Running head: PERSONALITY PREDICTORS OF PTSD

Personality Predictors of Combat-related Posttraumatic Stress Disorder

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Abstract

After a war, most combatants readapt to their civilian lives without serious psychological disturbances. Only a small proportion of servicemen and women develop posttraumatic stress disorder (PTSD) (Dekel, Solomon, Elklit, & Ginzburg, 2004). Why can two soldiers encounter the same traumatic situation, yet only one of them acquires PTSD (Ozer & Weiss, 2004)? Research shows certain personality traits prior to the traumatic event make one more vulnerable to the stressful condition (King, Foy, & Gudanowski, 1996). This study will involve Operation Iraqi Freedom servicemen and women between the ages of 18 and 35. The study will conclude when participants are between the ages of 38 and 50. The present study will investigate whether prewar personality traits predict later development of PTSD. The current study will also examine the correlation between combat exposure and PTSD symptom severity. The relationship between gender and subsequent development of PTSD will be explored. Several clinical scales of the Minnesota Multiphasic Personality Inventory (MMPI) will be administered to participants prior to deployment. Upon returning from duty, subjects will complete the Mississippi Scale for Combat-related PTSD (MSCPTSD). Participants will also complete the Combat Exposure Scale (CES) after returning from duty. Each year following the initial contact, subjects will be re-assessed for PTSD symptoms.

Personality Predictors of Posttraumatic Stress Disorder

Posttraumatic stress disorder (PTSD) is described as a group of symptoms which result from experiencing a severe traumatic event. Diagnostic criteria consist of reliving or having nightmares about the traumatic experience, avoiding stimuli related to the trauma, numbing of emotions, and hyperarousal (Sauer & Bhugra, 2001). Approximately fifty percent of adults in the United States experience at least one traumatic situation at some point in their lives. Nevertheless, a mere ten percent of females and five percent of males acquire PTSD (Ozer & Weiss, 2004). Following a war, the majority of soldiers readapt to their civilian lives without profound difficulty. Only fifteen percent of servicemen and women acquire PTSD (Dekel, Solomon, Elklit, & Ginzburg, 2004). Why can two individuals experience the same stressful event, yet only one of them develops PTSD (Ozer & Weiss, 2004)? Research has shown personality characteristics prior to the traumatic event make one more vulnerable to the stressful experience (King, Foy, & Gudanowski, 1996). Individuals with PTSD often have stable and global life event attributions and a pessimistic attributional style (Gray & Lombardo, 2003).

Literature Review

Personality Predictors of PTSD

Stress susceptibility refers to pretrauma character traits that cause one to be more vulnerable to the harmful impacts of a traumatic event. It is usually viewed as an interaction between the inclining feature and the traumatic event. Therefore, the connection between the predisposing element and PTSD is dependent on the degree of trauma. Under high levels of stress, persons are more likely to experience negative consequences, despite their personality traits. Under low levels of stress, persons with

personality predispositions, which make them vulnerable, are more at risk (King, King, Foy, & Gudanowski, 1996). For example, in a sample of Vietnam veterans, a family history of mental disorder (specifically alcoholism) is related to the development of PTSD under low levels of combat exposure. Under high levels of combat exposure, a background history of psychiatric problems is less significant as a predictor of PTSD (Foy, Resnick, Sipprelle, & Carroll, 1987).

According to O'Toole, Marshall, Schureck, and Dobson (2001), feelings about deploying to Vietnam, anxiety and concern about being deployed, and job fulfillment while in Vietnam were significant predictors of PTSD. A pre-deployment history of depression, dysthymia, antisocial personality disorder, and agoraphobia are possible predictors of subsequent development of PTSD. Therefore, servicemen with a propensity for depression or social withdrawal have a greater chance of acquiring PTSD if exposed to stressful situations. It is likely that a history of antisocial tendencies and conduct disorder causes servicemen to seek out more dangerous combat situations and, therefore, have a greater probability of developing PTSD symptoms (O'Toole, Marshall, Schureck, & Dobson, 2001). In addition, scores obtained at enlistment on an instrument measuring neuroticism were predictive of subsequent PTSD (Brewin, Andrews, & Valentine, 2000).

Personality theorists believe when unforeseen or unwelcome incidents occur, people have a desire to create underlying reasons to explain those situations. These explanations may impact the seriousness of the consequent disorder. A pessimistic outlook on life may be related to the development of PTSD. Attributing distress to global and stable elements would characterize a hopeless, negative outlook. This type of reaction to a traumatic event results in more lasting anxiety compared to writing off the

occurrence as an isolated event. If individuals perceive the conditions that caused their terrifying experience as persistent and likely to exist in the future, an increased sense of arousal and stress would be anticipated (Gray & Lombardo, 2003).

