connection between trauma and childhood experiences, the work of Ferenczi postulated the connection between the influence of childhood adversities and later life vulnerability to PTSD development. Although Ferenczi generalized the conceptualizations of trauma, his work was the link that posited vulnerability for both causation and progression of PTSD (Ferenczi, 1932/1988; Ferenczi, 1920/1955a; Ferenczi, 1929/1955b; Ferenczi, 1932/1955c).

The period from World War I until the Vietnam War was marked by continued conflicting ideologies of the causation and etiology of what is now conceptualized as PTSD. The 1980s rendered new research that re-ignited the possibility of a relationship of childhood adverse events and PTSD, but only from a post-deployment perspective. The Vietnam War produced studies seeking to explain the manifestations being observed in the reintegrating veteran population. This research, along with political will, provided the impetus for the introduction of a PTSD diagnosis within the *DSM-III* in 1980 (APA, 1980; Bremner, 1993; Foy et al., 1984;

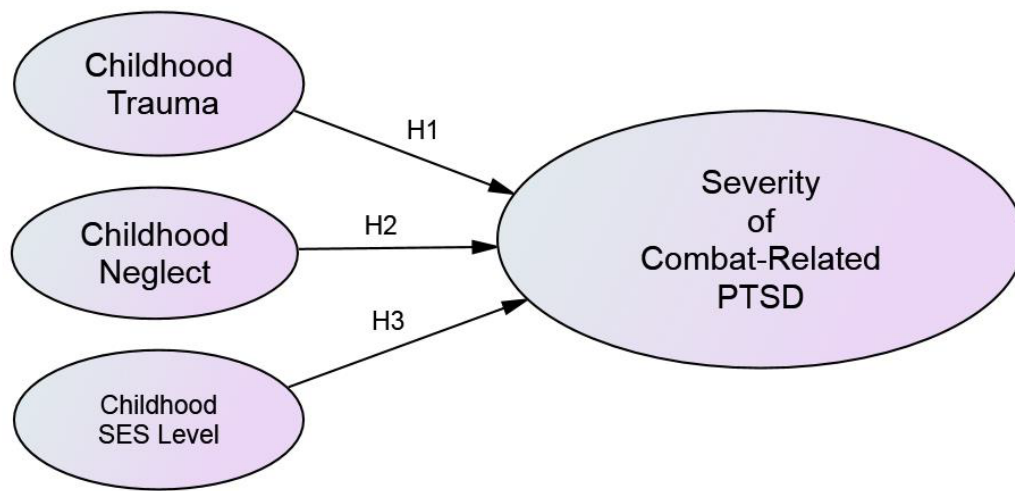
Solkoff et al., 1986). However, this emerging literature only provided a starting point relevant to predictor relationships in the influence of the causation and severity of PTSD (Rechtman, 2004).

The uniqueness of combat-related PTSD was truly understudied until recent years (Nash, 2007a). The synthesis of this literature revealed that PTSD related to combat exposure generated higher prevalence rates (Gates et al., 2012), greater symptom severity (Amir et al., 1996; Castillo et al., 2002; Fontana & Rosenheck, 1994; Naifeh et al., 2013), and chronicity compared to that of PTSD without non-combat stressors (Creamer et al., 2012). These findings set the stage for research exploring risk factors for combat-related PTSD as well as the influences of the unique associations of battlefield exposure upon symptom severity and reintegration of these veterans (Hunt, 2010).

From the late 1980s studies focused on the influences of childhood adversities upon adult mental health outcomes. Most of these emerging studies uncovered high rates of childhood abuse, neglect, and low socioeconomic status within the research populations. However, most of these earlier studies postulated combat exposure to be the overriding factor in symptom severity and considered childhood adversities to have indirect influences. Bremner et al. (1993) was one of the first researchers to clearly show a connection between childhood adversities and the increased vulnerability for combat PTSD in a veteran population while controlling for differences in combat intensity. Zaida & Foy (1994) showed that these childhood adversities were significantly associated with severity of PTSD. A similar study, Breslau et al. (1999) replicated that childhood trauma not only increased the risk of PTSD, but that repeated exposure generated much greater severity in symptoms of PTSD. Finally, Lapp et al. (2005) bridged the

research gap in linking childhood adversities to increased adult PTSD prevalence rates and greater symptom severity in combat-related PTSD. Given this preponderance of findings on the relevance of childhood adversity in manifestation of PTSD, this study examines the impact of childhood adversity on the severity of combat-related PTSD.

In addition to the supportive literature, the theories within this study provide a framework for understanding and predicting the impact of childhood adversities upon the severity of combat-related PTSD among veterans. Psychoanalytical trauma theory provides insights into brain adaptations as a result of exposure to childhood adversities. These changes in the brain create vulnerabilities for PTSD symptom development and predictiveness in the onset of adult PTSD when exposed to combat scenarios. Erikson's psychosocial developmental theory provides insights and probability for later life challenges. Vulnerabilities to combat-related PTSD are created through unsuccessful navigation of various development stages. Depending on the number and stages impacted, psychosocial developmental theory supports the predictability in the severity of PTSD in combat veterans. Social causation theory provides predictability of impacting environmental factors such as SES (poverty) upon the vulnerability, risk, and severity of later life consequences of trauma exposure such as combat. Poverty can be a significant predictor in later life mental illness and the stagnated developmental stages of the child. In sum these theories combine to provide a conceptual framework informing this this study as illustrated in Figure 6.



*Figure 6.* Conceptual Model of Increased Severity in Combat-Related PTSD.

## **CHAPTER THREE: RESEARCH DESIGN**

### **Introduction**

Emerging research suggests that childhood adversities may increase both the risk and symptomology of PTSD in our veteran population (Flynn & Hassan, 2010). Building on the existing literature this study examines the relationship between childhood adversities and the severity of PTSD among combat veterans. The study's primary research question asks: "Is there a greater severity of combat-related PTSD within veterans with combat-related exposure and childhood adversities compared to those veterans with combat-related exposure and no childhood adversities?" This analysis employs a sample of student veterans who have sought services from the veteran service center and are registered in the database of a major university located in Central Florida.

Structural equation modeling (SEM) is used to test the relationships among study variables [i.e. severity of combat-related PTSD (dependent variable), childhood trauma, childhood neglect, and level of childhood SES (independent variables)]. SEM provides both structural regression equations as well as an illustrated model that provides a formal conceptualization of the concepts and constructs within this study (Byrne, 2010). This methodology will form the basis for hypotheses testing as well as determining the strength of these relationships. These procedures can be illustrated as follows:  $\text{Data} = \text{Model} + \text{Residual}$  (Byrne, 2010).

### **Research Question**

Among veterans, do childhood trauma, neglect, and level of SES impact the severity of combat-related PTSD?

## **Hypotheses**

Ha1: (Childhood Trauma): A history of childhood trauma in veterans with combat-related exposure is positively associated with an increased severity of combat-related PTSD.

Ha2: (Childhood Neglect): A history of childhood neglect in veterans with combat-related exposure is positively associated with an increased severity of combat-related PTSD.

Ha3: (Childhood SES): The level of childhood SES in veterans with combat-related exposure is negatively associated with the increased severity of combat-related PTSD.

## **Study Design**

This study is a non-experimental, explanatory, retrospective survey design. Explanatory research designs are structured to explore varying levels and relationships or associations of variables within a study (Gliner, Morgan, & Leech, 2009). A retrospective survey study seeks answers to problems and hypotheses typically from retrospective self-report measures. It also describes the effects of the predictors and indicators upon the variables and relationships among variables of interest within the study (Singleton & Straits, 1999). This study examined the relationships between variables representing childhood trauma, neglect, SES level, and the increased severity of combat-related PTSD diagnosis. This study proposes testing relationships among four variables representing the dependent variable (endogenous) of increased severity of combat-related PTSD and the independent variables (exogenous) of childhood trauma, neglect, and level of SES thus supporting the hypotheses given. These concepts are illustrated in Table 2.

Table 2: *Operational Definitions of Study Variables*

| Variable                                  | Variable<br>Description                                     | Association<br>Measured by<br>Variable/Indicator                     | Description  |
|---|---|--|--|
| Severity of<br>Combat-<br>Related<br>PTSD | Latent<br>Endogenous<br>Variable<br>(Dependent<br>variable) | Childhood Trauma<br>(Independent<br>Variable)                        | Defined as, “injury to the body or psyche by some type of shock, violence, or unanticipated situation” (Barker, 2004, p. 441; Bremner et al. (2000). |
|   |   | Childhood Neglect<br>(Independent<br>Variable)                       | Neglect is the failure of a parent, guardian, or other caregiver to provide for a child's basic needs.   |
|   |   | Level of Childhood<br>SES<br>(Independent<br>Variable)               | Social standing or class of an individual or group measured as a combination of education, income, and occupation (Hollingshead, 1975).              |
|   |   | Intrusion Impact<br>Avoidance Impact<br>Hyperarousal<br>(Indicators) | <i>DSM-IV-TR</i> (2000) symptom clusters   |

| Variable                  | Variable Description                                     | Association Measured<br>by<br>Variable/Indicator | Description  |
|---------------------------|--|--|--|
| Childhood Trauma          | Unobserved<br>Independent Variable<br>(Latent exogenous) | General Trauma                                   | History of general<br>trauma events or acts<br>Bremner et al.<br>(2000).     |
|                           |  | Physical Trauma                                  | History of physical<br>trauma or abusive<br>events or acts.                  |
|                           |  | Sexual Trauma                                    | History of sexual<br>trauma or abusive<br>events or acts.                    |
|                           |  | Emotional Trauma                                 | History of emotional<br>trauma or abuse<br>events or acts.                   |
| Level of Childhood<br>SES | Unobserved<br>Independent Variable<br>(Latent exogenous) | Occupational Status                              | Family social stratum  |
|                           |  | Educational Level                                | Family years of<br>schooling   |
| Childhood Neglect         | Unobserved<br>Independent Variable<br>(Latent exogenous) | Physical Neglect                                 | Failure to provide<br>basic needs (Strauss<br>& Kantor, 2005).               |
|                           |  | Emotional Neglect                                | Inattention to a<br>child's emotional<br>needs (Strauss &<br>Kantor, 2005).  |
|                           |  | Supervisory Neglect                              | Failing to adequately<br>supervise the child<br>(Strauss & Kantor,<br>2005). |
|                           |  | Cognitive Neglect                                | Failure to interact<br>with the child<br>(Strauss & Kantor,<br>2005).        |



## **Measures**

Employing an existing database of a Veteran Assistance Center located on a major Central Florida university, the study instruments were distributed via Survey Monkey, to student veterans. Study instruments included: the Early Childhood Trauma Inventory-Self Report-Short Form (ETISR-SF) (Bremner, Bolus, Mayer, 2007), the Hollingshead Four-Factor Index (Hollingshead, 1975), Strauss Multidimensional Neglectful Behavioral Scale, Personal Relationship Profile, Neglect History Subscale (MNBS-PRP-NH) (Strauss & Kantor, 2005); Impact of Event Scale – Revised (IES-R) (Weiss, 2004); and the Combat Exposure Scale (CES) (Keane et al., 1989). All measures rely on participant self-report. The final consolidated survey instrument consisted of 81 questions from the various instruments discussed. The instruments are not revised or altered in any form for this research. Permissions were requested and received from the developers of all the tools used within this analysis and are included in Appendices K through O. The measures are detailed as follows.

### ***Early Childhood Trauma Inventory-Self Report-Short Form (ETISR-SF)***

The adult version of the ETISR-SF was selected to capture participants' retrospective experiences of childhood physical, emotional, and sexual abuse. ETISR-SF was selected as an appropriate measure due to its interdisciplinary development, its broad assessment of the domains of general, physical, sexual, and emotional abuse, its original psychometrics, as well as its simplicity in maintaining a more parsimonious survey size and structure necessary for survey studies (Van Selm & Jankowski, 2006). Another positive aspect of this measurement is that it

also specifies type and number of these traumatic events (Bremner et al., 2007) which provides more utility with this study. The ETISR-SF is segmented into sections of Likert scale as follows:

1. General traumas – 11 questions.
2. Physical punishment (traumas) – five questions.
3. Emotional abuse (traumas) – five questions.
4. Sexual events (traumas) – six questions.
5. Two questions relating to fear, horror, helplessness, and out of body experiences.

The ETISR-SF possesses good test-retest reliability ( $r = 0.91$ ), internal validity as measured by Cronbach  $\alpha$  for general trauma (0.70), physical (0.75), sexual (0.87), and emotional (0.86) and solid rater-interrater reliability ( $r = 0.99$ ) (Bremner et al., 2007).

***Strauss Multidimensional Neglectful Behavioral Scale, Personal Relationship Profile, Neglect History Subscale (MNBS-PRP-NH)***

The MNBS-PRP-NH measures the independent variable of childhood neglect across four dimensions. The dimensions measure events dichotomously (yes or no) across four developmental needs of children categorized as physical, emotional, supervision, and cognitive (Strauss, Kinard, & Williams, 1995). This eight item scale is part of a larger scale that measures a broader array of personal relationships. This measure is short, simple, and easily lends itself to survey research. Cronbach  $\alpha$  (0.73) indicates an adequate measure of internal consistency (DeVellis, 2003; Strauss et al., 1995). The scale also presents good construct validity and concurrent validity (Strauss, Hamby, Boney, McCoy, & Sugarman, 1999).

### ***Hollingshead Four-Factor Index of Socioeconomic Status***

The Hollingshead Four-Factor Index (HI) (Hollingshead, 1975) is a measure of a family's socioeconomic status. The scale measures the independent variable of childhood level of SES. The scale is one of the most frequently used of the typical measures of SES (Cirino et al., 2002). It is based on the education and occupation of each employed parent or family member living at home. The instrument also includes the factors of gender and marital status within a formula to compute the final social stratum of the family. Occupations are rated on a 9-point scale, categorizing approximately 450 titles from the 1970 United States Census. Education is rated on a 7-point scale based on the number of years of schooling. The literature indicates and supports this index in use regarding PTSD and related developmental traumatology studies (De Bellis & Putnam, 1994; Gurvits et al., 1996; Stein, Koverola, Hanna, Torchia, & McClarty, 1997). The psychometric analysis of the scale indicated a high interrater agreement ( $r=0.91$ ) with the Pearson's Product Moment Coefficient of Correlation is high as well ( $r=.927$ ) (Hollingshead, 1975).

### ***Impact of Event Scale – Revised (IES-R)***

The IES-R originally designed by Horowitz (1976) is now a self-report 22 item scale that measures the degree of distress (symptom severity) as they relate to the PTSD symptom clusters within the DSM-IV-TR (2000) (Horowitz et al., 1979; Weiss, 2004; Weiss, 2007; Weiss & Marmar, 1997). The 22 question instrument contains Likert scale questions that measure stressful life events from “not at all” to “extremely distressed”. Categories have eight intrusion, eight avoidance, and six hyperarousal questions and are scored through a specified formula

(Weiss & Marmar, 1997). Previous studies have shown the measure to demonstrate a very good Cronbach  $\alpha$  (.96) while this study has shown a comparable internal consistency with Cronbach  $\alpha$  (.93) (Creamer, Bell, & Failla, 2003; DeVellis, 2003).

### ***Combat Exposure Scale (CES)***

To capture the level of combat exposure indicator variable the Combat Exposure Scale (CES) was selected. The analysis and quantification of this construct is considered seminal in the development of combat-related PTSD and is viewed as a control variable within this study (National Center for PTSD, 2012). The CES has been used or cited in over 468 articles and studies (Keane et al., 1989). The instrument is also currently used and distributed by the National Center for PTSD, United States Department of Veterans Affairs (National Center for PTSD, 2012).

The CES is a simple 7-item ordinal, self-report Likert scale that analyzes combat stressors upon combat participants and quantifies the constructs on a scale of “light” to “heavy” combat exposure which takes approximately five minutes to complete (Keane et al., 1989). The psychometric analysis of the scale has been verified through three separate studies indicating internal consistency and reliability through Coefficient  $\alpha$  validation ( $\alpha = >.85$ ) and has reasonable validity across the scale items with the average correlation of .75. The instrument has a test-retest reliability of  $r = .97$ .

### **Demographic Profile**

Demographic information was acquired from each participant through asking gender, number of combat or combat-exposed missions, race, branch of military, and age.

## **Population and Sample**

This study used a non-probability sampling method. The sample was drawn from the database of student veterans registered for various services through a veteran's administrative assistance center at a major Central Florida university. The participants were identified through two separate emails soliciting participation in an online survey. These emails were released two weeks apart through the Registrar's Office of the major Central Florida university to maintain complete anonymity and remove the researcher or research assistant from the solicitation process. The soliciting emails directed those wishing to participate to a URL designated as the link to the survey. The survey site, Survey Monkey, was configured so as not to capture URLs of any respondents therefore maintaining the aforementioned anonymity. Participants were included in the survey if they met the following criteria:

- A military veteran from any era; and
- Exposed to combat trauma, combat-related trauma, or military sexual trauma; and
- A diagnosis of, treatment for, or been informed of having symptoms of PTSD.

The total study database consisted of a sample frame of (N=1,693) student veterans. The total study responses were 216 or roughly 13% of the database. One hundred and three completed the survey one of which contained missing data and was removed. The final sample included (n=102) student veteran participants that met the criteria (Soper, 2013; Westland, 2010). A priori power analysis was conducted using sample size and power analysis calculation software (Westland, 2010). Using the selected sample size calculator for SEM, inserting the conceptualized model of four latent variables, 19 observed variables, minimum effect size of

0.50, desired power level of .80, and probability level of  $p \leq .05$  indicates a minimum recommended sample size of 91 (Cohen, 1988; Gliner, 2009; Soper, 2013; Westland, 2010). Based upon this analysis and the power of the study, there is a .20 probability of incorrectly failing to reject the null hypothesis. Given dynamics of this study, this probability of committing a Type II error is within acceptable limits (Rubin & Babbie, 2011). The study's (n=102) sample size exceeded the suggested a priori sample size by over 10%.

There was no attrition from the study. The study participant characteristics were reasonably representative of the United States military demographics for age, race, and gender (Under Secretary of Defense, 2010). However, in comparison to the total United States veteran demographics, age is extremely skewed, but resemble those regarding age and race (U.S. Department of Veterans Affairs, 2012). The age differential suggests a disproportionate number of veterans from older wars that remain on the veteran rolls, but are not in a college academic setting as those within this study. These comparisons are suggestive that the characteristics of the sample obtained are a reasonable comparison to address the research questions of this study.

### **Procedures and Data Collection**

After receiving approval from the university's registrar office (Appendix C) and prior to commencing this study the research protocol was submitted to the Institutional Review Board (IRB) at the University of Central Florida. Approval to begin the study was received February 14, 2013. A copy of the IRB approval is included at Appendix A.

Data was collected through Survey Monkey from March 6, 2013 through April 30, 2013. The researcher met with the research assistant and provided additional training relating to the

data collection and handling of the data in accordance with existing IRB conventions. The researcher and research assistant followed protocols for the protection of human subjects underwritten by the IRB of the University of Central Florida. Participant anonymity was completely protected. No names or identifying data of any kind was included in the survey collection document or survey site used within this study. All information was maintained in a manner that protects the anonymity of the study participants.

Informed consent was acquired prior to entering the online survey site and is attached at Appendix B. It was also included in the initial soliciting email and the follow up email from the Registrar's office and was available for download if the potential participant wished to retain a copy of the document. These documents are attached as Appendices D & within F. When entering the survey, the first document encountered by the participant is an online informed consent which was required to accept participation in the study. If the potential participant declined to participate they were electronically rerouted to a thank you page without entering the survey. The survey is at Appendix F.

In addition to protecting the anonymity of the study participants, measures were taken to minimize or eliminate risk to the emotional state of the participants within the study. These measures consisted of providing contact numbers for study participants that referred them to a campus counseling center or crisis hotline for immediate assistance. This guidance was located within the informed consent, both email attachment and online, and at the end of the survey or electronic rerouting destinations within the survey site. Copies of these referrals can be located within the informed consent at Appendix B and the survey at Appendix F.

## **Data Analysis**

Data were analyzed using structural equation modeling (SEM) to study the relationship between the three factors of childhood trauma, neglect, and level of SES and the increased severity combat-related PTSD. SEM also referred to as Linear Structural Relations (LISREL), an extension of regression methods, is used to confirm relationships and test the hypotheses (Schumacker & Lomax, 1996; Wan, 2002). The model verifies how and to what extent variables affect each other. SEMs have been demonstrated to be extremely useful in understanding and finding predictors of symptom severity of combat-related PTSD (King et al., 1996; King, King, Foy, Keane, & Fairbank, 1999; Lang et al., 2008). IBM® SPSS® Premium Graduate Package v21 software was used to ascertain various correlations and descriptive statistical techniques necessary to fully analyze and understand the data.