Research shows having low self-confidence prior to deployment is associated with the development of PTSD (Bramsen, Dirkswager, & van der Ploeg, 2000). Servicemen with PTSD were also shown to have a decreased sense of self-worth prior to deployment. Veterans may acquire PTSD due to their own self-criticism for not living up to an internalized perception of the robust combatant (Dekel, Solomon, Elklit, & Ginzburg, 2004). Several scales of the Minnesota Multiphasic Personality Inventory (MMPI) haven been shown to predict PTSD. These scales include psychopathic deviate, masculinity-femininity, paranoia/psychotic ideation, psychosomaticism, hpochondriasis, and negativism (Miller, 2003). There is also evidence to support the personality characteristic psychoneuroticism predicts development of PTSD (Bramsen, Dirkswager, & van der Ploeg, 2000).

Particular pre-deployment personality characteristics may effect the evaluation of the traumatic event and the coping strategies used to deal with the trauma. After being exposed to a stressful situation, certain personality dispositions may predispose persons to use less advantageous coping mechanisms. For example, people scoring high on negativism (having a pessimistic outlook on life) tend to be less likely to request support from others. Individuals who respond to traumatic conditions with physical complaints may have an avoidant coping method. These individuals may not want to confront their psychological troubles directly. Failure to deal with emotional problems may result in physical illness and PTSD (Bramsen, Dirkswager, & van der Ploeg, 2000).

Peritraumatic Dissociation as a Predictor of PTSD

Peritraumatic dissociation consists of changes in the experience of time, location, and self during and directly following a traumatic event. Individuals describing more peritraumatic dissociation are at an increased risk of acquiring PTSD. Research demonstrates acute stress disorder following vehicle collisions and crimes is a forecaster of PTSD. Acute stress disorder refers to a collection of symptoms occurring in the first month after encountering trauma. The symptoms often include dissociation, evasion, and a high state of arousal. Results show both peritraumatic dissociation and acute stress symptoms predict PTSD symptom development later in life. Knowledge regarding the nature of dissociative occurrences and acute stress symptoms may assist the clinician in distinguishing distressed patients with an elevated probability of acquiring PTSD (Birmes et al., 2003).

Numerous studies show the clearest predictor of PTSD is peritraumatic dissociation. It is important to consider the dissimilarities among the individuals encountering a traumatic event when explaining why peritraumatic dissociation is a predictor of PTSD. It is also necessary to take into account the nature of the traumatic event. For instance, the severity of the traumatic event may increase one's chances of experiencing peritraumatic dissociation. In addition, the degree of emotional and physical arousal a person suffers during the event can influence his or her chances of experiencing such dissociation. Other factors that can enhance an individual's probability of enduring peritraumatic dissociation include temperament, previous experience, previous psychiatric history, and hereditary and situational features (Ozer & Weiss, 2004).

Studies connecting dissociative propensities and traumatic stress reaction show: There is a strong correlation between childhood sexual or physical mistreatment and later dissociative tendencies; reoccurring and harsh early abuse is more clearly related to successive dissociative incidences than are separate occurrences of mistreatment; dissociation during a childhood traumatic situation may be a defense mechanism to deal with devastating trauma; adults who have experienced trauma describe feelings of disconnection, depersonalization, dissociation, and out of body sensations; adults with PTSD are more susceptible to hypnosis than adults without PTSD (Marmar et al., 1994). Concerning the relationship between childhood physical abuse and combat-related PTSD, studies show Vietnam veterans with PTSD report elevated rates of childhood physical or sexual abuse than Vietnam veterans without PTSD. Adults maltreated in childhood may have developed strategies for coping with disturbing situations, which may cause them to be more vulnerable to successive trauma such as combat experience (Bremner, Southwick, Johnson, Yehuda, & Charney, 1993).

Increased degrees of dissociation during combat stress are related to greater levels of PTSD. Many therapists believe dissociation during a traumatic event signifies an attempt to manage disastrous threat and helplessness. On the contrary, dissociation has not always been viewed as a defense mechanism to traumatic conditions. Dissociation due to trauma results from a state of hyperarousal. A heightened state of arousal typically causes a disruption in memory functioning. The traumatic situation is not accessible to conscious demonstration and is unable to be sorted out and handled over time. Rather, the trauma remains a set notion that is separated from consciousness and misrepresents later experiences and behaviors. According to Marmar et al. (1994), Vietnam combat

veterans who experienced more dissociation during trauma endured increased levels of traumatic stress twenty years after the trauma. Results show the tendency to dissociate during a trauma situation may offer the victim some amount of disconnection, isolation, and unreality. Nevertheless, dissociation during a traumatic event does not provide lasting protection from later PTSD. Rather, dissociation increases one's chances of developing PTSD later in life (Marmar et al., 1994).