IBM® Amos® v21, a multivariate statistical package was used to validate the initial model of the latent independent variables (exogenous) and the latent dependent variable (endogenous) increased severity of combat-related PTSD. The model was validated independently with confirmatory factor analysis and covariance structure modeling was used to test the mathematical relationship simultaneously between the variables and revised as appropriate because of the goodness of fit (GOF) statistics presented in the original analysis (Bryne, 2010; Schumacker & Lomax, 1996; Wan, 2002). The hypothesized model is illustrated in Figure 7.



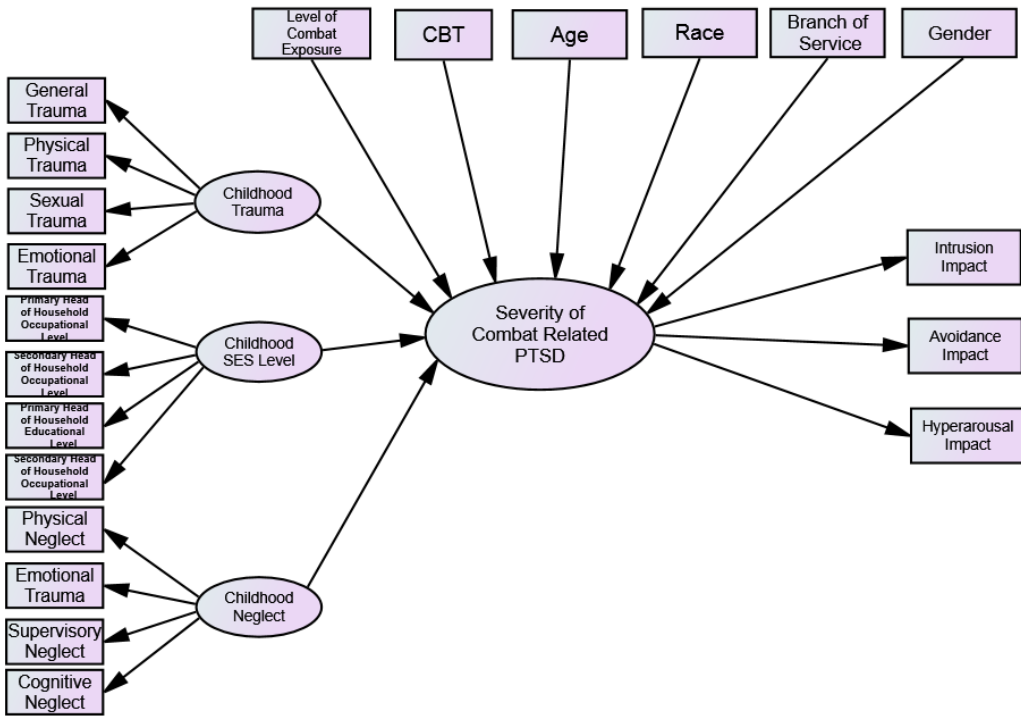


Figure 7. Hypothesized Model.

Next, covariance structure modeling was used to test the mathematical relationship simultaneously between the variables and revised as appropriate because of the GOF statistics presented in the original analysis (Bryne, 2010; Wan, 2002).

After the model specification was completed, the validation or assessment of the model fit was analyzed to ensure the theoretical framework is appropriate. This was accomplished in two steps. First parameter estimates were performed using Pearson's Product-Moment Correlation Coefficient and IBM® SPSS® v21 software. Secondly, the model was evaluated against a standard goodness-of-fit index (GFI). Indicators and their respective thresholds necessary to validate the model as fitting the data were used and applied as outlined in Bryne

(2010), Schumacker & Lomax (1996), Screiber, Stage, King, Nora, & Barlow (2006), and Wan (2002).

## **CHAPTER FOUR: FINDINGS & DISCUSSION**

### **Findings**

#### **Demographics**

Survey responses from student veterans at a major Central Florida university veteran's administrative service center (N=1,693, n=102) were used to examine the influences of childhood trauma, neglect, and level of SES upon the severity of combat related PTSD. As previously stated in chapter three, the total study database consisted of a sample frame of (N=1,693) student veterans. The total study responses were 216 or roughly 13% of the database. One hundred and three of these respondents met the criteria for inclusion within the study specifically being exposed to combat, combat-related trauma, or military sexual trauma resulting in: (a) having a PTSD diagnosis, been treated for PTSD, or having been informed of exhibiting the symptoms of PTSD; (b) 18 years of age or older; and (c) a veteran of any service. One survey was deleted due to missing data, leaving 102 surveys included in the analysis.

Average age and distribution by race, gender, military branch, and number of combat tours of the study sample are shown in Table 3. There was a higher proportion of women respondents than found in the U.S. veteran population (approximately 10%) (U.S. Department of Veterans Affairs, 2012).

Table 3: *Characteristics of Respondents*

| Item                   | $\mu$ | <i>n</i> | Range or % |
|------------------------|-------|----------|------------|
| Age                    | 33.29 | 102      | 22-69      |
| Gender                 |       |          |            |
| Male                   |       | 78       | 76.5%      |
| Female                 |       | 24       | 23.5%      |
| Race                   |       |          |            |
| White                  |       | 60       | 58.8%      |
| Non-White              |       | 42       | 41.2%      |
| Military Branch        |       |          |            |
| Marine & Army          |       | 77       | 75.5%      |
| All Other              |       | 25       | 24.5%      |
| Number of Combat Tours | 1.5   | 102      | 1-4        |

### PTSD

As previously noted, part of the entrance criteria for the survey respondents were asked if they had been exposed to combat trauma, combat-related trauma, or military sexual trauma resulting in: (a) a diagnosis of PTSD; or (b) treatment for PTSD; and or (c) has been informed of having symptoms of PTSD. Of those respondents, almost 68% reported having a diagnosis of PTSD with the remaining respondents noting receiving treatment for or have been informed of having symptoms of PTSD.

### *Levels of Trauma*

Using the Bremner et al. (2000) ETISR-SF, the survey study asked 28 questions covering the dimensions of childhood general, physical, emotional, and sexual trauma. Respondents were asked to answer questions regarding events occurring only prior to age 18. The responses were summed to find the final number of incidents and meet the scoring requirements of the measure's author (Bremner et al., 2000) and are displayed in Table 6, Appendix Q.

These results indicate that almost 79% ( $n=85$ ) of the study participants have been exposed to at least one childhood general traumatic event, 58% ( $n=59$ ) at least one physical traumatic event, 29.4% ( $n=30$ ) exposed to at least two or more emotional trauma events, and 29.3% ( $n=31$ ) of the study participants have been exposed to at least two or more sexually traumatic events during their childhood. The summary of all childhood traumatic exposures are represented in Tables 7 through 10, Appendix Q.

### ***Levels of SES***

SES is a proxy measure constructed via a set of survey questions asking respondents about the level of education and occupation of the primary and/or secondary head of household with whom they lived through the period of 0-18 years of age and prior to military service. The results indicated the average occupational level for the primary head of household at just below the semi-professional level ( $\mu=5.19$ ), secondary head of household occupational level at the semi-skilled worker level ( $\mu=2.96$ ), primary head of household educational level averaged almost at the college degree level ( $\mu=4.96$ ), and the secondary head of household educational level at just below the high school level suggesting there was a large number of stay at home care givers within this care giver population ( $\mu=3.745$ ). The summary of the educational and occupational levels among heads of households of the study participants is displayed in Tables 11 through 13, Appendix Q.

### ***Levels of Neglect***

Level of neglect was a composite measure derived from eight questions covering the dimensions of childhood physical, emotional, supervisory, and cognitive neglect. The responses

were summed to find the final number of incidents and meet the scoring requirements of the measure's author (Strauss & Kantor, 2005).

These results indicate that almost 7.8% reported incidents of physical neglect ( $n=8$ ), 28.4% emotional neglect ( $n=29$ ), 7.8% supervisory neglect ( $n=8$ ), and 28.4% cognitive neglect ( $n=29$ ). These summaries are shown in Tables 14 through 17, Appendix Q.

### **Structural Equation Modeling**

Testing the relationships among variables and indicators in SEM is divided into three parts. First, the measurement model estimates the degree to which indicators, or measures, relate to their respective variables. The second part is structural model measurement that examines the relationships between independent variables. Finally, the full SEM is when the relationships between independent and dependent variables are examined. In this study the measurement of each of the independent variables of childhood trauma, SES level, and neglect was assessed. Next a combined examination was conducted to determine their relationship to each other, and finally the independent variables were combined with the dependent variable, severity of combat-related PTSD, to determine the predictive and associational strength. Following is the procedural analysis and outcomes of this process.

### **Measurement Model Testing**

Measurement models were developed from the proposed hypothesized model (Figure 7) of the three independent variables and the dependent variable using the respective measures. Each variable model was independently analyzed against GOF indices and regression weights

using Amos software. After each variable is tested, adjusted models formed a three factor model which was also tested before beginning full SEM. The results of this statistical method follow.

The first measurement model step examined each independent variable model with its indicators to determine how those indicators measure their respective independent variable using factor analysis and Amos software. For example, within this study the independent variable of childhood trauma is measured by four indicators: general, physical, sexual, and emotional trauma. Each variable is then analyzed to ensure that the indicators are correctly measuring their respective variable. If the indicators fail to do so then they are trimmed from the model. In this study each independent variable model was trimmed as necessary to adjust the model fit. Model adjustments were made as follows: (1) of the indicators of childhood trauma, sexual trauma (SEXTRM) was removed because of lack of statistical significance ( $\beta=.086$ ,  $p=.43$ ) and poor model fit, (2) SES level was trimmed of primary head of household education level (ED) due to non-statistical significance ( $\beta=.015$ ,  $p=.83$ ), (3) two indicators of childhood neglect, supervisory ( $\beta=.99$ ) and physical neglect ( $\beta=.92$ ) exhibited high multicollinearity, upon examination supervisory neglect appeared to have the most impact upon the multicollinearity and was dropped from the model as a result. Each independent variable model was reanalyzed and was found to be a good fit to the data.

The dependent variable was measured by three indicators: intrusion impact (INT), avoidance impact (AVD), and hyperarousal impact (HYP). Upon analysis the model fit the data well and no further adjustments were made. The model's regression weights are depicted in Table 18, Appendix R.

The adjusted individual variable model's regression weights are depicted in Tables 19 through 24 in Appendix R followed by GOF statistics for all variables in Tables 25 through 28, Appendix S.

The next step in the measurement model process involves the combination of the trimmed results of each independent variable model into a first order, three factor measurement model for testing, shown in Figure 8.

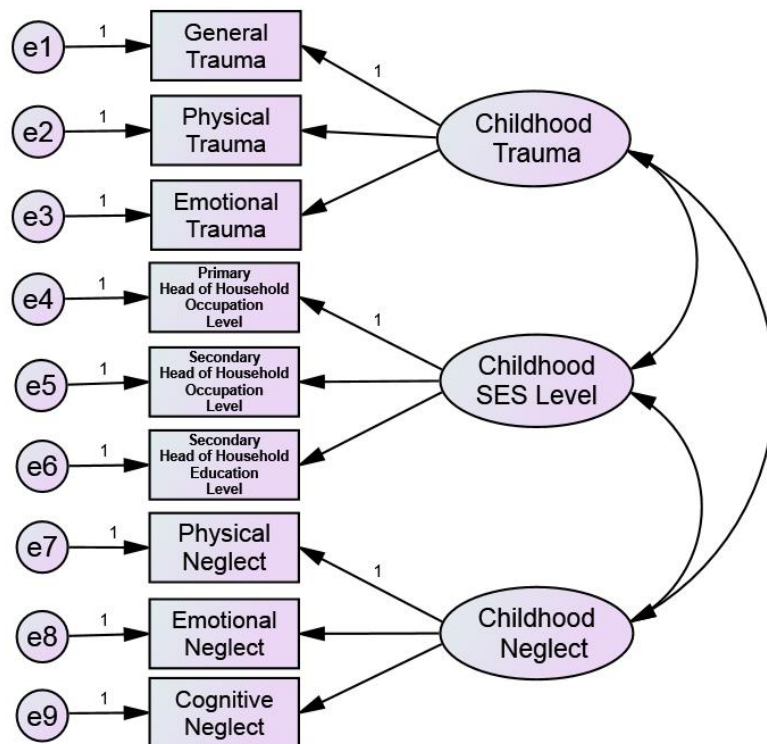


Figure 8. First Order, Three Factor Measurement Model.

The model was analyzed and found to fit the data modestly. Using modification indices, minor adjustments were made, but no structural changes were deemed necessary. The final



model fit the data well. GOF statistics and regression weights for the original and adjusted models are shown in Tables 29 through 32, Appendix T.

## Structural Model Hypothesis Testing

Initial SEM analysis indicated high multicollinearity ( $\beta=.792$ ) between the primary independent variables of childhood trauma and childhood neglect which may cause imprecise measurements and estimates. Due to multicollinearity, the original model was disaggregated into two separate models and tested. The first model, represented by Figure 9 contained the two primary variables of childhood trauma and SES along with the control variables.

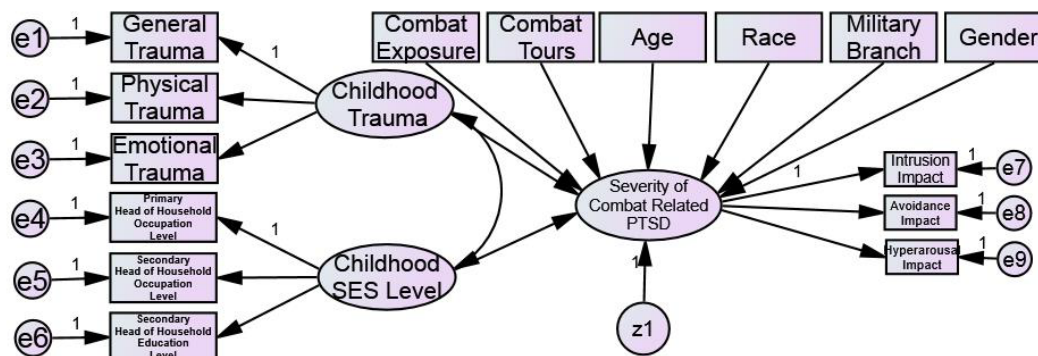


Figure 9. Model 1: Original Trauma Structural Equation Model.

The second model, represented by Figure 10 contained the two primary variables of childhood neglect and SES along with the control variables.

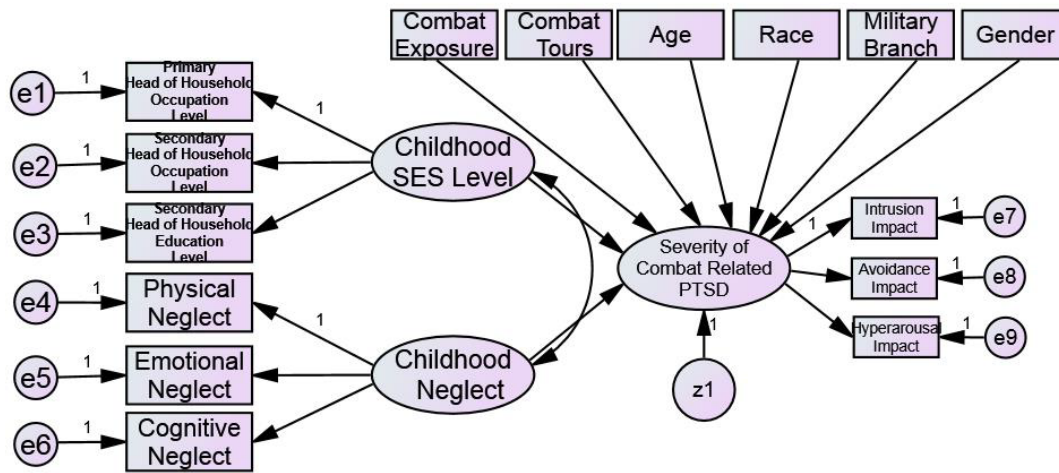


Figure 10. Model 2: Original Neglect Structural Equation Model.

The third and fourth models, represented by Figures 11 and 12 were trimmed versions of models one and two. Specifically, non-significant control variables were trimmed in these two versions. Model 11 indicated that the control variables of race ( $p=.067$ ), combat tours ( $p=.220$ ), and military branch ( $p=.243$ ) were found to not be statistically significant at the .05 level and were removed from the model. Likewise, model 12 showed that the control variables of race ( $p=.714$ ), combat tours ( $p=.193$ ), and military branch ( $p=.272$ ) were found to not be statistically significant at the .05 level and were removed from the model.

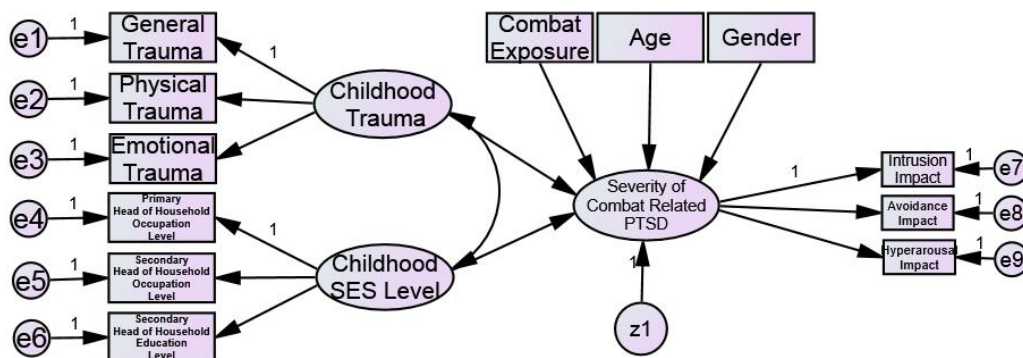


Figure 11. Model 3: Revised Trauma Structural Equation Model.

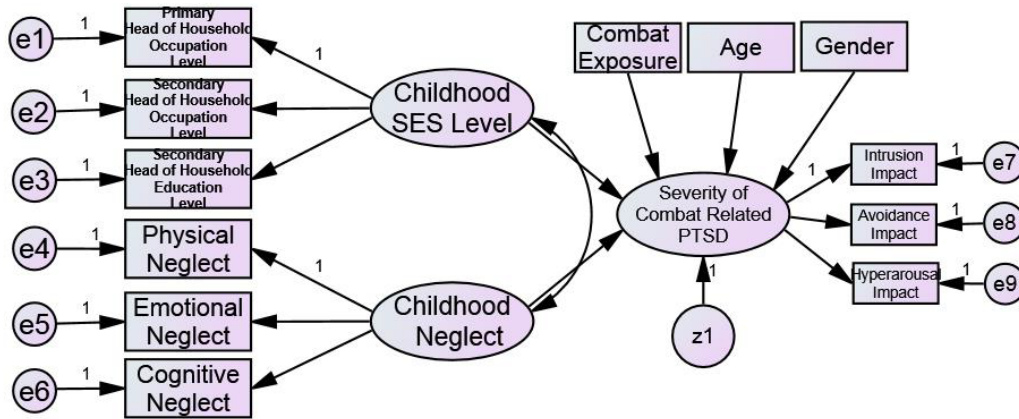


Figure 12. Model 4: Revised Neglect Structural Equation Model.

The fifth and sixth models, represented by Figures 13 and 14 were trimmed versions of models three and four. Specifically, those control variables exhibited high multicollinearity were trimmed in these two versions.

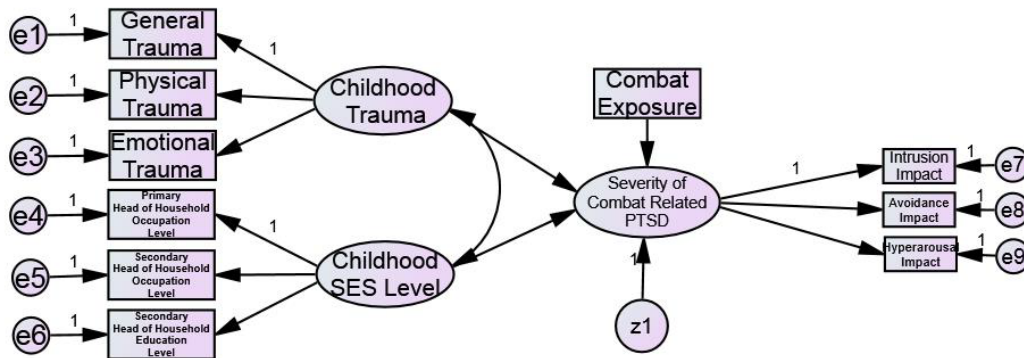


Figure 13. Model 5: Final Trauma Structural Equation Model.

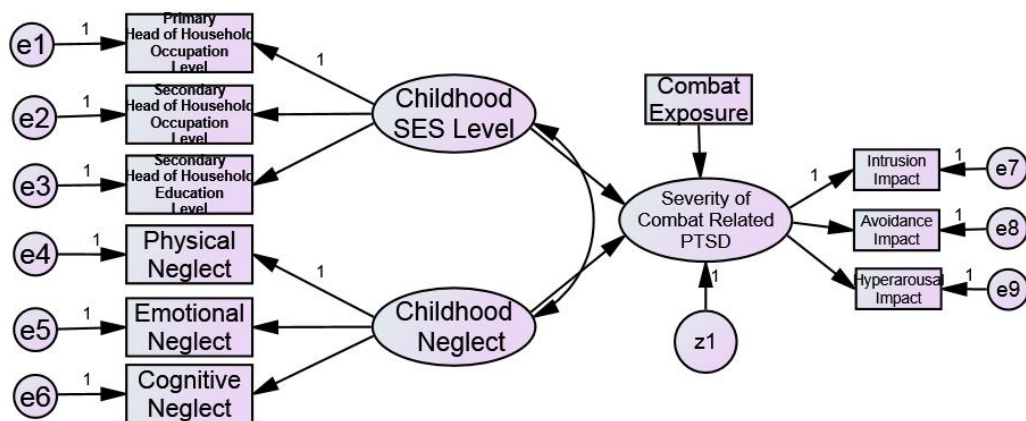


Figure 14. Model 6: Final Neglect Structural Equation Model.

These six models were analyzed in terms of individual effects (through regression weights and their respective  $p$ -values) and model goodness of fit cutoff criteria of Chi-square ( $\chi^2$ ), degrees of freedom (df), goodness-of-fit index (GFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), P-close, and Holter N (.01) (Screiber et al., 2006; Wan, 2002). A composite of all six model standardized ( $\beta$ ) regression weights are shown in Table 4.

Table 4: *Standardized Regression Weights for Six SEM Models of Combat-Related PTSD Severity*

| Variables       | Model 1<br>Original | Model 2<br>Original | Model 3<br>Adjusted | Model 4<br>Adjusted | Model 5<br>Final | Model 6<br>Final |
|-----------------|---------------------|---------------------|---------------------|---------------------|------------------|------------------|
| Trauma          | <b>.390</b>         |                     | <b>.415</b>         |                     | <b>.340</b>      |                  |
| SES             | .001                | -.066               | .052                | .008                | .056             | .017             |
| Neglect         |                     | <b>.410</b>         |                     | <b>.445</b>         |                  | <b>.413</b>      |
| Combat Exposure | <b>.224</b>         | <b>.285</b>         | <b>.328</b>         | <b>.331</b>         | .165             | .161             |
| Combat Tours    | .104                | .109                |                     |                     |                  |                  |
| Age             | <b>-.220</b>        | <b>-.206</b>        | <b>-.192</b>        | <b>-.194</b>        |                  |                  |
| Race            | .155                | -.031               |                     |                     |                  |                  |
| Military Branch | .098                | -.092               |                     |                     |                  |                  |
| Gender          | <b>.249</b>         | <b>.195</b>         | <b>.221</b>         | <b>.195</b>         |                  |                  |

Note: Significant coefficients are presented in bold font and are significant at the .05 level.

## **Hypothesis 1**

The first SEM (Model 1, Figure 9) consisted of the original disaggregated SEM model that included the primary variable of childhood trauma along with control variables testing hypothesis 1: A history of childhood trauma in veterans with combat-related exposure is positively associated with the severity of combat-related PTSD.

Initial analysis revealed that childhood trauma was found to have a significant positive association ( $\beta = .39, p < .001$ ) with the severity of combat-related PTSD. SES was found not statistically significant ( $\beta = .001, p = .994$ ) (.05) in its influence on the severity of combat-related PTSD. Three control variables, combat tours (CBT) ( $\beta = .104, p = .22$ ), race ( $\beta = .155, p = .067$ ), military branch (MILBR) ( $\beta = .098, p = .243$ ) were found to have not statistically significant effect (.05) upon the severity of combat-related PTSD and were trimmed from the model.

Childhood trauma was tested a second time using a trimmed model (Model 3, Figure 11) (with non-significant control variables deleted) and ( $\beta = .415, p < .001$ ) was found to be significantly related to the severity of combat-related PTSD. SES continued to lack statistical significance ( $\beta = .052, p = .602$ ). The control variables were all statistically significant at the .05 level, but both age ( $\beta = -.192, p = .012$ ) and gender ( $\beta = .221, p < .001$ ) were significantly associated with combat exposure. Using theory and the substantive research supporting the strong correlations of combat exposure as a primary influence in the severity of combat-related PTSD combined with a poor model fit, the control variables of age and gender were removed from the model.

The final model 5, Figure 13 was analyzed and the results indicated that childhood trauma ( $\beta = .340, p = .004$ ) was found to be significantly related to the severity of combat-related PTSD. SES ( $\beta = .056, p = .595$ ) was again not significant related to the severity of combat-related PTSD. Combat exposure (CES) ( $\beta = .165, p = .10$ ) was also found to have no statistically significant influence on combat-related PTSD. This suggests that childhood trauma is a more influential predictor of combat-related PTSD severity than any other control variable including combat exposure. Consequently, the null hypothesis is rejected due to the significant association of childhood trauma as a predictor of the severity of combat related PTSD. The final model is shown in model 5, Figure 13.

Note that SES was also tested in these two models. Results for these tests can be found in the section titled Hypothesis 3.

## **Hypothesis 2**

The second SEM (Model 2, Figure 10) consisted of the original disaggregated SEM model that included the primary variable of childhood neglect along with control variables testing hypothesis 2: A history of childhood neglect in veterans with combat-related exposure is positively associated with the severity of combat-related PTSD.

In this model, childhood neglect was found have a significant positive association ( $\beta = .410, p < .001$ ) with the severity of combat-related PTSD. SES ( $\beta = -.066, p = .459$ ) was not significantly related to the severity of combat-related PTSD. Three control variables; combat tours (CBT) ( $\beta = .109, p = .193$ ), military branch (MILBR) ( $\beta = -.092, p = .272$ ), and race ( $\beta = -.031, p = .714$ ) were found to have no statistically significant effect upon the severity of combat-

related PTSD and were trimmed from the model. All other control variables were retained in the model for further testing.

The childhood neglect model was tested again using a trimmed model (Model 4, Figure 12) with non-significant control variables deleted. Childhood neglect ( $\beta = .445, p < .001$ ) was found to be significantly related to the severity of combat-related PTSD. SES continued to have no statistically significant effect ( $\beta = .008, p = .932$ ). In the revised model the control variable gender (GEN) ( $\beta = .195, p = .051$ ) was not statistically significant and was removed from the model. Though age ( $\beta = -.195, p = .002$ ) was a significant predictor, this variable significantly correlated with combat exposure (CES). Again applying theory and the significance of the literature indicating a strong association of combat exposure as a principal influence in the severity of combat-related PTSD combined with a less than acceptable fit of the model, the control variable of age was removed from the model.

Following further trimming of the model, this hypothesis was tested again (model 6, Figure 14). The reanalysis indicated that combat exposure (CES) ( $\beta = .161, p = .095$ ) (.05 level) was not a significant predictor of the severity of combat-related PTSD. Childhood neglect ( $\beta = .413, p < .001$ ) was found to be significantly related to the severity of combat-related PTSD while SES ( $\beta = .017, p = .862$ ) had no statistically significant influence on the severity of combat-related PTSD. These results suggest that childhood neglect is more influential than any other variables to include combat exposure. Therefore, the null hypothesis is rejected in light of the significant association between childhood neglect and the severity of combat related PTSD. The final model is shown in model 6, Figure 14.

Note that SES was also tested in these two models. Results for these tests can be found in the section titled Hypothesis 3.

### **Hypothesis 3**

The effect of SES on the severity of combat-related PTSD was tested in six separate models: model 1, the original model with trauma, model 2, the original model with neglect; models 3 & 4, which are the trimmed versions of both of these models; and the final models 5 & 6.

Both original models (model 1, Figure 9 & model 2, Figure 10) revealed that childhood SES was found to have no significant statistical effect ( $\beta = .001, p = .994$ , model 1;  $\beta = -.066, p = .459$ , model 2) on the severity of combat-related PTSD.

The next set of trimmed models (model 3, Figure 11 & model 4, Figure 12) indicated that childhood SES was not significantly related ( $\beta = .052, p = .602$ , model 3;  $\beta = .008, p = .932$ , model 4) to the severity of combat-related PTSD.

The final models (model 5, Figure 13 & model 6, Figure 14) again supported the conclusion that childhood SES does not have a significant relationship ( $\beta = .056, p = .595$ , model 5;  $\beta = .017, p = .862$ , model 6) with the severity of combat-related PTSD within this study population. Therefore, the null hypothesis cannot be rejected indicating the childhood SES has no association with severity of combat-related PTSD.



### **Model Goodness of Fit**

Model 1, Figure 9: The GOF statistics revealed a  $\chi^2 = 192.236$ ,  $df = 87$ , GFI = .787, TLI of .798, RMSEA of .109, PCLOSE of .000, and a Holter N (.01) equaling 64 indicating a very poor fit of the model to the data. Therefore, the original model was rejected.

Model 2, Figure 10: The GOF statistics revealed a  $\chi^2 = 158.462$ ,  $df = 87$ , GFI = .812, TLI of .852, RMSEA of .090, PCLOSE of .003, and a Holter N (.01) = 77 indicating a poor fit of the model to the data. Therefore, the original model was rejected.

Model 3, Figure 11: Using modification indices, regression weights,  $p$ -values, and GOF statistics the adjusted model SEM was analyzed. The GOF statistics noticeably improved with a  $\chi^2 = 41.822$ ,  $df = 44$ , GFI = .937, TLI of 1.006, and RMSEA of .000, and PCLOSE of .883, and a Holter N (.01) = 166 indicating a much better figure, but still lacking in some critical cutoff criteria. This model is also rejected.

Model 4, Figure 12: Using modification indices, regression weights,  $p$ -values, and GOF statistics the trimmed SEM was reexamined. Although improved the GOF statistics were still not to the degree necessary to retain the model. The results showed a  $\chi^2 = 39.677$ ,  $df = 46$ , GFI = .944, TLI of 1.017, and RMSEA of .000, PCLOSE of .950, and a Holter N (.01) = 176. This model was rejected.

Model 5, Figure 13: The model produced GOF statistics that improved significantly with a  $\chi^2 = 23.615$ ,  $df = 28$ , GFI = .957, TLI of 1.013, and RMSEA of .000, PCLOSE of .907, and a Holter N (.01) = 207 indicating a very good fit of the model to the data.

Model 6, Figure 14: This final model generated GOF significant more improved with a  $\chi^2 = 23.479$ ,  $df = 28$ , GFI = .957, TLI of 1.014, and RMSEA of .000, PCLOSE of .910, and a Holter N (.01) = 208 indicating a very good fit of the model to the data.

Table 5 displays the original and revised models for all hypotheses tested using SEM. Trimming the models as previously discussed significantly adjusted the models to fit the data. Screiber et al. (2006) & Wan (2002) were used as guides for cutoff criteria to assess each model. Models 1 and 2 are poorly fit models to the data as evidenced by the high Chi-square and failure to meet the conventional cutoff criteria. The next models 3 & 4 improved significantly, but still did not fit the data to the degree necessary to be confident and therefore these models were also rejected. The final two models, 5 & 6 improved greatly from models 1 & 2 as evidenced by the significant changes in the respect to the overall fit with the final results exceeding the cutoffs illustrating that the models are a good fit to the data within this study.

Table 5: *Comparison of Disaggregated Model GOF*

| Model                          | Chi-square | DF | GFI<br>( $\geq .95$ ) | TLI<br>( $> 1$ ) | RMSEA<br>( $< .06$ ) | PCLOSE<br>( $> .05$ ) | Holter N<br>(.01)<br>( $\geq 200$ ) |
|--------------------------------|------------|----|-----------------------|------------------|----------------------|-----------------------|-------------------------------------|
| Model 1 Trauma & SES Original  | 192.236    | 87 | .787                  | .798             | .109                 | .000                  | 64                                  |
| Model 2 Trauma & SES Revised   | 158.462    | 87 | .812                  | .852             | .090                 | .003                  | 77                                  |
| Model 3 Neglect & SES Original | 41.822     | 44 | .937                  | 1.006            | .000                 | .883                  | 166                                 |
| Model 4 Neglect & SES Revised  | 39.677     | 46 | .944                  | 1.017            | .000                 | .950                  | 176                                 |
| Model 5 Trauma & SES Final     | 23.615     | 28 | .957                  | 1.013            | .000                 | .970                  | 207                                 |
| Model 6 Neglect & SES Final    | 23.479     | 28 | .957                  | 1.014            | .000                 | .910                  | 208                                 |

## **Discussion**

Multiple factors including childhood trauma, neglect, and low SES are believed to influence the severity of combat-related PTSD among our returning veterans. It is estimated that PTSD among the military/veteran population ranges from 18-30% (Gates et al., 2012; NIMH, 2012). This number does not include those who have returned and not yet sought treatment (Tanielian et al., 2008). Bremner (2002) posited that over 50% of the American population has been exposed to at least one traumatic event within their lifetime. Almost 50% of adults with diagnosed PTSD indicated childhood neglect in their histories (Cloitre et al., 2009). Recognizing that both negative early childhood experience and war may result in PTSD, the current investigation focused on the impact that childhood adversities such as trauma and neglect may have on combat-related PTSD. To date, there has been minimal research connecting these two phenomena.

The results from this study showed that almost 79% of the student veteran respondents with current combat-related PTSD symptoms had a history of childhood trauma. Approximately 8% reported incidents of physical neglect, 28.4% emotional neglect, 7.2% supervisory neglect, and 28.4% cognitive neglect. The statistical significance of both childhood trauma and neglect on the severity of combat-related PTSD within this population is a critical finding for extending our understanding of variability in combat-related PTSD.

Exposure to poverty during childhood has been found to be an important predictor of later life issues and was hypothesized here to influence severity of combat-related PTSD (Murali & Oyeboode, 2004; McEwen & Gianaros, 2010; Kar et al., 2007). SES level was not significant

in its influence in the severity of combat-related PTSD within this population. The specific responses to the SES measure in this study indicate that the majority of these student veterans came from higher SES homes; and almost 75% of the families of the sample respondents reported having both a primary and secondary caregiver within the home which may have restricted the ability to test the hypothesis in this sample.

Childhood trauma is a robust contributor to adult onset mental illness including PTSD. The current study indicated that 79% of the respondents were exposed to incidents of early childhood trauma which exceeds the national statistics of all trauma related incidents combined (Bremner, 2002). Childhood trauma was found to be a significant predictor in the severity of combat-related PTSD within this study. Although this population came from higher level SES homes traumas of varying types are still prevalent within these student veterans and their families. Given the results of hypothesis 1 testing it appears that individuals who experienced trauma during childhood may be at greater risk for severe combat-related PTSD. This has clear implications for policy makers desiring to provide policies and program that can reduce the costs of PTSD among veterans.

The exposure to childhood neglect is another predictor in both the development and severity of PTSD and was explored within this study. Moderate levels of neglect were reported by the study's respondents. Although the levels were moderate the significance of the findings indicate the powerful effects of neglect upon development and future mental health outcomes to include combat-related PTSD symptom severity. As with trauma, higher level SES caregiver neglect is present within the homes and families of these student veterans. Considering the

hypothesis 2 testing results, it also appears those veterans who have been exposed to childhood neglect are at greater risk for more PTSD from combat exposure. This also has distinct implications for policy makers desiring to advance programs and policies that can decrease the expenditures of combat-related PTSD among veterans.

The findings supporting the theoretical frameworks used within this study are mixed. The significance of childhood trauma and neglect on combat-related PTSD is clearly reinforced by both psychoanalytic and Erikson's development theory. Psychoanalytic theory posits that childhood adversities impacts the developing brain creating increased vulnerabilities to later life trauma such as combat exposure (Teicher et al., 2002). Likewise, Eriksonian theory suggests that adverse events, such as childhood trauma or neglect, can impair development also creating later life vulnerability to follow on trauma such as exposure to combat (Erikson, 1968).

Poverty has also typically been predictive of higher adult mental health outcomes. Social causation theory has consistently supported a causal role in the development of PTSD and other mental illness. Hollingshead and Redlich (1958) posited there are clear relationships among development, prevalence, and chronicity of mental illness as a result of low SES. However, the results of this study are divergent to this theory. Although this theory has been successfully used to support these phenomena in the past, for this study population it is not significant in explaining the severity of combat-related PTSD in this group of student veterans.

The study's results are predictive of both childhood trauma and neglect in the severity of combat-related PTSD. Once predictability is recognized it can be used through the lens of prevention with the ultimate goal of reducing human suffering and societal costs of combat-

related PTSD. Considering both the theoretical implications and given the high costs associated with combat-related PTSD it might be useful to consider screening as a possibility to lessen the mental health challenges and societal costs of the reintegration of combat-exposed veterans into our communities.

### **Practice and Policy Implications**

Combat exposure is a critical variable in the prediction of risk for PTSD among veterans (Nash, 2007). However, this study's results showing the significance of childhood trauma and neglect as important predictors and demonstrating more impact on the severity of PTSD than combat exposure among returning veterans points to the need for robust policy changes that may help moderate the current and future challenges of this public health problem.

First, these findings point to the need to possibly consider prior life experiences when screening for enlistment or military deployment. This could be accomplished by adding a formal mental health screen to include a complete biopsychosocial assessment prior to enlistment or predeployment processing. Should the current study be supported in future research, a policy to precluding from combat individuals found to have a strong history of childhood trauma and neglect might be developed. Finally, more research is suggested that develops dose-response models. These models suggest that there are links between event magnitude and symptom severity, in this case childhood trauma and neglect and PTSD. This type of research can possibly develop indices that can measure the elevated risk soldiers may have for combat-related PTSD as a result of childhood adversities.

These policy changes may lead to staffing patterns and strategies that can continue to buttress the overarching national interests of the United States' foreign policy objectives while protecting vulnerable military members who may be at risk of more complex combat-related mental health problems (National Research Council, 2006; Pecora, 2009). In addition to reducing rates of PTSD and human suffering in returning veterans, these personnel policy changes may reduce the high treatment costs of treating the more complex and chronic PTSD in our veteran populations. Additionally, reduction of chronic PTSD through proper prescreening for childhood adversities may result in a decrease in VA funding requirement, disability payments, and increased social capital.

### **Study Limitations**

There are limitations within this study. First, the retrospective format and self-reported study design possesses inherent biases and is considered inferior to prospective studies. While self-reported symptoms can be highly reliable they cannot equal the precision of clinician-driven measures of psychiatric symptoms (Haro et al., 2006). Self-report questionnaires can be affected by recall bias or clarity of memory, accurate time orientation, attribution, and/or embellishment of past events (Nisbett & Wilson, 1977). This is especially true with reporting of combat events and childhood trauma which are filtered through the cognitive biases of the emotional fugue of war or childhood memories. Correlational studies, while they can explain associations, cannot provide causal conclusions. Therefore, results will always contain alternative solutions to the research questions. Further, SEM used within this study, does not confirm a prediction model but can only indicate that no further data is available to reject the model.

The study population was comprised of student veterans receiving administrative and academic services from a university's veteran service center. Although convenient, the sample lacks the composition of the general veteran population in Florida or in the United States. The absence of demographics in the sampling frame, i.e., the university's veteran assistance center registry, further limited the analysis of the representativeness of the sample. These reasons form the basis that the study is not generalizable to the greater veteran population.

Despite the limitations of this study, the outcomes provide important evidence for the need to expand research on the childhood predictors of combat-related PTSD severity. It would be practical and useful to expand the study to other universities' veteran service centers across the nation in order to get a more robust set of data for understanding the effects of childhood trauma on combat related PTSD in this population. The final outcomes of this expanded study could then be used to help communities, universities, and colleges in assisting combat-exposed student veterans in their pursuit of academic success.

A final public affairs concern is noted regarding the student veteran population. The response rate in this study was relatively low and it can be assumed that many did not respond because of the lack of attention to student email; however, some many have not responded because of not wishing to disclose painful or sensitive information in an online survey. This may suggest an alternative bias due to the nature of the questions. Respondents with a history of childhood trauma may have been more inclined to respond and submit the survey and therefore the results could be an over-estimation of the proportion of childhood sexual trauma within this population. The numbers further suggest a possibility that a greater percentage of student



veterans than those captured in this survey are suffering from the symptoms of combat-related PTSD. This suggests a need for more studies to examine student veterans and their functionality and subsequent needs within a collegiate and community-based setting.

### **Conclusion**

The complexities of combat and reintegration after war have created a serious public health crisis in the recent decades. With the increasing prevalence and severity rates of combat related PTSD it seems that a new paradigm is necessary to prevent and respond more effectively to the problem. It is critical to begin to explore with detail the implications and the realities of childhood adversities on the severity of combat-related PTSD for those soldiers, sailors, airman, and marines America places in harm's way. This study provides evidence that childhood trauma and neglect may be key variables in understanding PTSD severity among our returning veterans.