The strong correlation between peritraumatic dissociation and later development of PTSD may be influenced by several factors. Adults exposed to trauma who dissociate during a traumatic event may have been victims of early trauma that decreased their threshold for dissociation. Anxiety levels may control the degree of dissociation during trauma incidents. People with PTSD experience flashbacks in situations that produce high arousal. Patients with panic disorder often have peritraumatic dissociation at the peak of their anxiety attacks. These findings imply the association between peritraumatic dissociation and PTSD may be influenced by levels of anxiety during the traumatic event. Results also show susceptibility to dissociative tendencies may be an inheritable characteristic (Marmar et al., 1994).

Combat Exposure and the Development of PTSD

The level of combat exposure is a strong predictor of later PTSD symptoms. Nearly forty percent of the discrepancy in PTSD symptoms is forecasted by the extent of combat exposure. Studies show a strong positive correlation between combat exposure and a sense of isolation and social withdrawal after returning home from war. Research with Vietnam veterans demonstrates a positive correlation between combat exposure and stress-related symptoms after returning from duty. This finding was only true, however,

for veterans returning after 1967, a crossroads in American's outlook concerning the war. Three factors that contributed to the development of stress symptoms include not receiving a hero's welcome, separation from civilian peers, and political opposition. Social support after returning home from high combat exposure is also viewed as an influential factor in the development of PTSD. Engagement in or surveillance of traumatic hostility (including severe maltreatment, rape, and mutilation) during the Vietnam War was also shown to be highly related to later development of PTSD (Foy, Resnick, Sipprelle, & Carroll, 1987).

In World War II, approximately twenty-three percent of the combat zone fatalities were psychiatric. In addition, death tolls among veterans, mostly due to suicides and mishaps, increase substantially during the first five years following a war. Several positive and negative effects of combat duty have been recognized. Some positive consequences include learning how to deal with harsh conditions, increase in willpower, and a broader outlook on life. Negative experiences tend to consist of separation from family and friends, combat stress, and loss of comrades. Males who experience a high degree of combat exposure are most likely to report coping, self-discipline, and valuing life as desirable consequences of military service. They are also, however, more likely to experience psychological difficulties upon returning from duty and later in life. Negative outcomes of military service tend to refer to losses and undesirable emotional states. Positive consequences typically refer to abilities or resource attainment (Aldwin, Levenson, & Spiro, 1994).

. The correlation between combat experience in young adulthood and development of PTSD later in life was partly influenced by evaluations of the negative and positive

outcomes of military duty. The perception of unfavorable consequences was positively correlated with PTSD symptom severity, negative affective states, and reaction style. Conversely, the judgment of positive outcomes produced by combat anxiety was negatively correlated with the development of PTSD. The most intriguing discovery was the extent to which males viewed their combat duty positively. Many viewed this time as enhancing maturational growth and augmenting coping strategies and self-confidence. As combat exposure increased, so did the men's perceptions of desirable developmental effects. Yet, the men in this group also reported more negative impacts. These impacts consist of combat stress, loss of comrades, and mortality and obliteration (Aldwin, Levenson, & Spiro, 1994).

A study examining traumatic war stressors and psychopathology among World War II, Korean, and Vietnam War veterans shows the positive correlation between combat exposure and PTSD symptoms was comparable across all three major U.S. wars. Therefore, knowledge gained regarding the influence of distinct twentieth century wars on veteran's mental health may be relevant to the impacts of modern combat. The most significant factor that was common across all three wars was having the role of slaying. Liability for taking another human being's life is the most invasive, disturbing experience of combat. Other factors associated with combat-related emotional disturbance include being a target of killing and having partaken in abusive violence. Being a target of killing, however, causes less emotional distress than being responsible for the killing. This finding is attributed to the idea that being a target requires the smallest amount of personal liability for imposing death on other individuals (Fontana & Rosenheck, 1994).

Demographic and Psychosocial Predictors of PTSD

King, King, Foy, and Gudanowski (1996) assessed the correlations of reported prewar demographic and psychosocial traits, in addition to combat stressors, to existing PTSD symptoms. The study involved a sample of United States Vietnam veterans. Both males and females encountered a significant amount of combat-related stressors. Prewar elements, however, played a more crucial role for males than for females. For females, an unsteady family history was associated to PTSD through customary combat situations. Women from unstable families typically described increased exposure to combat. In addition, females viewed the battleground as more cruel. For males, family unsteadiness had powerful connections to PTSD. These associations were due to adolescent antisocial tendencies, age, history of prior trauma, and customary combat situations. Adolescent antisocial behavior did not have an effect on women. In addition, the effect of age on PTSD did not have a direct influence on female veterans. For males, however, there was a direct influence of maturity on PTSD. Males, who were younger when they were in combat, were more prone to develop PTSD. A history of prior trauma did not have an effect on women. This factor did, however, have a direct effect on men. Prior trauma was shown to be strongly correlated with PTSD.