## **APPENDIX A: IRB APPROVAL LETTER**



University of Central Florida Institutional Review Board  
Office of Research & Commercialization  
12201 Research Parkway, Suite 501  
Orlando, Florida 32826-3246  
Telephone: 407-823-2901 or 407-882-2276  
[www.research.ucf.edu/compliance/irb.html](http://www.research.ucf.edu/compliance/irb.html)

### Approval of Exempt Human Research

From: UCF Institutional Review Board #1  
FWA00000351, IRB00001138

To: Michael S. Bermes

Date: February 14, 2013

Dear Researcher:

On 2/14/2013, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review: Exempt Determination  
Project Title: Childhood Predictors in the Severity of Combat Related Post-Traumatic Stress Disorder Among Veterans with Combat Related Exposure.  
Investigator: Michael S. Bermes, MSW  
IRB Number: SBE-13-09044  
Funding Agency:  
Grant Title:  
Research ID: N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 02/14/2013 04:38:36 PM EST

A handwritten signature in black ink that reads 'Joanne Muratori'.

IRB Coordinator

## **APPENDIX B: INFORMED CONSENT**



## **Childhood Predictors of Severity of Combat Related Post-Traumatic Stress Disorder (PTSD) Among Veterans with Combat Related Exposure**

### **Informed Consent for an Adult in a Non-Exempt Research Study**

Principal Investigator(s): Michael S. Bermes, MSW, CAP, ICADC

Faculty Supervisor: Eileen Mazur Abel, PhD, LCSW

Investigational Site(s): Veteran's Academic Resource Center (VARC) & Registrar's Office  
Orlando, Daytona Beach, & Cocoa Beach Campuses  
University of Central Florida

**Introduction:** Researchers at the University of Central Florida (UCF) study many topics. To do this we need the help of people who agree to take part in a research study. You are being invited to take part in a research study, which will include about 1400 people at UCF. You have been asked to take part in this research study because you are a veteran that may have post-traumatic stress disorder because of combat-related exposure/s. You must be 18 years of age or older to be included in the research study.

The person doing this research is Michael S. Bermes, MSW, CAP, ICADC, Retired U.S. Army of UCF College of Health and Public Affairs, Public Affairs Doctoral Program & School of Social Work. Because the researcher is a graduate student, he is being guided by Dr. Eileen Mazur Abel, a UCF faculty supervisor in the Department of Social Work.

#### **What you should know about a research study:**

- A research study is something you volunteered for.
- Whether or not you take part is up to you.
- You should take part in this study only because you want to.

- You can choose not to take part in the research study.
- You can agree to take part now and later change your mind.
- Whatever you decide it will not be held against you.
- Feel free to ask all the questions you want before you decide.

**Purpose of the research study:** The purpose of this study is to understand more about what PTSD is and what predictors or risk factors form a greater severity of combat-related PTSD. This severity creates greater levels of veteran reintegration problems and community-based issues not only now, but also well into the future.

The goal of this dissertation is to provide an addition to existing knowledge base and to suggest an altered future course for military accession practices and policies from an interdisciplinary and Public Affairs perspective. The ultimate goal of the research is to minimize community-based implications and challenges, and the reduction or elimination of the undefinable societal costs of war.

**What you will be asked to do in the study:** To complete an online survey consisting of the following items:

- There are 81 items in the online survey.
- The entire survey should take approximately 20 minutes.

You do not have to answer every question or complete every task. You will not lose any benefits if you skip questions or tasks.

**Location:** The entire research is in survey form and online.

**Time required:** We expect that you will be in this research online study for approximately 20 minutes.

**Risks:**

1. Some of the questions involve sensitive information about past childhood adversities. There is a minimal risk of revisiting, reliving, or remembering distressing traumatic events or incidents that may provide genesis to anxiety, flashbacks, emotional stress points to which you may feel stress or inability to cope to move beyond the moment in time. If any of these feelings or situations occur, please contact the following:

The UCF Counseling Center Crisis Line, 407-823-2811

Mon-Thur: 8am - 6pm

Fri: 8am - 5pm

or an after-hours crisis:

Immediate Emergency call 911 or UCF Crisis Center 407-425-2624

2. There is no risk with a breach of confidentiality as all survey are completely anonymous.
3. There are no questions within the survey that elicit any need for disclosure or reporting under Florida law.

**Benefits:**

We cannot promise any benefits to you or others from your taking part in this research. However, possible benefits include through participation you may learn more about your own situations and conditions to help in their overall wellness and further recovery within your own situation and needs.

Additionally, your participation may help other veterans and their families more easily reintegrate and return to a full and healthy life within their respective communities.

**Compensation or payment:**

There is no compensation or other payment to you for taking part in this study.

**Anonymous research:** This study is anonymous. That means that no one, not even members of the research team, will know that the information you gave came from you.

**Study contact for questions about the study or to report a problem:** If you have questions, concerns, or complaints, or think the research has hurt you, talk to Mr. Michael S. Bermes, Graduate Student, Public Affairs Doctoral Program, College of Health and Public Affairs, (407) 823-3054 or Dr. Eileen Mazur Abel, Faculty Supervisor, Department of Social Work at (407) 823-3967 or by email at eabel@ucf.edu.

**IRB contact about your rights in the study or to report a complaint:** Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901. You may also talk to them for any of the following:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You want to get information or provide input about this research.

**Consent:** By submitting the questionnaire you are giving consent for the information that you provide to be used in the study. The following link will access the start of the survey.

<https://www.surveymonkey.com/s/KSF9Q86>

**APPENDIX C: UCF REGISTRAR'S APPROVAL TO USE THE VETERAN'S  
ACADEMIC RESOURCE CENTER DATABASE**



RE: Dissertation Request

<https://webmail.ucf.edu/owa/?ae=Item&t=IPM.Note&id=RgAAAA...>

**RE: Dissertation Request**

Paul Viau

**Sent:** Monday, November 19, 2012 11:58 AM

**To:** Michael Bermes

**Cc:** Eileen Abel

Michael,

The Veterans Academic Resource Center would be proud to help you with your dissertation. Let me know your timeframe for sending the survey out.

All the best,

Paul

Paul H. Viau, Jr. M.S.Ed  
Associate University Registrar - Registrar's Office  
Director - Veterans Academic Resource Center  
161 Millican Hall  
University of Central Florida  
Orlando, FL 32816-0114  
407-823-3100

UCF Stands for Opportunity



**APPENDIX D: INITIAL STUDENT VETERAN EMAIL INVITATION TO  
PARTICIPATE IN SURVEY**

Dear Student Veteran;

We need your help and invite you to participate in this study. Your assistance could ultimately help current and future returning service members coming back home. Mr. Michael Bermes, a retired U.S. Army veteran is completing his dissertation here at the University of Central Florida, College of Health and Public Affairs. His research will explore the predictors of the severity of Post-Traumatic Stress Disorder among combat-exposed veterans. By completing this survey, you will be assisting in this effort. It is anticipated that study outcomes will provide valuable information about the severity of combat-related Post-Traumatic Stress Disorder (PTSD) upon our veterans.

The survey, which is being sent to a sample of UCF veteran students, is completely anonymous. The study is anonymous which means that no one, not even the researcher can match responses to a specific individual.

The researcher will provide an Executive Summary of the results that will be available upon request to Mr. Michael S. Bermes, at [msbermes@knights.ucf.edu](mailto:msbermes@knights.ucf.edu). All we are asking is for approximately 20 minutes of your time in order to complete this critical and important online survey.

If you have any questions please contact the researcher Mr. Michael Bermes at 407-823-3054, or Dr. Eileen Mazur Abel, Dissertation Chair at 407-823-3967.

**The first two pages of the survey contain the consent form** for this research. Please read the consent form to answer questions you may have regarding the survey. It is also attached to this document for you to read or download as you may desire.

BY LINKING TO THE SURVEY WEBSITE, YOU ARE ACKNOWLEDGING:

1. YOU ARE AT LEAST 18 YEARS OLD,
2. YOU ARE A VETERAN,
3. YOU HAVE READ THE ABOVE INFORMATION,
4. YOU CONSENT TO BE A PARTICIPANT.

<http://www.surveymonkey.com/s/KSF9Q86>

Thank you again for taking time to complete the survey. We appreciate your participation.

**APPENDIX E: FOLLOW UP STUDENT VETERAN EMAIL INVITATION TO  
PARTICIPATE IN SURVEY**

Dear Student Veteran;

A few weeks ago, we emailed asking you to consider being a part of a critical veteran survey. If you have responded, please accept our sincere thanks for your participation. If you have not responded we reinvite you to take part in the study.

Your assistance could ultimately help current and future returning service members coming back home. Mr. Michael Bermes, a retired U.S. Army veteran is completing his dissertation here at the University of Central Florida, College of Health and Public Affairs. His research will explore the predictors of the severity of Post-Traumatic Stress Disorder among combat-exposed veterans. By completing this survey, you will be assisting in this effort. It is anticipated that study outcomes will provide valuable information about the severity of combat-related Post-Traumatic Stress Disorder (PTSD) upon our veterans.

The survey, which is being sent to a sample of UCF veteran students, is completely anonymous. The study is anonymous which means that no one, not even the researcher can match responses to a specific individual.

The researcher will provide an Executive Summary of the results that will be available upon request to Mr. Michael S. Bermes, at [msbermes@knights.ucf.edu](mailto:msbermes@knights.ucf.edu). All we are asking is for approximately 20 minutes of your time in order to complete this critical and important online survey.

If you have any questions please contact the researcher Mr. Michael Bermes at 407-823-3054, or Dr. Eileen Mazur Abel, Dissertation Chair at 407-823-3967.

**The first two pages of the survey contain the consent form** for this research. Please read the consent form to answer questions you may have regarding the survey. It is also attached to this document for you to read or download, as you may desire.

BY LINKING TO THE SURVEY WEBSITE, YOU ARE ACKNOWLEDGING:

1. YOU ARE AT LEAST 18 YEARS OLD,
2. YOU ARE A VETERAN,
3. YOU HAVE READ THE ABOVE INFORMATION,
4. YOU CONSENT TO BE A PARTICIPANT.

<http://www.surveymonkey.com/s/KSF9Q86>

Thank you again for taking time to complete the survey. We appreciate your participation.

## **APPENDIX F: ONLINE VETERAN SURVEY**

## 1. Informed Consent

Childhood Predictors of Severity of Combat Related Post-Traumatic Stress Disorder (PTSD) Among Veterans with Combat Related Exposure

Informed Consent for an Adult in an Exempt Research Study

Principal Investigator(s): Michael S. Bernes, MSW, CAP, ICADC  
Faculty Supervisor: Eileen Mazur Abel, PhD, LCSW

Investigational Site(s): Veteran's Academic Resource Center (VARC) & Registrar's Office  
Orlando, Daytona Beach, & Cocoa Beach Campuses  
University of Central Florida

### Introduction:

Researchers at the University of Central Florida (UCF) study many topics. To do this we need the help of people who agree to take part in a research study. You are being invited to take part in a research study, which will include about 1400 people at UCF. You have been asked to take part in this research study because you are a veteran that may have post-traumatic stress disorder because of combat-related exposure/s. You must be 18 years of age or older to be included in the research study.

The person doing this research is Michael S. Bernes, MSW, CAP, ICADC, Retired U.S. Army of UCF College of Health and Public Affairs, Public Affairs Doctoral Program & School of Social Work. Because the researcher is a graduate student, he is being guided by Dr. Eileen Mazur Abel, a UCF faculty supervisor in the Department of Social Work.

### What you should know about a research study:

- A research study is something you volunteered for.
- Whether or not you take part is up to you.
- You should take part in this study only because you want to.
- You can choose not to take part in the research study.
- You can agree to take part now and later change your mind.
- Whatever you decide it will not be held against you.
- Feel free to ask all the questions you want before you decide.

### Purpose of the research study:

The purpose of this study is to understand more about what PTSD is and what predictors or risk factors form a greater severity of combat-related PTSD. This severity creates greater levels of veteran reintegration problems and community-based issues not only now, but also well into the future.

The goal of this dissertation is to provide an addition to existing knowledge base and to suggest an altered future course for military accession practices and policies from an interdisciplinary and Public Affairs perspective. The ultimate goal of the research is to minimize community-based implications and challenges and the reduction or elimination of the undefinable societal costs of war.

### What you will be asked to do in the study:

To complete an online survey consisting of the following items:

- There are 81 items in the online survey.
- The entire survey should take approximately 30 minutes.

You do not have to answer every question or complete every task. You will not lose any benefits if you skip questions or tasks.

Location: The entire research is in survey form and online.

### Time required:

We expect that you will be in this research online study for approximately 30 minutes.

### Risk:

1. Some of the questions involve sensitive information about past childhood adversities. There is a minimal risk of revisiting, reliving, or

remembering distressing traumatic events or incidents that may provide grounds to anxiety, flashbacks, emotional stress points to which you may feel stress or inability to cope to move beyond the moment in time. If any of these feelings or situations occur, please contact the following:

The UCF Counseling Center Crisis Line, 407-923-2611

Mon-Thurs: 8am - 8pm

Fri: 8am - 5pm

or an after-hours crisis:

Immediate Emergency call 911 or UCF Crisis Center 407-425-2624

2. There is no risk with a breach of confidentiality as all survey are completely anonymous.
3. There are no questions within the survey that elicit any need for disclosure or reporting under Florida law.



## 2. Informed Consent Continued

### Benefits:

We cannot promise any benefits to you or others from your taking part in this research. However, possible benefits include through participation you may learn more about your own situations and conditions to help in their overall wellness and further recovery within your own situation and needs.

Additionally, your participation may help other veterans and their families more easily reintegrate and return to a full and healthy life within their respective communities.

### Compensation or payment:

There is no compensation or other payment to you for taking part in this study.

**Anonymous research:** This study is anonymous. That means that no one, not even members of the research team, will know that the information you gave came from you.

**Study contact for questions about the study or to report a problem:** If you have questions, concerns, or complaints, or think the research has hurt you, talk to Mr. Michael S. Bernes, Graduate Student, Public Affairs Doctoral Program, College of Health and Public Affairs, (407) 823-3054 or Dr. Eileen Mazur Abel, Faculty Supervisor, Department of Social Work at (407) 823-3987 or by email at eabel@ucf.edu.

**IRB contact about your rights in the study or to report a complaint:** Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3248 or by telephone at (407) 823-2901. You may also talk to them for any of the following:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You want to get information or provide input about this research.

**Consent:** By submitting the questionnaire you are giving consent for the information that you provide to be used in the study.

Thank you again for helping America's veterans.

Michael S. Bernes, Military Social Worker  
Retired U.S. Military

**3.**

**1. I agree to participate in this survey.**

☐ Yes

☐ No

4

**2. I am 18 years of age or older.**

☐ Yes

☐ No

**5.**

**3. I am a military veteran from any era.**

☐ Yes

☐ No

6.

**4. As a military veteran from any era, have you been exposed to any of the following: combat trauma, combat-related trauma, or military sexual trauma resulting in: (Check all that apply)**

- ☐ A diagnosis of Post-traumatic Stress Disorder (PTSD) or
- ☐ Treatment for PTSD and/or
- ☐ Have been informed of having symptoms of PTSD.
- ☐ I do not knowingly have combat-related PTSD or any other criteria mentioned above.

## 7. Demographics

### 5. What was your gender at time of military service?

- ☐ Male  
☐ Female

### 6. Number of combat or combat exposed tours of duty?

- ☐ 1  
☐ 2  
☐ 3  
☐ 4 or more

### 7. What do you consider as your race? You may answer with more than one selection.

- ☐ White  
☐ Black or African American  
☐ American Indian or Alaska Native  
☐ Latino or Hispanic  
☐ Asian Indian  
☐ Chinese  
☐ Filipino  
☐ Japanese  
☐ Korean  
☐ Vietnamese  
☐ Native Hawaiian  
☐ Guamanian or Chamorro  
☐ Samoan  
☐ Other Pacific Islander

### 8. What was your former branch of military service? You may answer more than one.

- ☐ Air Force  
☐ Army  
☐ Coast Guard  
☐ Marine  
☐ Navy  
☐ A foreign military

9. What is your age?

## 8. Head of House

The following two questions are referring to YOUR PRIMARY HEAD OF HOUSE with which you resided with for the majority of your childhood years.

**10. What was the greatest level of school completed by the primary head of house?**

- ☐ a. Less than seventh grade
- ☐ b. Junior high school (ninth grade)
- ☐ c. Partial high school (tenth or eleventh grade)
- ☐ d. High school graduate
- ☐ e. Partial college (at least one year) or specialized training
- ☐ f. Standard college or university graduate
- ☐ g. Graduate professional training

**11. What best describes the occupation your head of household normally pursued during gainful employment?**

**Please be specific (bank teller, cashier at Publix, Elementary school teacher, etc.)**

**12. Did you have a SECONDARY head of house or two-parental figures house hold for the majority of your childhood years?**

- ☐ YES
- ☐ NO



### 9. Secondary Head of House (continued)

The following two questions are regarding your **SECONDARY** head of house with which you resided with the majority of your childhood years.

Please answer for the secondary head of house (not the parental figure referred to in the previous page.)

**13. What was the greatest level of school completed by the secondary head of house?**

- ☐ Less than seventh grade
- ☐ Junior high school (ninth grade)
- ☐ Partial high school (tenth or eleventh grade)
- ☐ High school graduate
- ☐ Partial college (at least one year) or specialized training
- ☐ Standard college or university graduate
- ☐ Graduate professional training

**14. What best describes the occupation your secondary head of household normally pursued during gainful employment?**

Please be specific (bank teller, cashier at Publix, Elementary school teacher, etc.)

## 10.

This page is designed to assess childhood experiences that may have had an impact on you now, today. This page is referring to your experiences BEFORE AGE 18.

**15. Were you ever exposed to a life-threatening natural disaster?**

- ☐ Yes  
☐ No

**16. Were you involved in a serious accident?**

- ☐ Yes  
☐ No

**17. Did you ever suffer a serious personal injury or illness?**

- ☐ Yes  
☐ No

**18. Did you ever experience the death or serious illness of a parent or a primary caretaker?**

- ☐ Yes  
☐ No

**19. Did you experience the divorce or separation of your parents?**

- ☐ Yes  
☐ No

**20. Did you experience the death or serious injury of a sibling?**

- ☐ Yes  
☐ No

**21. Did you ever experience the death or serious injury of a friend?**

- ☐ YES  
☐ NO

**22. Did you ever witness violence towards others, including family members?**

- ☐ YES  
☐ NO

**23. Did anyone in your family ever suffer from mental psychiatric illness or have a "breakdown"?**

- ☐ YES  
☐ NO

**24. Did your parents or primary care taker have a problem with alcoholism or drug abuse?**

- ☐ YES  
☐ NO

**25. Did you ever see someone murdered?**

- ☐ YES  
☐ NO

**26. Were you ever slapped in the face with an open hand?**

- ☐ YES  
☐ NO

**27. Were you ever burned with hot water, a cigarette, or something else?**

- ☐ YES  
☐ NO

**28. Were you ever punched or kicked?**

- ☐ YES  
☐ NO

**29. Were you ever hit with an object that was thrown at you?**

- ☐ YES  
☐ NO

**30. Were you ever pushed or shoved?**

- ☐ YES  
☐ NO

**31. Were you often put down or ridiculed?**

- ☐ YES  
☐ NO

**32. Were you often put down or made to feel that you did not count?**

☐ YES

☐ NO

**33. Were you often told you were no good?**

☐ YES

☐ NO

**34. Most of the time you were treated in a cold, uncaring way or made to feel like you were not loved?**

☐ YES

☐ NO

**35. Did your parents or caretakers often fail to understand your needs?**

☐ YES

☐ NO

**36. Were you ever touched in an intimate or private part of your body (e.g. breasts, thighs, genitals) in a way that surprised you or made you uncomfortable?**

☐ YES

☐ NO

**37. Did you ever experience someone rubbing their genitals against you?**

☐ YES

☐ NO

**38. Were you ever forced or coerced to touch another person in an intimate or private part of their body?**

☐ YES

☐ NO

**39. Did anyone ever have genital sex with you against your will?**

☐ YES

☐ NO

**40. Were you ever forced or coerced to to perform oral sex on someone against your will?**

☐ YES

☐ NO

**11.**

If you responded "YES" for the any of the previous pages events, answer the following for the one that had the greatest impact on your life. In answering consider how you felt AT THE TIME OF THE EVENT.

**43. Did you experience emotions of intense fear, horror or hopelessness?**

☐ YES

☐ NO

**44. Did you feel out-of-body or as if you were in a dream?**

☐ YES

☐ NO

## 12.

These questions refer to your life while you were being raised.

The person or people who raised you.....

**45. Did not keep me clean.**

- ☐ True  
☐ False

**46. Did not care if I did things like shoplifting.**

- ☐ True  
☐ False

**47. Did not care if I got into trouble in school.**

- ☐ True  
☐ False

**48. Did not give me enough clothes to keep me warm.**

- ☐ True  
☐ False

**49. Did not help me when I had problems.**

- ☐ True  
☐ False

**50. Did not comfort me when I was upset.**

- ☐ True  
☐ False

**51. Did not help me to do my best.**

- ☐ True  
☐ False

**52. Did not help me with homework.**

- ☐ True  
☐ False

INSTRUCTIONS: Below is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty has been for you DURING THE LAST SEVEN DAYS with respect to your combat related trauma exposure. How much were you distressed or bothered by these difficulties?

In the last 7 days, how much were you distressed or bothered by these difficulties?

**60. Any reminder brought back feelings about it.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**61. I had trouble staying asleep.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**62. Other things kept making me think about it.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**63. I felt irritable and angry**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**64. I avoided letting my self get upset when I thought about it or was reminded of it.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**65. I thought about it when I didn't mean to.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**66. I felt as if it hadn't happened or wasn't real.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**67. I stayed away from reminders of it.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**68. Pictures about it popped into my mind.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**69. I was jumpy and easily startled.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**70. I tried not to think about it.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**71. I was aware that I still had a lot of feelings about it, but I didn't deal with them.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**72. My feelings about it were kind of numb.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**73. I found myself acting or feeling like I was back at that time.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**74. I had trouble falling asleep.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**75. I had waves of strong feelings about it.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**76. I tried to remove it from my memory.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**77. I had trouble concentrating.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**78. Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |



**79. I had dreams about it.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**80. I felt watchful and on-guard.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**81. I tried not to talk about it.**

|  | Not at all            | A little bit          | Moderately            | Quite a bit           | Extremely             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Difficulty or bothersome for you in the last seven days: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**APPENDIX G: EARLY TRAUMA INVENTORY SELF REPORT-SHORT FORM  
(ETISR-SF)**

## Early Trauma Inventory Self Report-Short Form (ETISR-SF)

J. Douglas Bremner, Emory University School of Medicine, Atlanta GA

Participant Name or ID: \_\_\_\_\_ DOB: \_\_\_\_\_ Age: \_\_\_\_\_ Assessment Date: \_\_\_\_\_

### Part 1. General Traumas. Before the age of 18

- |  |     |    |
|--|-----|----|
| 1. Were you ever exposed to a life-threatening natural disaster?.....                                    | YES | NO |
| 2. Were you involved in a serious accident? .....  | YES | NO |
| 3. Did you ever suffer a serious personal injury or illness? .....                                       | YES | NO |
| 4. Did you ever experience the death or serious illness of a parent or a primary caretaker? .....        | YES | NO |
| 5. Did you experience the divorce or separation of your parents? .....                                   | YES | NO |
| 6. Did you experience the death or serious injury of a sibling? .....                                    | YES | NO |
| 7. Did you ever experience the death or serious injury of a friend? .....                                | YES | NO |
| 8. Did you ever witness violence towards others, including family members? .....                         | YES | NO |
| 9. Did anyone in your family ever suffer from mental or psychiatric illness or have a "breakdown"? ..... | YES | NO |
| 10. Did your parents or primary caretaker have a problem with alcoholism or drug abuse? .....            | YES | NO |
| 11. Did you ever see someone murdered? .....   | YES | NO |

### Part 2. Physical Punishment. Before the age of 18

- |  |     |    |
|--|-----|----|
| 1. Were you ever slapped in the face with an open hand? .....                | YES | NO |
| 2. Were you ever burned with hot water, a cigarette or something else? ..... | YES | NO |
| 3. Were you ever punched or kicked? .....                                    | YES | NO |
| 4. Were you ever hit with an object that was thrown at you? .....            | YES | NO |
| 5. Were you ever pushed or shoved? .....                                     | YES | NO |

### Part 3. Emotional Abuse. Before the age of 18

- |   |     |    |
|---|-----|----|
| 1. Were you often put down or ridiculed? .....  | YES | NO |
| 2. Were you often ignored or made to feel that you didn't count? .....                                      | YES | NO |
| 3. Were you often told you were no good? .....  | YES | NO |
| 4. Most of the time were you treated in a cold, uncaring way or made to feel like you were not loved? ..... | YES | NO |
| 5. Did your parents or caretakers often fail to understand you or your needs?.....                          | YES | NO |

### Part 4. Sexual Events. Before the age of 18

- |  |     |    |
|--|-----|----|
| 1. Were you ever touched in an intimate or private part of your body (e.g. breast, thighs, genitals) in a way that surprised you or made you feel uncomfortable? ..... | YES | NO |
| 2. Did you ever experience someone rubbing their genitals against you?.....  | YES | NO |
| 3. Were you ever forced or coerced to touch another person in an intimate or private part of their body? .....   | YES | NO |
| 4. Did anyone ever have genital sex with you against your will? .....  | YES | NO |
| 5. Were you ever forced or coerced to perform oral sex on someone against your will? .....   | YES | NO |
| 6. Were you ever forced or coerced to kiss someone in a sexual rather than an affectionate way? .....  | YES | NO |

*If you responded "YES" for any of the above events, answer the following for the one that has had the greatest impact on your life. In answering consider how you felt at the time of the event.*

- |  |     |    |
|--|-----|----|
| 1. Did you experience emotions of intense fear, horror or helplessness?..... | YES | NO |
| 2. Did you feel out-of-your-body or as if you were in a dream? .....         | YES | NO |

*Revised on 3/09*

**APPENDIX H: STRAUSS MULTIDIMENSIONAL NEGLECTFUL BEHAVIORAL  
SCALE (MNBS), PERSONAL RELATIONSHIP PROFILE (PRP), NEGLECT HISTORY  
(NH) SUBSCALE**

**Table 2X. EIGHT ITEM SHORT FORM USED IN THE  
PERSONAL AND RELATIONSHIPS PROFILE (PRP) (Straus et al, 1999)**

Cognitive needs

1. Helped me when I had trouble understanding something (R)
2. My parents did not help me to do my best in school

Supervisory Needs

3. My parents did not care if I did things like shoplifting
4. My parents did not care if I got into trouble in school

Emotional needs

5. My parents helped me when I had problems (R)
6. My parents did not comfort me when I was upset

Physical needs

7. My parents gave me enough clothes to keep me warm (R)
8. My parents did not keep me clean

**APPENDIX I: HOLLINGSHEAD FOUR-FACTOR INDEX SOCIOECONOMIC  
STATUS**

**FOUR FACTOR INDEX OF  
SOCIAL STATUS**

by

A.B. Hollingshead

Unpublished Working Paper, 1975

Department of Sociology  
Yale University  
P.O. Box 208265  
New Haven, CT 06520-8265

tastes. Moreover, education is a prerequisite to entry into occupations that carry higher prestige in the social system. Occupation may change in the early years of adult life, but it too tends to become stable as a person grows into the late twenties and on into the thirties. It is presumed to be indicative of the skill and power individuals possess as they perform the maintenance functions in society. The sex of an individual remains constant throughout the course of the life cycle, but it plays an important part in the roles individuals play in the performance of maintenance functions in the society. Marital status defines the relationship of an adult male or female to the family system; it may or may not be stable from the early adult years on into old age. Both males and females participate in the educational process, mainly during the childhood and adolescent years.<sup>9</sup> Most adult males enter the labor force and fill occupational roles; in contemporary industrial society, more and more females are entering the labor force. Marital status is important in the calculation of social status because of differences in the ways adult family members participate in the economic system.<sup>10</sup> One spouse may be a full-time participant in the labor force while the other is not gainfully employed outside the home. However, as the years pass, the proportion of intact nuclear families with both spouses gainfully employed increases. Other families may be headed by a single, widowed, separated, or divorced male or female who is now or in the past has been gainfully employed. This index takes into consideration the several categories.

### III. Estimation of Social Status

Information on each of the four factors is easily gathered in an empirical study. The sex of a respondent is observable directly and is assumed to be what appearances indicate. The other factors require inquiry and evaluation. The use of each factor in the estimation of status is described in the following sections.

#### A. Marital Status

##### 1. Married and Living with Spouse

a. One spouse, male or female, gainfully employed; other spouse not employed. The estimated social position of this type of nuclear family is calculated on the basis of the employed member's education and occupation.

b. Both spouses gainfully employed. The education and occupation of each spouse is used to estimate the status position of the nuclear family.

It is assumed that the education and occupation of each spouse constitutes an equal proportion of the nuclear family's status. In the absence of theoretical and empirical evidence, a rule of thumb is followed, that is, education and occupation scores for the husband and wife are summed and divided by two. Research has indicated that the prestige of occupations is similar for males and females and that education is essentially the same for males and females in the same occupation.<sup>11</sup> In accordance with this finding, the combined score for the two spouses is assigned as the status score of the



family.

## 2. Family Without Spouse

Nuclear families or households may be headed by persons who have never married, divorced persons, persons permanently separated from a spouse, or widowed persons. Households falling into this category present the researcher with various alternatives:

- a. When the head has never been married, the status score is calculated by the use of the head's occupation and education.
- b. When a divorced person is employed full time in a gainful occupation, the occupation and education of the present head of the household should be used to calculate the status score.
- c. When a separated or divorced person is receiving support payments from an absent, present or former, spouse, but is not gainfully employed, the status score should be calculated from the education and occupation of the supporting spouse.
- d. When a widow or widower who is not gainfully employed is living on the income from the deceased spouse's estate, the status score should be computed on the education and occupation of the deceased spouse during the time he or she was gainfully employed.

## B. Retired Persons

For retired persons, the status score should be calculated from the education and occupation of the person before he, she, or they retired. The factor of marital status should be handled in the same way that it is for nuclear families with one or both spouses active in the labor force.

## C. The Educational Factor

The years of school a respondent has completed are scored on a seven-point scale, premised upon the assumption that men and women who possess different levels of education have different tastes and tend to exhibit different behavior patterns. The years of school an individual has completed are grouped in the same way as in the earlier Two Factor Index of Social Position.<sup>12</sup> The amount of formal education a person has completed is scored as follows:

| <u>Level of School Completed</u>   | <u>Score</u> |
|--|--------------|
| less than seventh grade  | 1            |
| junior high school (9th grade)   | 2            |
| partial high school (10th or 11th grade)   | 3            |
| high school graduate (whether private preparatory, parochial, trade, or public school) | 4            |
| partial college (at least one year) or specialized training                            | 5            |
| standard college or university graduation  | 6            |
| graduate professional training (graduate degree)                                       | 7            |

#### D. The Occupational Factor

The occupation a person ordinarily pursues during gainful employment is graded on a nine-step scale. Wherever possible, the scale has been keyed to the occupational titles used by the United States Census in 1970, and the three-digit code assigned by the census is given.<sup>13</sup> However, the occupational titles assigned by the census are not precise enough to delineate several occupational categories, especially proprietors of businesses, the military, farmers, and persons dependent upon welfare. Therefore, the occupational scale has departed from the titles and codes used by the census for a number of occupations and occupational groups.

## **APPENDIX J: IMPACT OF EVENT SCALE – REVISED**

## IMPACT OF EVENT SCALE- REVISED

**INSTRUCTIONS:** Below is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty has been for you **DURING THE PAST SEVEN DAYS** with respect to \_\_\_\_\_, which occurred on \_\_\_\_\_. How much were you distressed or bothered by these difficulties?

|                |                  |                |                 |               |
|----------------|------------------|----------------|-----------------|---------------|
| Not at all = 0 | A little bit = 1 | Moderately = 2 | Quite a bit = 3 | Extremely = 4 |
|----------------|------------------|----------------|-----------------|---------------|

1. Any reminder brought back feelings about it.
2. I had trouble staying asleep.
3. Other things kept making me think about it.
4. I felt irritable and angry.
5. I avoided letting myself get upset when I thought about it or was reminded of it.
6. I thought about it when I didn't mean to.
7. I felt as if it hadn't happened or wasn't real.
8. I stayed away from reminders of it.
9. Pictures about it popped into my mind.
10. I was jumpy and easily startled.
11. I tried not to think about it.
12. I was aware that I still had a lot of feelings about it, but I didn't deal with them.
13. My feelings about it were kind of numb.
14. I found myself acting or feeling like I was back at that time.
15. I had trouble falling asleep.
16. I had waves of strong feelings about it.
17. I tried to remove it from my memory.
18. I had trouble concentrating.
19. Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart.
20. I had dreams about it.
21. I felt watchful and on-guard.
22. I tried not to talk about it.

The **Intrusion** subscale is the **MEAN** item response of items 1, 2, 3, 6, 9, 14, 16, 20. Thus, scores can range from 0 through 4.

The **Avoidance** subscale is the **MEAN** item response of items 5, 7, 8, 11, 12, 13, 17, 22. Thus, scores can range from 0 through 4.

The **Hyperarousal** subscale is the **MEAN** item response of items 4, 10, 15, 18, 19, 21. Thus, scores can range from 0 through 4.

Citations: Weiss, D.S. & Marmar, C.R. (1997). The Impact of Event Scale-Revised. In J.P. Wilson, & T. M. Keane (Eds.), *Assessing Psychological Trauma and PTSD: A Practitioner's Handbook*. (pp. 399-411). New York: Guilford.  
Weiss, D. S. (2004). The Impact of Event Scale-Revised. In J. P. Wilson, & T. M. Keane (Eds.), *Assessing psychological trauma and PTSD: A practitioner's handbook* (2<sup>nd</sup> ed., pp. 168-189). New York: Guilford Press.

## **APPENDIX K: COMBAT EXPOSURE SCALE**

## CES

***Please circle the number above the answer that best describes your experience***

1) Did you ever go on combat patrols or have other dangerous duty?

|    |      |       |        |          |
|----|------|-------|--------|----------|
| 1  | 2    | 3     | 4      | 5        |
| No | 1-3X | 4-12x | 13-50x | 51+times |

2) Were you ever under enemy fire?

|       |          |            |            |               |
|-------|----------|------------|------------|---------------|
| 1     | 2        | 3          | 4          | 5             |
| Never | <1 month | 1-3 months | 4-6 months | 7 mos or more |

3) Were you ever surrounded by the enemy?

|    |      |       |        |          |
|----|------|-------|--------|----------|
| 1  | 2    | 3     | 4      | 5        |
| No | 1-2X | 3-12x | 13-25x | 26+times |

4) What percentage of the soldiers in your unit were killed (KIA), wounded or missing in action (MIA)?

|      |       |        |        |             |
|------|-------|--------|--------|-------------|
| 1    | 2     | 3      | 4      | 5           |
| None | 1-25% | 26-50% | 51-75% | 76% or more |

5) How often did you fire rounds at the enemy?

|       |      |       |        |            |
|-------|------|-------|--------|------------|
| 1     | 2    | 3     | 4      | 5          |
| Never | 1-2X | 3-12x | 13-50x | 51 or more |

6) How often did you see someone hit by incoming or outgoing rounds?

|       |      |       |        |            |
|-------|------|-------|--------|------------|
| 1     | 2    | 3     | 4      | 5          |
| Never | 1-2X | 3-12x | 13-50x | 51 or more |

7) How often were you in danger of being injured or killed (i.e., being pinned down, overrun, ambushed, near miss, etc.)?

|       |      |       |        |            |
|-------|------|-------|--------|------------|
| 1     | 2    | 3     | 4      | 5          |
| Never | 1-2X | 3-12x | 13-50x | 51 or more |

Keane, T.M., Fairbank, J.A., Caddell, J.M., Zimering, R.T., Taylor, K.L. & Mora, C.A. (1989)

## **APPENDIX L: APPROVAL TO USE ETISR-SF**

## **Emory Clinical Neuroscience Research Unit (ECNRU)**

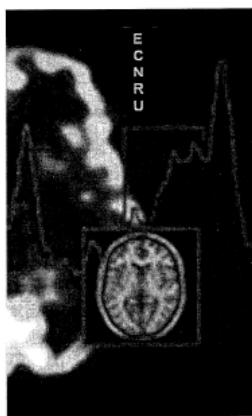
**Dedicated to Research and Education for Patients suffering from Stress-related Illnesses**

**J. Douglas Bremner, M.D., Director**

---

1256 Briarcliff Rd, 1256/001/AT, Atlanta GA 30306; (404) 727-4193; Fax: 404.712.2013; email Stacy at [sladd2@emory.edu](mailto:sladd2@emory.edu)

Note we are **not** located at the same site as Emory University Hospital. For a map [click here](#). Parking is available on site for free.



### *Who We Are*

We are a research group funded by the National Institutes of Health, Veterans Administration, and Department of Defense.

We perform research on the brain and neurobiological correlates of posttraumatic stress disorder (PTSD), major depression, anxiety disorders and dissociation.

Our mission is to understand how stress affects the brain and leads to mental disorders, and ways to translate this knowledge into new treatments.

We are currently performing studies of brain imaging before and after treatment in veterans returning from Iraq with symptoms of posttraumatic stress disorder (PTSD) Including symptoms of intrusive memories, feeling cut off from others, trouble sleeping, increased startle, and avoidance of reminders of the war.

We are also doing studies of non-veteran women with a

history of childhood sexual abuse-related PTSD.

Contact Stacy Ladd at (404) 712-2013 or [sladd2@emory.edu](mailto:sladd2@emory.edu) for more information.

- [List of ECNRU Staff and Contact information](#)
- [Current Studies at the ECNRU](#)
- [List of instruments including the ETI and CADSS](#)
- [List of ECNRU publications](#)
- [Dr. Bremner's bio and personal web site](#)
- Dr. Bremner's [books](#) including *Before You Take That Pill, Does Stress Damage the Brain?* and *Brain Imaging Handbook*



## **Research Instruments from the ECNRU**

### *Who We Are*

Research instruments on this page were developed by the ECNRU and collaborators.

You are free to use these instruments. Papers on psychometrics properties are on the publications page.

We currently have three versions of the Early Trauma Inventory, one is [clinician administered](#), the other [self report](#), and more recently we validated an ETI self report short form ([ETI-SR SF](#)). The [Clinician Administered Dissociative States Scale \(CADSS\)](#) is a validated state measure of dissociation that can be used to measure change in dissociation with treatment or with biological studies.

[back to ECNRU home page](#)

## **APPENDIX M: APPROVAL TO USE MNBS, PRP, NH SUBSCALE**

# THE MULTIDIMENSIONAL NEGLECTFUL BEHAVIOR SCALE - USE AGREEMENT

PROJECT TITLE/PURPOSE OF ADMINISTERING THE MNBS: Dissertation PhD: Childhood predictors in the severity of COMBAT Related Post-Traumatic Stress Disorder Among Veterans with COMBAT Related Exposure

## ESTIMATED NUMBER TO BE TESTED:

Parent Form FEMALES: \_\_\_\_\_ MALES: \_\_\_\_\_ COUPLES: \_\_\_\_\_ (both tested)  
Adult Recall Form FEMALES: 60 MALES: 140  
Child Report Form FEMALES: \_\_\_\_\_ MALES: \_\_\_\_\_

APPROXIMATE MONTH AND YEAR TESTING WILL BEGIN: FEB or MARCH 2013 AND END: Aug 2013

DO YOU PLAN TO PROVIDE US WITH RAW DATA TO CONDUCT PSYCHOMETRIC ANALYSES FOR THE MANUAL?

☒ Yes ☐ No

If YES, please indicate the form in which you plan to provide data to us to conduct psychometric analyses

☐ Answer sheets or questionnaires to be entered into a data file by the Test Authors

☒ File of data on disk in one of the following formats:

(circle one) ASCII, Word Perfect, Word, SPSS, SAS, STATA.

If NO, please attach a paragraph describing your plan to provide us with psychometric analyses based on your data (See attached page)

Name of Cooperating User: MICHAEL S. BERMES, MSW, CAP, ICADC

Address: University of Central Florida, School of Social Work, HPA 1, RM 238, 4000 Central Florida Blvd., P.O. Box 163358, ORLANDO, FL 32816-3358

PHONE (407) 823-3054 FAX: \_\_\_\_\_ E-Mail: mbermes@ucf.edu

Your Website (if you have one): \_\_\_\_\_

I agree to the terms of agreement and to provide data as indicated above.

Cooperating User Signature Michael Bermes DATE Feb 1, 2013

STUDENTS: Please have your faculty advisor for this research sign below:

Faculty Advisor Signature Eileen M. Abel DATE Feb 1, 2013

Advisor Name, Title: Professor Eileen M. ABEL, PhD

Advisor Department and Institution: School of Social Work, UCF

Advisor E-Mail Address eileen.abel@ucf.edu Phone Number (407) 823-3967

For the Test Authors\*: [Signature] DATE 21 Feb 2013

\* The Test Authors of the MNBS are Murray A. Straus and Glenda Kaufman Kantor

## **APPENDIX N: APPROVAL TO USE CES**

PTSD

<https://webmail.ucf.edu/owa/?ac=Item&t=IPM.Note&id=RgAAAA...>

## PTSD

Barnett, Erin [Erin.Barnett@va.gov]

**Sent:** Tuesday, August 14, 2012 9:18 AM

**To:** Michael Bermes

Greetings, and thank you for your assessment instrument request. You may access these instruments by Ctrl+Click on:

<https://downloads.va.gov>

Step 1: Click "multiple files" link. If that does not work, go to "single files"

Step 2: Once file browser window opens, double click to open "PTSDinfo" folder.

Step 3: Double click to open "PTSD Assessments".

Step 4: Measures are grouped within folders by type. Select the trauma measure or measures you are looking for within each folder. Refer to the folder listing in the left panel of the screen to access particular folders.

You may have to click to get past a security page. If it asks for a **Username and Password**, the Username is "PTSD" and Password is "Assessments" – these are case sensitive.

These assessment tools were created by government employees and therefore are not copyrighted and are **free for use by qualified health professionals**. As such, you have permission to use the assessment tools provided. Please let us know if you have any trouble downloading these instruments. Also, no thank you email is necessary.

Sincerely,

National Center for PTSD Staff

Erin Barnett, Ph.D.

Psychologist

National Center for PTSD/

Dartmouth Trauma Interventions Research Center

**APPENDIX O: APPROVAL TO USE HOLLINGSHEAD FOUR-FACTOR INDEX OF  
SOCIOECONOMIC STATUS**

**Re: Guidance and Information Please**

Julia Adams [julia.adams@yale.edu]

**Sent:** Saturday, October 27, 2012 2:59 PM

**To:** Michael Bermes

Greetings, Mr. Bermes -

No permissions are necessary - the department was receiving hundreds of requests a year for this, so we just published the information on our website, open to all comers. [http://www.yale.edu/sociology/yjs/yjs\\_fall\\_2011.pdf](http://www.yale.edu/sociology/yjs/yjs_fall_2011.pdf)

So you should not only feel free to use, but tell all friends and relatives as well :)

Cheers,  
Julia Adams

[http://www.yale.edu/sociology/yjs/yjs\\_fall\\_2011.pdf](http://www.yale.edu/sociology/yjs/yjs_fall_2011.pdf)

On 10/27/12 2:57 PM, Michael Bermes wrote:

Dear Dr. Adams,  
I apologize for bothering you with such a trivial request, but I am working on my dissertation at the College of Health and Public Affairs, University of Central Florida. I am wishing to use Dr. Hollingshead's Four Factor Index and cannot find where I can purchase, obtain approval, or other related information. Knowing that Yale is proudly the home of this manuscript, can you please advise a direction to pursue to obtain approval to use this scale. Thank you for your time and attention.  
Very Respectfully,

Michael S. Bermes, MSW, CAP, ICADC  
Ph.D. Candidate (ABd)  
Coordinator & Instructor, Military Social Work  
U.S. Military Retired  
Registered Social Worker Intern # 7469  
University of Central Florida  
College of Health and Public Affairs  
School of Social Work  
Office: 407-823-3054  
Cellular: 727-518-5890  
[EMAIL:michael.bermes@ucf.edu](mailto:EMAIL:michael.bermes@ucf.edu)

--

-----

Julia Adams  
Professor of Sociology and in International and Area Studies  
Chair, Department of Sociology  
Joseph C. Fox Director, Fox International Fellowship Program  
Yale University

office address:  
446 Rosenkranz Hall  
115 Prospect Street  
tel. 203-432-3332

Work Mailing Address:  
Department of Sociology  
Yale University  
P.O. Box 208265  
New Haven CT 06520-8265

## **APPENDIX P: APPROVAL TO USE IMPACT OF EVENT SCALE**



**RE: Request for Scale and Use In Dissertation**

Weiss, Daniel [Daniel.Weiss@ucsf.edu]

**Sent:** Tuesday, August 07, 2012 3:33 PM

**To:** Michael Bermes

**Attachments:** IES-R Form and Scoring.doc (40 KB) ; IES-R Use Issues November ~1.doc (76 KB)

see attached

---

Daniel S. Weiss, Ph.D.

Editor in Chief, *Journal of Traumatic Stress*

Professor of Medical Psychology

Department of Psychiatry

University of California San Francisco

San Francisco, CA 94143-0984

P: 415 476 7552

F: 415 476 7552

Mail Code: UCSF Box 0984-F

---

**From:** Michael Bermes [mailto:Michael.Bermes@ucf.edu]

**Sent:** Tuesday, August 07, 2012 10:08 AM

**To:** Weiss, Daniel

**Subject:** Request for Scale and Use In Dissertation

Dear Dr. Weiss,

I am currently working on my dissertation phase of my Ph.D. in Public Affairs in a Social Work Track, University of Central Florida. I noted your address on the National Center for PTSD regarding the Impact of Event Scale Revised. My dissertation is exploring and titled Childhood Predictors of Combat Post-Traumatic Stress Disorder Severity among Combat Exposed Veterans. I would like to acquire a copy of your Impact of Event Scale Revised to use in my dissertation research. I admire your work and would like to use your scale if you would be so kind. Thank you in advance for your time and attention.

Respectfully,

Michael S. Bermes, MSW, CAP, ICADC

Ph.D. Candidate (ABd)

Coordinator & Instructor, Military Social Work

U.S. Military Retired

Registered Social Worker Intern # 7469

University of Central Florida

College of Health and Public Affairs

School of Social Work

Office: 823-823-3054

Cellular: 727-518-5890

EMAIL: michael.bermes@ucf.edu

## **APPENDIX Q: TRAUMA, SES, AND NEGLECT CHARACTERISTICS**

Table 6: *Means ( $\mu$ ) of Various Trauma Dimensions*

|            | General | Physical | Emotional | Sexual |
|------------|---------|----------|-----------|--------|
| <i>n</i> = | 102     | 102      | 102       | 102    |
| Missing    | 0       | 0        | 0         | 0      |
| Mean       | 3.18    | 2.22     | 2.24      | 2.20   |

Table 7: *Incidents of General Trauma among Study Participants*

|             |     |       |       |       |
|-------------|-----|-------|-------|-------|
| 1 incidents | 17  | 16.7  | 16.7  | 87.3  |
| 5 incidents | 5   | 4.9   | 4.9   | 92.2  |
| 6 incidents | 4   | 3.9   | 3.9   | 96.1  |
| 7 incidents | 3   | 2.9   | 2.9   | 99.0  |
| 8 incidents | 1   | 1.0   | 1.0   | 100.0 |
| Total       | 102 | 100.0 | 100.0 |       |

Table 8: *Incidents of Physical Trauma among Study Participants*

| Physical Traumas | Frequency | %     | Valid % | Cumulative % |
|------------------|-----------|-------|---------|--------------|
| No incidents     | 43        | 42.2  | 42.2    | 42.2         |
| 2 incidents      | 34        | 33.3  | 33.3    | 75.5         |
| 1 incidents      | 17        | 16.7  | 16.7    | 92.2         |
| 5 incidents      | 7         | 6.9   | 6.9     | 99.0         |
| 4 incidents      | 1         | 1.0   | 1.0     | 100.0        |
| Total            | 102       | 100.0 | 100.0   |              |

Table 9: *Incidents of Emotional Trauma among Study Participants*

| Emotional Incidents | Frequency | %     | Valid % | Cumulative % |
|---------------------|-----------|-------|---------|--------------|
| No incidents        | 64        | 62.7  | 62.7    | 62.7         |
| 5 incidents         | 15        | 14.7  | 14.7    | 77.5         |
| 3 incidents         | 13        | 12.7  | 12.7    | 90.2         |
| 1 incidents         | 8         | 7.8   | 7.8     | 98.0         |
| 2 incidents         | 2         | 2.0   | 2.0     | 100.0        |
| Total               | 102       | 100.0 | 100.0   |              |

Table 10: *Incidents of Sexual Trauma among Study Participants*

| Sexual Trauma | Frequency | %     | Valid % | Cumulative % |
|---------------|-----------|-------|---------|--------------|
| No incidents  | 67        | 65.7  | 65.7    | 65.7         |
| 3 incidents   | 11        | 10.8  | 10.8    | 76.5         |
| 6 incidents   | 9         | 8.8   | 8.8     | 85.3         |
| 2 incidents   | 8         | 7.8   | 7.8     | 93.1         |
| 1 incidents   | 4         | 3.9   | 3.9     | 97.1         |
| 5 incidents   | 3         | 2.9   | 2.9     | 100.0        |
| Total         | 102       | 100.0 | 100.0   |              |

Table 11: *Means ( $\mu$ ) of Various SES Dimensions*

|            | OC     | ED    | OC2    | ED2    |
|------------|--------|-------|--------|--------|
| <i>n</i> = | 102    | 102   | 102    | 102    |
| Missing    | 0      | 0     | 0      | 0      |
| Mean       | 5.1961 | 4.961 | 2.9608 | 3.7451 |
| Minimum    | 1      | 2     | 0      | 0      |
| Maximum    | 9      | 7     | 8      | 7      |

Note: OC = Primary Head of Household Occupation;

ED = Primary Head of Household Education;

OC2 = Secondary Head of Household Occupation;

ED2 = Secondary Head of Household Education.

Table 12: *Educational Levels of the Heads of Household*

| Education Level                   | PH<br>Frequency | PH<br>% | PH<br>Cumulative<br>% | SH<br>Frequency | SH<br>% | SH<br>Cumulative<br>% |
|-----------------------------------|-----------------|---------|-----------------------|-----------------|---------|-----------------------|
| No 2 <sup>nd</sup> SH             |                 |         |                       | 24              | 23.5    | 23.5                  |
| < 7 <sup>th</sup> Grade           | 0               | 0       | 0                     | 2               | 2.0     | 25.5                  |
| Jr. High School                   | 1               | 1.0     | 1.0                   | 1               | 1.0     | 26.5                  |
| Partial HS                        | 7               | 6.9     | 7.8                   | 4               | 3.9     | 30.4                  |
| HS Grad                           | 39              | 38.2    | 46.1                  | 31              | 30.4    | 60.8                  |
| Partial College                   | 12              | 11.8    | 57.8                  | 7               | 6.9     | 67.6                  |
| Standard College or<br>University | 34              | 33.3    | 91.2                  | 24              | 23.5    | 91.2                  |
| Grad School of<br>Professional    | 9               | 8.8     | 100                   | 9               | 8.8     | 100                   |
| Total                             | 102             | 100     |                       | 102             | 100     |                       |

Note: PH = primary head of household; SH = secondary head of household.

Table 13: *Occupational Levels of the Heads of Household*

| Occupational Level    | PH Frequency | PH % | PH Cumulative % | SH Frequency | SH % | SH Cumulative % |
|-----------------------|--------------|------|-----------------|--------------|------|-----------------|
| No 2 <sup>nd</sup> HH |              |      |                 | 24           | 23.5 | 23.5            |
| Menial Labor          | 6            | 5.9  | 5.9             | 19           | 18.6 | 42.2            |
| Unskilled Worker      | 5            | 4.9  | 10.8            | 7            | 6.9  | 49.1            |
| Semiskilled           | 16           | 15.7 | 26.5            | 13           | 12.7 | 61.8            |
| Skilled Craftsman     | 13           | 12.7 | 39.2            | 16           | 15.7 | 80.5            |
| Sales & Clerical      | 13           | 12.7 | 52.0            | 13           | 12.7 | 94.2            |
| Semi-Professional     | 17           | 16.7 | 68.6            | 3            | 2.9  | 67.6            |
| Minor Professional    | 14           | 13.7 | 82.4            | 2            | 2.0  | 97.1            |
| Lesser Professional   | 13           | 12.7 | 95.1            | 5            | 4.9  | 100             |
| Higher Execs, etc.    | 5            | 4.9  | 100.0           | 102          | 100  |                 |

Table 14: *Number of Physical Neglect Incidents*

| Physical Neglect Incidents | Frequency | %     | Valid % | Cumulative % | Mean ( $\mu$ ) | Std. Deviation |
|----------------------------|-----------|-------|---------|--------------|----------------|----------------|
| No incidents               | 94        | 92.2  | 92.2    | 92.2         |                |                |
| 1 incidents                | 1         | 1.0   | 1.0     | 93.1         |                |                |
| 2 incidents                | 7         | 6.9   | 6.9     | 100.0        |                |                |
| Total                      | 102       | 100.0 | 100.0   |              | 1.15           | 1.1772         |

Table 15: *Number of Emotional Neglect Incidents*

| Emotional Neglect | Frequency | %     | Valid % | Cumulative % | Mean ( $\mu$ ) | Std. Deviation |
|-------------------|-----------|-------|---------|--------------|----------------|----------------|
| No incidents      | 73        | 71.6  | 71.6    | 71.6         |                |                |
| 1 incidents       | 8         | 7.8   | 7.8     | 79.4         |                |                |
| 2 incidents       | 21        | 20.6  | 20.6    | 100.0        |                |                |
| Total             | 102       | 100.0 | 100.0   |              | 1.49           | .817           |

Table 16: *Number of Supervisory Neglect Incidents*

| Supervisory Neglect | Frequency | %     | Valid % | Cumulative % | Mean ( $\mu$ ) | Std. Deviation |
|---------------------|-----------|-------|---------|--------------|----------------|----------------|
| No incidents        | 94        | 92.2  | 92.2    | 92.2         |                |                |
| 2 incidents         | 8         | 7.8   | 7.8     | 100.0        |                |                |
| Total               | 102       | 100.0 | 100.0   |              | 1.16           | .540           |

Table 17: *Number of Cognitive Neglect Incidents*

| Cognitive Neglect | Frequency | %     | Valid % | Cumulative % | Mean ( $\mu$ ) | Std.<br>Deviation |
|-------------------|-----------|-------|---------|--------------|----------------|-------------------|
| No incidents      | 73        | 71.6  | 71.6    | 71.6         |                |                   |
| 1 incidents       | 10        | 9.8   | 9.8     | 81.4         |                |                   |
| 2 incidents       | 19        | 18.6  | 18.6    | 100.0        |                |                   |
| Total             | 102       | 100.0 | 100.0   |              | 1.47           | .792              |

**APPENDIX R: PRE & POST-HOC REGRESSION WEIGHTS FOR EACH VARIABLE  
MEASUREMENT MODEL**

Table 18: *Regression Weights of Final Severity of Combat-Related PTSD Model*

| Indicator |      |    | Estimate | S.E. | C.R.   | P   | Label | Std.<br>Estimate |
|-----------|------|----|----------|------|--------|-----|-------|------------------|
| AVD       | <--- | F1 | .947     | .067 | 14.134 | *** | par_1 | .866             |
| HYP       | <--- | F1 | 1.036    | .065 | 16.011 | *** | par_2 | .909             |
| INT       | <--- | F1 | 1.000    |      |        |     |       | .960             |

Note: \*\*\*. Correlation is significant at the  $p < 0.001$  level (2-tailed).

Table 19: *Regression Weights of Original Childhood Trauma Model*

| Indicator |      |    | Estimate | S.E. | C.R.  | P    | Std.<br>Estimate |
|-----------|------|----|----------|------|-------|------|------------------|
| SEXTRM    | <--- | F2 | .022     | .028 | .783  | .434 | .086             |
| EMOTTRM   | <--- | F2 | .972     | .148 | 6.563 | ***  | .730             |
| PHYTRM    | <--- | F2 | .822     | .122 | 6.725 | ***  | .834             |
| GENTRM    | <--- | F2 | 1.000    |      |       |      | .755             |

Note: \*\*\*. Correlation is significant at the  $p < 0.001$  level (2-tailed).

Table 20: *Regression Weights of Revised Childhood Trauma Model*

| Indicator |      |    | Estimate | S.E. | C.R.  | P   | Std.<br>Estimate |
|-----------|------|----|----------|------|-------|-----|------------------|
| EMOTTRM   | <--- | F2 | .974     | .148 | 6.567 | *** | .732             |
| PHYTRM    | <--- | F2 | .820     | .122 | 6.718 | *** | .832             |
| GENTRM    | <--- | F2 | 1.000    |      |       |     | .755             |

Note: \*\*\*. Correlation is significant at the  $p < 0.001$  level (2-tailed).

Table 21: *Regression Weights of Original Childhood SES Level Model*

| Variable |      |    | Estimate | S.E.  | C.R.  | P    | Std.<br>Estimate |
|----------|------|----|----------|-------|-------|------|------------------|
| OC2      | <--- | F3 | 3.779    | 1.050 | 3.598 | ***  | .905             |
| ED2      | <--- | F3 | 5.693    | 1.605 | 3.548 | ***  | .921             |
| OC       | <--- | F3 | 1.000    |       |       |      | .368             |
| ED       | <--- | F3 | .047     | .321  | .147  | .883 | .015             |

Note: \*\*\*. Correlation is significant at the  $p < 0.001$  level (2-tailed).



Table 22: *Regression Weights of Revised Childhood SES Level Model*

| Variable |      |    | Estimate | S.E.  | C.R.  | P   |
|----------|------|----|----------|-------|-------|-----|
| OC2      | <--- | F3 | 3.768    | 1.045 | 3.605 | *** |
| ED2      | <--- | F3 | 5.722    | 1.620 | 3.532 | *** |
| OC       | <--- | F3 | 1.000    |       |       | *** |

*Note:* \*\*\*. Correlation is significant at the  $p < 0.001$  level (2-tailed).

Table 23: *Regression Weights of Original Childhood Neglect Model*

| Variable |      |    | Estimate | S.E.   | C.R.   | P    | Std.<br>Estimate |
|----------|------|----|----------|--------|--------|------|------------------|
| PHYSNEG  | <--- | F4 | 1.000    |        |        |      | .922             |
| EMOTNEG  | <--- | F4 | .949     | .150   | 6.326  | ***  | .551             |
| SUPVNEG  | <--- | F4 | 1.125    | 15.730 | 15.730 | ***  | .989             |
| COGNEG   | <--- | F4 | .960     | .143   | 6.704  | .883 | .575             |

*Note:* \*\*\*. Correlation is significant at the  $p < 0.001$  level (2-tailed).

Table 24: *Regression Weights of Revised Childhood Neglect Model*

| Variable |      |    | Estimate | S.E. | C.R.  | P   | Std.<br>Estimate |
|----------|------|----|----------|------|-------|-----|------------------|
| PHYSNEG  | <--- | F4 | 1.000    |      |       |     | .616             |
| EMOTNEG  | <--- | F4 | 2.028    | .367 | 5.530 | *** | .788             |
| COGNEG   | <--- | F4 | 2.057    | .377 | 5.457 | *** | .824             |

*Note:* \*\*\*. Correlation is significant at the  $p < 0.001$  level (2-tailed).

**APPENDIX S: POST-HOC GOF STATISTICS FOR EACH VARIABLE  
MEASUREMENT MODEL**

Table 25: *GOF Statistics of Childhood Trauma Model*

| Model | Chi-square | DF | GFI   | TLI   | RMSEA | PCLOSE |
|-------|------------|----|-------|-------|-------|--------|
| Pre   | .301       | 2  | .999  | 1.051 | .000  | .889   |
| Post  | .000       | 0  | 1.000 |       |       |        |

Table 26: *GOF Statistics of Childhood SES Model*

| Model | Chi-square | DF | GFI   | TLI  | RMSEA | PCLOSE |
|-------|------------|----|-------|------|-------|--------|
| Pre   | 4.180      | 2  | .908  | .901 | .104  | .189   |
| Post  | .000       | 0  | 1.000 |      |       |        |

Table 27: *GOF Statistics of Childhood Neglect Model*

| Model | Chi-square | DF | GFI   | TLI  | RMSEA | PCLOSE |
|-------|------------|----|-------|------|-------|--------|
| Pre   | 28.076     | 2  | .890  | .717 | .359  | .000   |
| Post  | .000       | 0  | 1.000 |      |       |        |

Table 28: *GOF Statistics of Combat-Related PTSD*

| Model | Chi-square | DF | GFI   | TLI | RMSEA | PCLOSE |
|-------|------------|----|-------|-----|-------|--------|
| Pre   | .000       | 2  | 1.000 |     |       |        |
| Post  | None       |    |       |     |       |        |

**APPENDIX T: FIRST ORDER, THREE FACTOR MEASUREMENT MODEL  
RESULTS**

Table 29: *GOF Statistics of Original First Order, Three-Factor Measurement Model*

| Model   | Chi-square | DF | GFI  | TLI  | RMSEA | PCLOSE |
|---------|------------|----|------|------|-------|--------|
| Default | 33.362     | 24 | .931 | .963 | .062  | .321   |

Table 30: *GOF Statistics of Adjusted First Order, Three-Factor Model*

| Model   | Chi-square | DF | GFI  | TLI   | RMSEA | PCLOSE |
|---------|------------|----|------|-------|-------|--------|
| Default | 20.786     | 22 | .958 | 1.005 | .000  | .791   |

Table 31: *Regression Weights of Original First Order, Three-Factor Model*

|         |      |    | Estimate | S.E.  | C.R.  | P    | Std.<br>Estimates |
|---------|------|----|----------|-------|-------|------|-------------------|
| EMOTTRM | <--- | F2 | 1.183    | .169  | 6.991 | ***  | .821              |
| PHYTRM  | <--- | F2 | .831     | .123  | 6.762 | ***  | .779              |
| GENTRM  | <--- | F2 | 1.000    |       |       |      | .698              |
| OC2     | <--- | F3 | 3.743    | 1.050 | 3.563 | ***  | .842              |
| ED2     | <--- | F3 | 6.515    | 2.003 | 3.252 | .001 | .990              |
| EMOTNEG | <--- | F4 | 2.328    | .407  | 5.714 | ***  | .851              |
| COGNEG  | <--- | F4 | 2.063    | .372  | 5.546 | ***  | .778              |
| OC      | <--- | F3 | 1.000    |       |       |      | .345              |
| PHYSNEG | <--- | F4 | 1.000    |       |       |      | .580              |

Note: \*\*\* =  $p < .001$ ; S.E. = standard error;

C.R. = critical ratio. Estimates indicate that when the independent (F1, 2, 3) variable goes up by 1, the indicator goes up by the estimate amount.

Table 32: *Regression Weights of Adjusted First Order, Three-Factor Model*

|         |      |    | Estimate | S.E.  | C.R.  | P   | Std.<br>Estimates |
|---------|------|----|----------|-------|-------|-----|-------------------|
| EMOTTRM | <--- | F2 | 1.183    | .154  | 7.117 | *** | .792              |
| PHYTRM  | <--- | F2 | .817     | .116  | 7.018 | *** | .787              |
| GENTRM  | <--- | F2 | 1.000    |       |       |     | .720              |
| OC2     | <--- | F3 | 3.833    | 1.074 | 3.570 | *** | .892              |
| ED2     | <--- | F3 | 5.965    | 1.737 | 3.434 | *** | .936              |
| EMOTNEG | <--- | F4 | 2.304    | .404  | 5.708 | *** | .840              |
| COGNEG  | <--- | F4 | 2.073    | .373  | 5.564 | *** | .780              |
| OC      | <--- | F3 | 1.000    |       |       |     | .357              |
| PHYSNEG | <--- | F4 | 1.000    |       |       |     | .582              |

Note: \*\*\* =  $p < .001$ ; S.E. = standard error;

C.R. = critical ratio. Estimates indicate that when the independent (F1, 2, 3) variable goes up by 1, the indicator goes up by the estimate amount.

## LIST OF REFERENCES

- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.) Washington, DC: Author.
- American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev.) Washington, DC: Author.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.) Washington, DC: Author.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.) Washington, DC: Author.
- American Psychological Association. (2012a, January 31). *Socioeconomic Status*. Retrieved from American Psychological Association Web site: <http://www.apa.org/topics/socioeconomic-status/index.aspx>
- American Psychological Association. (2012b). *Children and trauma: Update for mental professionals*. Retrieved from American Psychological Association: Public Interest Directorate: Children, Youth, and Families Web site: <http://www.apa.org/pi/families/resources/children-trauma-update.aspx>
- Amir, M., Kaplan, Z., & Kotler, M. (1996). Type of trauma, severity of posttraumatic stress disorder and symptoms, and associated features. *Journal of General Psychology*, 123(4), 341-351.
- Aneshensel, C. (1992). Social stress: Theory and research. *Annual Review of Sociology*, 18, 15-38.

- Atkinson, R., Henderson, R., Sparr, L., & Deale, S. (1982). Assessment of Vietnam veterans for posttraumatic stress disorder in Veterans Administration disability claims. *American Journal of Psychiatry*, 39, 1118-1121.
- Bannister, J., Mahoney, J., & Dao, T. (2012). Combat related posttraumatic stress disorder - History, prevalence, etiology, treatment, and comorbidity. In E. Ovuga (Ed.), *Post traumatic stress disorders in a global context* (pp. 25-50). Rijeka, Croatia: InTech.
- Barker, R. (2004). Trauma. In *Social Work Dictionary* (5th ed., p. 441). Washington, DC: National Association of Social Workers.
- Becker-Blease, K., & Freyd, J. (2005). Beyond PTSD. An evolving relationship between trauma theory and family violence research. *Journal of Interpersonal Violence*, 20(4), 403-411.
- Ben-Ya'acov, Y., Amir, M., Arzy, R., & Kotler, M. (2005). Trauma in military and civilian settings. *Clinical Psychology and Psychotherapy*, 12, 1-9.
- Berger, K. (2003). *The developing person through childhood* (3rd ed.). New York: Worth Publishers.
- Berntsen, D., Johannessen, Y., Thomsen, D., Bertelsen, M., Hoyle, R., & Rubin, D. (2012). Peace and War: Trajectories of posttraumatic stress disorder symptoms before, during, and after military deployment in Afghanistan. *Psychological Science*, 23(12), 1557-1565.



- Bilmes, L. (2011, June 13). *Current and projected future costs of caring for veterans of the Iraq and Afghanistan wars* [White Paper]. Retrieved from Watson Institute for International Studies Web site: <http://costsofwar.org/sites/default/files/articles/52/attachments/Bilmes%20Veterans%20Costs.pdf>
- Blaise, K., Saathoff-Wells, T., Pereira, A., Wadsworth, S., & Dombro, A. (2012). *Serving military families in the 21st century*. New York: Routledge, Taylor & Francis Group, LLC.
- Boscarino, J. (2007). The mortality impact of combat stress 30 years after exposure: Implications for prevention, treatment, and research. In C. Figley & W. Nash (Eds.), *Combat stress injury: Theory, research, and management* (pp. 97-117). New York: Routledge.
- Breen, G., Matusitz, J., & Wan, T. (2009). Applying student-centered learning concepts to a doctoral, introductory, interdisciplinary public affairs course. *Journal of Public Affairs Education, 15*(1), 107-116.
- Bremner, J. (2002). *Does stress damage the brain?: Understanding trauma-related disorders from a mind body perspective*. New York: W.W. Norton & Company, Inc.
- Bremner, J., Bolus, R., & Mayer, E. (2007). Psychometric properties of the early trauma inventory - self report. *The Journal of Nervous and Mental Disease, 195*(3), 211-217.
- Bremner, J., Southwick, S., & Charney, D. (1995). Etiological factors in the development of posttraumatic stress disorder. In C. Mazure (Ed.), *Does stress cause psychiatric illness?* (pp. 149-185). Washington, DC: American Psychiatric Press.

- Bremner, J., Southwick, S., Brett, E., Fontana, A., Rosenheck, R., & Charney, D. (1992). Dissociation and posttraumatic stress disorder in Vietnam combat veterans. *American Journal of Psychiatry*, 149(3), 328-332.
- Bremner, J., Southwick, S., Johnson, D., Yehuda, R., & Charney, D. (1993). Childhood physical abuse and combat related posttraumatic stress disorder in Vietnam veterans. *American Journal of Psychiatry*, 150(2), 235-239.
- Bremner, J., Vermetten, E., & Mazure, C. (2000). Development and preliminary psychometric properties of an instrument for the measurement of childhood trauma: The early trauma inventory. *Depression and Anxiety*, 12, 1-12.
- 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, 902-907.
- Breuer, J., & Freud, S. (1957). *Studies on hysteria* (J. Strachey, Trans.) (J. Strachey, Ed.). New York: Basic Books, Inc. (Original work published 1893-1895)
- Brewin, C., Andrews, B., & Valentine, J. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting Psychology*, 68(5), 748-766.
- Britten, Corday, S., & Polk, R. (1992). Pre-military antecedents of pre-military post-traumatic stress disorder in an Oregon cohort. *Journal of Clinical Psychology*, 48(3), 271-280.
- Bryer, J., Nelson, B., Miller, J., & Krol, P. (1987). Childhood sexual and physical abuse as factors in adult psychiatric illness. *American Journal of Psychiatry*, 144, 1426-1430.

- Byrne, B. (2010). Structural equation modeling with AMOS: Basic concepts, applications, and programming (2nd ed.). New York: Routledge.
- Cabrera, O., Hoge, C., Bliese, P., Castro, C., & Messer, S. (2007). Childhood adversity and combat as predictors of depression and post-traumatic stress in deployed troops. *American Journal of Preventive Medicine*, 33(2), 77-82.
- Castillo, D., C'De Baca, J., Conforti, K., Qualls, C., & Fallon, S. (2002). Anger in PTSD: General psychiatric and gender difference on the BDHI. *Journal of Loss and Trauma: International Perspectives on Stress & Coping*, 7(2), 119-128.
- Child Welfare Information Gateway. (2008). *What is child abuse and neglect?* (Fact Sheet April 2008). Washington, DC: U.S. Department of Health and Human Services.
- Cicchetti, D., Rogosch, F., & Sturge-Apple, M. (2007). Interactions of child maltreatment and serotonin transporter and monoamine oxidase A polymorphisms: Depressive symptomology among adolescents from low socioeconomic status backgrounds. *Development and Psychopathology*, 19, 1161-1180. doi:10.1017/S0954579407000600
- Cirino, P., Chin, C., Sevcik, R., Wolf, M., Lovett, M., & Morris, R. (2002). Measuring socioeconomic status: Reliability and preliminary validity for different approaches. *Assessment*, 9(2), 145-155.
- Clancy, C., Graybeal, A., Thompson, W., Badgett, K., Feldman, M., Calhoun, P., Erkanli, A., ... Beckham, J. (2006). Lifetime trauma exposure in veterans with military-related posttraumatic stress disorder: Association with current symptomology. *Journal of Clinical Psychiatry*, 67(9), 1346-1353.

- Cloitre, M., Stolbach, B., Herman, J., van der Kolk, B., Pynoos, R., Wang, J., & Petkova, E. (2009). A developmental approach to complex PTSD: Childhood and adult cumulative trauma as predictors of symptom complexity. *Journal of Traumatic Stress, 22*(5), 399-408.
- Cockram, D., Drummon, P., & Lee, C. (2010). Role and treatment of early maladaptive schemas in Vietnam veterans with PTSD. *Clinical Psychology and Psychotherapy, 17*, 165-182. doi:10.1002/cpp.690
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.
- Cordray, S., Polk, K., & Britton, B. (1992). Pre-military antecedents of post-traumatic stress disorder in an Oregon cohort. *Journal of Clinical Psychology, 48*(3), 271-280.
- Creamer, M., Bell, R., & Failla, S. (2003). Psychometric properties of the impact of event scale - revised. *Behavior Research and Therapy, 41*(12), 1489-1496.
- Creamer, M., Wade, D., Fletcher, S., & Forbes, D. (2012). PTSD among military personnel. *International Review of Psychiatry, 23*, 16-165. American Psychiatric Association.
- (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.) Washington, DC: Author.
- Davidson, J., Hughes, D., Blazer, D., & George, L. (1991). Post-traumatic stress disorder in the community: an epidemiological study. *Psychological Medicine, 21*, 713-721.
- DeBellis, M. (2005). The psychobiology of neglect. *Child Maltreatment, 10*(2), 150-172. doi:10.1177/1077559505275116

- DeBellis, M., & Putnam, F. (1994): The psychobiology of childhood maltreatment. *Child and Adolescent Psychiatric Clinics of North America*, 3, 663– 677.
- DeVellis, D. (2003). *Scale development: Theory and applications* (2nd ed.). Thousand Oaks, CA: Sage.
- Deykin, E., & Buka, S. (1997). Prevalence and risk factors for posttraumatic stress disorder among chemically dependent adolescents. *American Journal of Psychiatry*, 154, 752-757.
- Dohrenwend, B. (2000). The role of adversity and stress in psychopathology: Some evidence and its implications for theory and research. *Journal of Health and Social Behavior*, 41(1), 1-19.
- Elwood, L., Hahn, K., Olatunji, B., & Williams, N. (2009). Cognitive vulnerabilities to the development of PTSD: A review of four vulnerabilities and the proposal of an integrative vulnerability model. *Clinical Psychology Review*, 29, 87-100.
- Erikson, E. (1968). *Identity Youth and Crisis*. New York: W.W. Norton & Company, Inc.
- Erikson, E. (1980a). Elements of a psychoanalytic theory of psychosocial development. In S. Greenspan & G. Pollock (Eds.), *The course of life: Psychoanalytic contributions towards understanding personality development* (pp. 11-61). Adelphi, MD: National Institute for Mental Health.
- Erikson, E. (1980b). *Identity and the life cycle*. New York: Norton.
- Erikson, E., Erikson, J., & Kivnick, H. (1986). *Vital involvement in old age*. New York: Norton.

- Ferenczi, S. (1920/1955a). Notes and fragments. In M. Balint (Ed.), *Final contributions to the problems and methods of psycho-analysis* (pp. 216-279). London: Karnac Books.
- (Original work published 1920)
- Ferenczi, S. (1929/1955b). The unwelcome child and his death instinct. In M. Balint (Ed.), *Final contributions to the problems and methods of psych-analysis* (pp. 102-107). London: Karnac Books. (Original work published 1929)
- Ferenczi, S. (1932/1955c). Confusion of tongues between adults and the child. In M. Balint (Ed.), *Final contributions to the problems and methods of psycho-analysis* (pp. 108-125). London: Karnac Books. (Original work published 1932)
- Ferenczi, S. (1932/1988). *The clinical diary* (J. Dupont, Ed.). Cambridge, MA: Harvard University Press. (Original work published 1932)
- Figley, C. (1978). Psychological adjustment among Vietnam veterans: An overview of the research. In C. Figley (Ed.), *Stress disorders among Vietnam veterans: Theory, research and treatment* (pp. 57-70). New York: Brunner/Mazel.
- Figley, C., & Nash, W. (Eds.). (2007). *Combat stress injury: Theory, research, and management*. New York: Routledge, Taylor & Francis Group.
- Floyd, M., Rice, J., & Black, S. (2002). Recurrence of posttraumatic stress disorder in late life: A cognitive aging perspective. *Journal of Clinical Geropsychology*, 8(4), 303-311.
- Flynn, M., & Hassan, A. (2010). Unique challenges of war in Iraq and Afghanistan. *Journal of Social Work Education*, 46(2), 169-173.

- Foa, E., & Riggs, D. (1993). Posttraumatic stress disorder and rape. *American Psychiatric Press Review of Psychiatry*, 12, 273-303.
- Fontana, A., & Rosenheck, R. (1994). Traumatic war stressors and psychiatric symptoms among World War II, Korean, and Vietnam War veterans. *Psychology and Aging*, 9(1), 27-33.
- Foy, D., Madvig, b., Pynoos, R., & Camilleri, A. (1996). Etiologic factors in the development of posttraumatic stress disorder in childhood and adolescents. *Journal of School Psychology*, 34(2), 133-145.
- Foy, D., Sippelle, R., Rueger, D., & Carroll, E. (1984). Etiology of posttraumatic stress disorder in Vietnam veterans: Analysis of pre-military, military, and combat exposure influences. *Journal of Consulting and Clinical Psychology*, 52(1), 79-87.
- Fritch, A., Mishking, M., Reger, M., & Gahm, G. (2010). The impact of childhood abuse and combat related trauma on postdeployment adjustment. *Journal of Traumatic Stress*, 23(2), 248-254.
- Gahm, G., Lucenko, B., Retzlaff, P., & Fukuda, 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.
- Garte, S. (1985). Still in Vietnam: Arrested career maturity of Vietnam veterans with post-traumatic stress disorder. *Psychotherapy in Private Practice*, 3, 49-53.
- Gates, M., Holowka, D., Vasterling, J., Keane, T., Marx, B., & Rosen, R. (2012). Posttraumatic stress disorder in veterans and military personnel: Epidemiology, screening, and case recognition. *Psychological Services*, 9(4), 361-382.

- Giardino, A., Hanson, N., Hill, K., & Leaventhal, J. (2011). Child abuse pediatrics: New specialty, renewed mission. *Pediatrics. Official Journal of the American Academy of Pediatrics*, 128, 156-159.
- Gilbert, R., Widom, C., Browne, K., Fergusson, D., Webb, E., & Janson, S. (2009). Child maltreatment 1: Burden and consequences of child maltreatment in high-income. *Lancet*, 373(9657), 68-81. doi:10.1016/S0140-6736(08)61706-7
- Gillespie, C., Phifer, J., Bradley, B., & Ressler, K. (2009). Risk and resilience: Genetic and environmental influences on develop of the stress response. *Depression and Anxiety: the Official Journal of ADAA*, 26(11), 984-992. doi:10.1002/da.20605
- Gliner, J., Morgan, G., & Leech, N. (2009). *Research methods in applied settings: An integrated approach to design and analysis* (2nd ed.). New York: Routledge.
- Glover, D., Loeb, T., Carmona, J., Sciolla, A., Zhang, M., Myers, J., & Wyatt, G. (2013). Childhood sexual abuse severity and disclosure predict posttraumatic stress symptoms and biomarkers in ethnic minority women. *Journal of Trauma & Dissociation*, 11(2), 152-173.
- Gurvits, T., Shenton, M., Hokama, H., Ohta, H., Lasko, N., Gilbertson, M., Orr, S., ... Pitman, K. (1996). Magnetic resonance imaging study of hippocampal volume in chronic, combat related posttraumatic stress disorder. *Biological Psychiatry*, 41(11), 1091-1099.
- Harvey, B. (2011). Translational theory-driven hypotheses and testing are enhancing our understanding of PTSD and its treatment. In D. Stein, M. Friendman, & C. Blanco (Eds.), *Post-traumatic stress disorder* (pp. 139-141). West Sussex, UK: Wiley-Blackwell.



- Heim, C., Shugart, M., Craighead, W., & Meroff, C. (2010). Neurobiological and psychiatric consequences of child abuse and neglect. *Developmental Psychobiology*, 52, 671-690.
- Hoge, C., Castro, C., Messer, S., McGurk, D., Cotting, D., & Koffman, R. (2004). Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *New England Journal of Medicine*, 351(1), 13-22.
- Hollingshead, A. (1975). *Four Factor Index of Social Status*. Unpublished manuscript, Yale University, New Haven, CT.
- Hollingshead, A., & Redlich, F. (1958). *Social class and mental illness*. New York: John Wiley & sons, Inc.
- Horesh, D., Solomon, Z., Zerach, G., & Ein-Dor, T. (2011). Delayed-onset PTSD among war veterans: The role of life events throughout the life cycle. *Social Psychiatry Psychiatric Epidemiology*, 46, 863-870.
- Horowitz, M. (1976). *Stress response syndromes*. New York: Jason Aronson.
- Horowitz, M., Wilner, N., & Alvarez, W. (1979). Impact of event scale: A measure of subjective stress. *Psychosomatic Medicine*, 41(3), 209-218.
- Howell, A., & Wool, Z. (2011, June 13). *The war comes home: The toll of war and the shift burden of care* [White paper]. Retrieved from Watson Institute for International Studies: [http://costsofwar.org/sites/default/files/articles/12/attachments/Howell\\_and\\_Wool\\_The\\_War\\_Comes\\_Home,\\_Veterans.pdf](http://costsofwar.org/sites/default/files/articles/12/attachments/Howell_and_Wool_The_War_Comes_Home,_Veterans.pdf)

- Hudson, C. (2005). Socioeconomic status and mental illness: Tests of the social causation and selection hypotheses. *American Journal of Orthopsychiatry*, 75(1), 3-18. American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3th ed.). Washington, DC: Author.
- Hunt, N. (2010). *Memory, war and trauma*. Cambridge, UK: Cambridge University Press.
- IBM. (2013). *SPSS software*. Retrieved from <http://www-01.ibm.com/software/analytics/spss/>
- Ingram, R., & Luxton, D. (2005). Vulnerability-stress models. In B. Hankin & R. Abela (Eds.), *Development of psychopathology: A vulnerability stress perspective* (pp. 32-46). Thousand Oaks, CA: Sage Publications, Inc.
- Institute of Medicine [IOM], & National Research Council [NRC]. (2007). *PTSD compensation and military service*. Washington, DC: The National Academies Press.
- Janet, P. (1924). *Principles of psychology* (J. Guthrie & R. Guthrie, Trans.). New York: MacMillan Company. (Original work published 1920)
- Johnson, J., Cohen, P., Dohrenwend, B., Link, B., & Brook, J. (1999). A longitudinal investigation of social causation and social selection processes involved in the association between socioeconomic status and psychiatric disorders. *Journal of Abnormal Psychology*, 108(3), 490-499.
- Jones, E., Fear, N., & Wessely, S. (2007). Shell shock and mild traumatic brain injury: A historical review. *American Journal of Psychiatry*, 164(11), 1641-1645.

- Jones, E., Hyams, K., & Wessely, S. (2003). Screening for vulnerability to psychological disorders in the military: An historical survey. *Journal of Medical Screening*, 10(1), 40-46.
- Kar, N., Mohapatra, P., Nayak, K., Pattanaik, P., Swaim, S., & Kar, H. (2007). Post-traumatic stress disorder in children and adolescents one year after a super-cyclone in Orissa, India: Exploring cross-cultural validity and vulnerability factors. *BMC Psychiatry*, 7(8). doi:10.1186/1471-244X-7-8
- Kazemian, L., Widom, C., & Farrington, D. (2011). A prospective examination of the relationship between childhood neglect and juvenile delinquency in the Cambridge study in delinquent development. *International Journal of Child, Youth and Family Studies*, 1 & 2, 65-82.
- Keane, T., Fairbank, J., Caddell, J., Zimering, R., Taylor, K., & Mora, C. (1989). Clinical evaluations of a measure to assess combat exposure. *Psychological Assessment: a Journal of Consulting and Clinical Psychology*, 1(1), 53-55.
- King, D., King, L., Foy, D., & Gudanowski, D. (1996). Pre-military factors in combat related posttraumatic stress disorder: Structural equation modeling with a national sample of female and male Vietnam veterans. *Journal of Consulting and Clinical Psychology*, 64(3), 520-531.
- King, D., King, L., Foy, D., Keane, T., & Fairbank, J. (1999). Posttraumatic stress disorder in a national sample of female and male Vietnam veterans: Risk factors, war-zone stressors, and resilience-recovery variables. *Journal of Abnormal Psychology*, 108(1), 164-170.

- Koenen, K., Moffitt, T., Poulton, M., & Caspi, A. (2007). Early childhood factors associated with the development of post-traumatic stress disorder: Results from a longitudinal birth cohort. *Psychological Medicine*, 37(2), 181-192.
- Kulka, R., Schlenger, W., Fairbank, J., Hough, R., Jordan, B., Marmar, C., & Weiss, D. (1990). *Trauma and the Vietnam war generation: Report of findings from the national Vietnam veterans readjustment study*. New York: Bruner/Mazel.
- Lamprecht, F., & Sack, M. (2002). Posttraumatic stress disorder revisited. *Psychosomatic Medicine*, 64(2), 222-237.
- Lang, A., Aarons, G., Gearity, J., Laffaye, C., Satz, L., Dresselhaus, T., & Stein, M. (2008). Direct and indirect links between childhood maltreatment, posttraumatic stress disorder, and women's health. *Behavioral Medicine*, 33(4), 125-136.
- Lapp, K., Bosworth, H., Strauss, J., Stechuchak, K., Horner, R., Calhoun, P., ... Butterfield, M. (2005). Lifetime sexual and physical victimization among male veterans with combat related post-traumatic stress disorder. *Military Medicine*, 170(9), 787-790.
- LeardMann, C., Smith, B., & Ryan, M. (2010). Do adverse childhood experiences increase the risk of postdeployment posttraumatic stress disorder in US marines? *BMC Public Health*, 10(437), 1-8, p. 1. doi: 10.1186/1471-2458-10-437
- Luo, Y., & Waite, L. (2005). The impact of childhood and adult SES on Physical, mental, and cognitive well-being in later life. *Journal of Gerontology: Behavioral Psychology Sciences & Social Sciences*, 60(2), S93-S101.

- Maxwell, J. (2005). *Qualitative research design: An interactive approach* (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.
- McCutcheon, V., Sartor, c., Pommer, N., Bucholz, K., Nelson, E., Madden, P., & Heath, A. (2010). Age at trauma exposure and PTSD risk in young adult women. *Journal of Traumatic Stress, 23*(6), 811-814.
- McEwen, B., & Gianaros, P. (2010). Central role of the brain in stress and adaption. Links to socioeconomic status, health, and disease. *Annals of the New York Academy of Sciences, 1186*, 190-222.
- McKeever, V., & Huff, M. (2003). A diathesis-stress model of posttraumatic stress disorder: Ecological, biological, and residual stress pathways. *Review of General Psychology, 7*(3), 237-250.
- McNally, R. (2003). Progress and controversy in the study of posttraumatic stress disorder. *Annual Review of Psychology, 54*, 229-252.
- Murali, V., & Oyebode, F. (2004). Poverty, social inequality and mental health. *Advances in Psychiatric Treatment: Journal of Continuing Professional Development, 10*, 216-224.
- Naifeh, J., North, T., Davis, J., Reyes, G., Logan, C., & Elhai, J. (2013). Clinical profile differences between PTSD-diagnosed military veterans and crime victims. *Journal of Trauma & Dissociation, 9*(3), 321-334.
- Nash, W. (2007a). The stressors of war. In C. Figley & W. Nash (Eds.), *Combat stress injury: Theory, research, and management* (pp. 11-31). New York: Routledge.

- Nash, W. (2007b). Combat/Operational stress adaptations and injuries. In C. Figley & W. Nash (Eds.), *Combat stress injury: Theory, Research, and Management* (pp. 33-64). New York: Routledge.
- Nash, W., & Baker, D. (2007). Competing and complementary models of combat stress injury. In C. Figley & W. Nash (Eds.), *Combat stress injury: Theory, research, and management* (pp. 65-94). New York: Routledge.
- National Center for PTSD. (2012, January 2). *Combat Exposure Scale*. Retrieved from U.S. Department of Veterans Affairs Web site: <http://www.ptsd.va.gov/PTSD/professional/pages/assessments/ces.asp>
- National Center for PTSD. (2011, December 20). *The epidemiology of PTSD*. Retrieved from U.S. Department of Veterans Affairs Web site: <http://www.ptsd.va.gov/professional/pages/epidemiological-facts-ptsd.asp>
- National Center for PTSD. (2013, February 6). *Public section: Information on trauma and PTSD: Veterans, general public & family*. Retrieved from U.S. Department of Veterans Affairs Web site: <http://www.ptsd.va.gov/public/pages/what-if-think-have-ptsd.asp>
- National Child Trauma Stress Network. (2012, March 22). *Trauma types*. Retrieved from National Child Trauma Stress Network (NCTSN) Web site: <http://nctsn.org/trauma-types/>
- National Research Council. (2006). *Assessing fitness for military enlistment: Physical, medical, and mental health standards* (1st ed.). Washington, DC: National Academic Press.

- Nikulina, V., Widom, C., & Czaja, S. (2011). The role of childhood neglect and childhood poverty in predicting mental health, academic achievement and crime in adulthood. *American Journal of Community Psychology*, 48, 309-321.
- NIMH. (2012, March 7). *NIMH Statistics*. Retrieved from National Institute of Mental Health Web site: <http://www.nimh.nih.gov/statistics/index.shtml>
- Nisbett, R., & Wilson, T. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, 84, 231-259.
- Ochse, R., & Plug, C. (1986). Cross-cultural investigation of the validity of Erikson's theory of personality. *Journal of Personality and Social Psychology*, 50, 1240-1252.
- Office of Planning, Research., & Evaluation. (2010, January). Fourth national incidence study of child abuse and neglect (NIS-4): Report to Congress. In A. Sedlak, J. Mettenburg, M. Basena, I. Petta, K. McPherson, A. Greene, & Li, S. (Eds.), *Executive Summary* (NIS-4). Retrieved from U.S. Department of Health & Human Services Web site: [http://www.acf.hhs.gov/programs/opre/abuse\\_neglect/natl\\_incid/reports/natl\\_incid/natl\\_incid\\_title.html](http://www.acf.hhs.gov/programs/opre/abuse_neglect/natl_incid/reports/natl_incid/natl_incid_title.html)
- Olusanya, O. (2012). Toward an integrated theoretical model of risk factors for post-deployment PTSD and its implications for justice-involved veterans. *Journal of Human Behavior in the Social Environment*, 22(6), 690-706.
- Owens, G., Dashevsky, B., Chard, K., Mohamed, S., Haji, U., Heppner, P., & Baker, D. (2009). The relationship between childhood trauma, combat exposure, and posttraumatic stress disorder in male veterans. *Military Psychology*, 21, 114-125.

- Pittman, R., Gilbertson, M., Gurvits, T., May, F., Lasko, N., Metzger, L., Shenton, M., ... Orr, S. (2006). Clarifying the origin of biological abnormalities in PTSD through the study of identical twins discordant for combat exposure. *Annals of the New York Academy of Sciences*, 1071, 242-254. doi:10.1196/annals.1364.019
- Pois, H., & Oak, S. (2007). WAR & military health. *American Journal of Public Health*, 97(12), 2132-2142. doi:10.2105/AJPH2006.090910
- Prasad, A. (2012). Post traumatic stress disorder - An overview. In E. Ovuga (Ed.), *Post traumatic stress disorders in a global context* (pp. 3-24). Rijeka, Croatia: InTech.
- Pratchett, L., & Yehuda, R. (2011). Foundations of posttraumatic stress disorder: Does early life trauma lead to adult posttraumatic stress disorder? *Development and Psychopathology*, 23, 477-491.
- Pecora, P. (2009). Managing human resources: Administrative issues. In R. Patti (Ed.), *The Handbook of Human Service Management* (2nd ed., pp. 255-281). Thousand Oaks, CA: Sage Publications, Inc.
- Radstone, S. (2007). Trauma theory: Contexts, politics, ethics. *Paragraph. A Journal of Modern Critical Theory*, 30(1), 9-20.
- Ramchand, R., Schell, T., Karney, B., Osilla, K., Burns, R., & Caldarone, L. (2010). Disparate prevalence estimates of PTSD among service members who served in Iraq and Afghanistan; Possible explanations. *Journal of Traumatic Stress*, 23(1), 59-68.
- Ray, S. (2008). Evolution of posttraumatic stress disorder and future directions. *Archives of Psychiatric Nursing*, 22(4), 217-225.



- Rechtman, R. (2004). The rebirth of PTSD: The rise of a new paradigm in psychiatry. *Social Psychiatry and Psychiatric Epidemiology*, 39, 913-915.
- Regehr, C., LeBlanc, V., Jelley, R., Barath, I., & Daciuk, J. (2007). Previous trauma exposure and PTSD symptoms as predictors of subjective and biological response to stress. *Canadian Journal of Psychiatry*, 52, 675-683.
- Ritsher, J., Warner, V., Johnson, J., & Dohrenwend, B. (2001). Inter-generational longitudinal study of social class and depression: A test of social causation and social selection models. *British Journal of Psychiatry*, 178, s84-s90.
- Rosen, G., Frueh, B., Elhai, J., Grubaugh, A., & Ford, J. (2010). *Clinician's guide to posttraumatic stress disorder* (G. Rosen & B. Frueh, Eds.). Hoboken, NJ: John Wiley & Sons, Inc.
- Rosenthal, D., Gurney, R., & Moore, S. (1981). From trust to intimacy: A new inventory for examining Erikson's stages of psychosocial development. *Journal of Youth and Adolescence*, 10, 525-537.
- Rubin, A., & Babbie, E. (2011). *Research methods for social work* (7th ed.). Belmont, CA: Brooks/Cole.
- Salamon, L. (Ed.). (2002). *The tools of government: A guide to the new governance*. New York: Oxford University Press.
- Schober, D., Fawcett, S., Thigpen, S., Curtis, A., & Wright, R. (2012). An empirical case study of a child sexual abuse prevention initiative in Georgia. *Health Education Journal*, 1, 1-8.  
doi:10.1177/0017896911430546

- Schoedl, A., Costa, M., Mari, J., Mello, M., Tyrka, A., Carpenter, L., & Price, L. (2013). The clinical correlates of reported childhood sexual abuse: An association between age at trauma onset and severity of depression and PTSD in adults. *Journal of Child Sexual Abuse, 19*(2), 156-170.
- Schottenbauer, C., Glass, C., Arnkoff, D., & Gray, S. (2008). Contributions of psychodynamic approaches to treatment of PTSD and trauma: A review of the empirical treatment and psychopathology literature. *Psychiatry, 71*(1), 13-34.
- Schumacker, R., & Lomax, R. (1996). *A beginner's guide to structural equation modeling*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Schumber, S., & Lee, C. (2009). Adult PTSD and its treatment with EMDR: A review of controversies, evidence, and theoretical knowledge. *Journal of EMDR Practice and Research, 3*(3), 117-129.
- Screiber, J., Stage, F., King, J., Nora, A., & Barlow, E. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *Journal of Educational Research, 99*(6), 323-337.
- Seifert, A., Polusny, M., & Murdoch, M. (2011). The association between childhood physical and sexual abuse and functional and psychiatric symptoms in a single sample of US soldiers. *Military Medicine, 176*(2), 176-181.
- Shoemaker, P., Tankard, J., & Lasorsa, D. (2004). *How to build social science theories*. Thousand Oaks, CA: Sage Publications, Inc.

- Singleton, R., & Straits, B. (1999). *Approaches to social research* (3rd ed.). Oxford, NY: Oxford University Press.
- Slack, K., Holl, J., Altenbernd, L., McDaniel, M., & Stevens, A. (2003). Improving the measurement of child neglect for survey research: Issues and recommendations. *Child Maltreatment*, 8(2), 98-111.
- Solkoff, N., Gray, P., & Keill, S. (1986). Which Vietnam veterans develop posttraumatic stress disorders? *Journal of Clinical Psychology*, 42(5), 687-698.
- Solomon, Z., Mikulincer, M., & Jakob, B. (1987). Exposure to recurrent combat stress: Combat stress reactions among Israeli soldiers in Lebanon war. *Psychological Medicine*, 17(2), 443-440.
- Soper, D. (2013). A-prior sample size calculator for structural equation models [Software]. Available from <http://www.danielsoper.com/statcalc>
- Spinetta, J. (1972). The child-abusing parent: A psychological review. *Psychological Bulletin*, 77, 296-304.
- Steenkamp, M., Nickerson, A., Maguen, S., Dickstein, B., Nash, W., & Litz, B. (2012). Latent classes of PTSD symptoms in Vietnam veterans. *Behavior Modification*, 36(6), 857-874.
- Stein, M., Koverola, C., Hanna, C., Torchia, M., & McClarty, B. (1997). Hippocampal volume in women victimized by childhood sexual abuse. *Psychological Medicine*, 27, 1-9.
- Straus, M., & Kantor, G. (2005). Definition and measurement of neglectful behavior: Some principles and guidelines. *Child Abuse & Neglect*, 29, 19-29.

- Straus, M., Hamby, S., Boney-McCoy, S., & Sugarman, D. (1999). *The personal and relationships profile (PRP)*. Durham, NH: University of New Hampshire: Family Research Laboratory.
- Straus, M., Kinard, E., & Williams, L. (1995). *The multidimensional neglectful behavior scale, Form A: Adolescent and adult-recall version*. Durham, NH: University of New Hampshire: Family Research Laboratory.
- Sullivan, T., Fehon, D., Andres-Hyman, R., Lipschitz, D., & Grilo, C. (2006). Differential relationships of childhood abuse and neglect subtypes to PTSD symptom clusters among adolescent inpatients. *Journal of Traumatic Stress, 19*(2), 229-239.
- Summerfield, D. (2001). The invention of post-traumatic stress disorder and the social usefulness of a psychiatric category. *British Medical Journal, 322*(7278), 98-101.
- Tanielian, T., & Jaycox, L. H. (Eds.). (2008). *Invisible wounds of war: Psychological and cognitive injuries, their consequences, and services to assist recovery*. Santa Monica, CA: RAND Corporation.
- Tanielian, T., Jaycox, L., Schell, T., Marshall, G., Burnam, M. Eibner, C., ...and the Invisible Wounds Study Team. (2008). *Invisible wounds of war: Summary and recommendations for addressing psychological and cognitive injuries* (MG-720/1-CCF ed.). Santa Monica, CA: RAND Corporation.
- Teicher, M., Andersen, S., Polcari, A., Anderson, C., & Navalta, C. (2002). Developmental neurobiology of childhood stress and trauma. *Psychiatric Clinics of North America, 25*, 397-426.

- Thomas, J., Wilk, J., Riviere, L., McGurk, D., Castro, C., & Hoge, C. (2010). Prevalence of mental health problems and functional impairment among active and national guard soldiers 3 to 12 months following combat in Iraq. *Archives of General Psychiatry*, 67(6), 614-623.
- Trimble, M. (1985). Post-traumatic stress disorder: History of a concept. In C. Figley (Ed.), *Trauma and its wake: The study and treatment of post-traumatic stress disorder* (pp. 5-14). New York: Brunner/Mazel, Inc.
- Turner, R., & Marino, F. (1994). Social support and social structure: A descriptive epidemiology. *Journal of Health and Social Behavior*, 35, 192-212.
- U.S. Census Bureau. (2013, February). Retrieved from United States Census Bureau Web site: <http://www.census.gov/>
- U.S. Department of Veterans Affairs. (2012, April 13). *Veteran population*. Retrieved from [http://www.va.gov/vetdata/Veteran\\_Population.asp](http://www.va.gov/vetdata/Veteran_Population.asp)
- U.S. GAO. (2011). VA spends millions on post-traumatic stress disorder and incorporates outcomes into guidelines and policy for post-traumatic stress disorder services. In *VA Health Care. Report to the Ranking Member of Subcommittee on Health, Committee on Veteran's Affairs, House of Representatives* (GAO-11-32). Washington, DC: U.S. Government Printing Office.
- Under Secretary of Defense. (2010). *Population representation in the military services*. Retrieved from <http://prhome.defense.gov/RFM/MPP/ACCESSION%20POLICY/PopRep2010/contents/contents.html>

- Vaillant, G., & Milofsky, E. (1980). Natural history of male psychological health. *American Journal of Psychiatry*, 137, 1348-1359.
- Van Selm, M., & Jankowski, M. (2006). Conducting online surveys. *Quality & Quantity*, 40, 435-456. doi:10.1007/S11135-005-8081-8
- Van Voorhees, E., Dedert, E., Calhoun, P., Brancu, M., Runnals, J., Beckham, J., & VA Mid-Atlantic MIRECC Workgroup. (2012). Childhood trauma exposure in Iraq and Afghanistan war era veterans: Implications for posttraumatic stress disorder symptoms and adult functional support. *Child Abuse & Neglect*, 36, 423-432.
- Van Wormer, K., & Davis, D. (2008). *Addiction Treatment: A strengths perspective*. (2<sup>nd</sup> ed.). Belmont, CA: Thomson Higher Education.
- Vet Center. (2011, July 14). *Eligibility: War zone veteran - all eras, including*. Retrieved from U.S. Department of Veterans Affairs Web site: <http://www.vetcenter.va.gov/Eligibility.asp>
- Vet Center. (2012, August 2). *Vet Center home*. Retrieved from U.S. Department of Veterans Affairs Web site: <http://www.vetcenter.va.gov/index.asp>
- Wakefield, J., & Horwitz, A. (2010). *Clinician's guide to posttraumatic stress disorder* (G. Rosen & B. Frueh, Eds.). Hoboken, NJ: John Wiley & Sons, Inc.
- Walker, E., Katon, W., Russo, J., Ciechanowski, P., Newman, E., & Wagner, A. (2003). Health care costs associate with posttraumatic stress disorder symptoms in women. *Archives of General Psychiatry*, 60, 369-374.

- Wan, T. (2002). Evidence-based health care management: Multivariate modeling approaches (1st ed.). Boston: Kluwer Academic Publishers.
- Weinreb, L., Savageau, J., Candib, L., Reed, G., Fletcher, K., & Hargraves, J. (2010). Screening for childhood trauma in adult primary care patients: A cross-sectional survey. *Primary Care Companion to the Journal of Clinical Psychiatry*, 12(6). doi:10.4088/PCC.10m00950blu
- Weiss, D. (2004). The impact of event scale-revised. In J. Wilson & T. Keane (Eds.), *Assessing psychological trauma and PTSD: A practitioner's handbook* (2nd ed., pp. 168-189). New York: Guilford Press.
- Weiss, D. (2007). The Impact of Event Scale: Revised. In J. Wilson & C. Tang (Eds.), *Cross-cultural assessment of psychological trauma and PTSD* (pp. 219-239). New York: Springer.
- Weiss, D., & Marmar, C. (1997). The Impact of Event Scale: Revised. In J. Wilson & T. Keane (Eds.), *Assessing psychological trauma and PTSD: A practitioner's handbook* (pp. 399-411). New York: Guilford Press.
- Westland, J. (2010). Lower bounds on sample size in structural equation modeling. *Electronic Commerce Research and Applications*, 9, 476-487.
- Widom, C. (1989). The cycle of violence. *Science*, 244, 160-166.
- Wilson, J., Smith, W., & Johnson, S. (1985). A comparative analysis of PTSD among various survivor groups. In C. Figley (Ed.), *Trauma and its wake* (Vol. 1, pp. 142-172). Bristol, PA: Brunner/Mazel.

- World Health Organization. (1995). *World health report 1995: Bridging the gaps* (Report of the Director-General). Geneva, Switzerland: World Health Organization.
- Worthington, E. (1978). Demographic and pre-service variables as predictors of post-military service adjustment. In C. Figley (Ed.), *Stress disorders among Vietnam veterans* (pp. 173-187). New York: Brunner/Mazer.
- Yarvis, J. (2013). Posttraumatic stress disorder (PTSD) in veterans. In A. Rubin, E. Weiss, & J. Coll (Eds.), *Handbook of military social work* (pp. 81-97). Hoboken, NJ: John Wiley & Sons, Inc.
- Yehuda, R., Halligan, S., & Grossman, R. (2001). Childhood trauma and risk for PTSD: Relationship to intergenerational effects of trauma, parental PTSD, and cortisol excretion. *Developmental and Psychopathology, 13*, 733-753.
- Zaidi, L., & Foy, D. (1994). Childhood abuse experiences and combat related PTSD. *Journal of Traumatic Stress, 7*(1), 33-42.
- Zlotnick, C., Johnson, J., Kohn, R., Vicente, B., Rioseco, P., & Saldivia, S. (2008). Childhood trauma, trauma in adulthood, and psychiatric diagnoses: Results from a community sample. *Comprehensive Psychiatry, 49*(2), 163-169