A meta-analytic study of trauma-exposed adults shows lower percentages of PTSD in female Vietnam War veterans than in male Vietnam War veterans. This finding may be due to the fact the majority of women veterans were employed as nurses; whereas, most male veterans were directly involved in combat. Therefore, female and male veterans were exposed to different types of trauma. Research also reveals racial and ethnic minorities encountered more combat stress than their Caucasian counterparts. This

fact explains the greater probability of PTSD related to minority status (Brewin, Andrews, & Valentine, 2000).

Biologically Focused Models of Trauma Response

Currently, scientists examining the biological aspects of PTSD have concentrated on the functions and regions of the brain. Studies have focused on the amygdala and hippocampus, structures of the brain that manage the fear response and the formation of memory. Research has also focused on the hypothalamic-pituitary-adrenal (HPA) axis. These regions of the brain manage responses to severe stress. Investigation of structures of the brain implicated in the fear reaction has been widespread due to the fact trauma situations typically produce fear. In addition, fear commences the flight or fight response related to the high arousal symptoms of PTSD. Additionally, fear is involved in the procedures of creating and sustaining traumatic memories. Research involving individuals with PTSD shows they are typified by a high sensitivity of the HPA axis. This axis is involved in producing, preserving, and halting rises in stress-related hormones, one of the main features of traumatic conditions. Data indicate people with PTSD display disordered regulation in the production of cortisol. This hormone is controlled by the HPA axis. The damaging impacts of the excessive manufacture of cortisol are thought to be liable for the deterioration of the hippocampus, which is often found in persons with PTSD. The abnormal regulation in the HPA axis includes the feedback system that shuts down the stimulation created by fear (Ozer & Weiss, 2004).

The HPA axis is also involved in the regulation of adrenaline. Studies suggest memories created during emotionally charged situations can be modified by inhibiting the production of adrenaline. This discovery implies the level of arousal during or

shortly following the trauma may have significant importance for the invasive and hyperarousal symptoms of PTSD. The existence or nonappearance of adrenaline may become a central event that has connotations for how symptoms of PTSD appear and whether a situation is perceived as traumatic. Resiliency may be manifest in the individual differences in the functioning of the HPA axis. The way in which high levels of emotional and physical arousal are controlled in the brain formations (the amygdale and hippocampus) have now been related to the development of PTSD (Ozer, Best, Lipsey, & Weiss, 2003).

Dysregulation of brain structures are responsible for some PTSD symptoms. Patients, however, frequently suffer from specific learned reactions to environmental stimuli. This fact implies associative learning plays a part in the development of PTSD. Research indicates fear-augmented startle is exaggerated by manipulations of numerous neurotransmitters, for instance dopamine, norepinephrine, and endorphins. Presently, there are two fundamental learning processes involved in PTSD. These processes include associative and non-associative. Augmentations that depend on signals, such as panic attacks caused by a loud noise, indicate associative conditioning. Neuron stimulation generated by recurring contact with gunfire may create non-associative learned reactions. It is highly probable these two processes interact (Krystal et al., 1989).

Cognitive/Behavioral Models of Trauma Response

Two forms of behavior theory arise in the process of learning: Classical and instrumental. Theories of combat-related trauma suggest the individual exposed to the trauma may become conditioned to a broad array of stimuli that were present during the traumatic event. The stimuli could include sounds, odors, or time of day. These stimuli

become related to the trauma due to the mechanisms of classical conditioning. In this manner, the stimuli produce anxiety and stress. When the distressed person comes across one of these habituated stimuli, he or she feels a sense of severe anxiety. This anxiety may be exhibited in several ways. The stress and anxiety is not restricted to stimuli existing at the time of the traumatic event. Signals present during combat may provoke emotional reactions, for instance nervousness or rage. Therefore, sudden loud noises, such as an automobile backfiring or firecrackers exploding, may activate emotional reactions that were experienced during the initial traumatic situation (Foa, Steketee, & Rothbaum, 1989).

There are several reasons why individuals may not remember all the signals included in the initial trauma. The trauma is so severe that efforts are made to evade preserving the memory for any extended period of time. Also, cultural stereotypes disapprove of emotional expression by males; therefore, combat veterans are restricted in describing the traumatic event to others, in the military or at home. The majority of distressed persons describe extended time periods in which they are incapable of remembering (Foa, Steketee, & Rothbaum, 1989). A leading cognitive model of trauma response emphasizes the significance of perceptions and associated emotions regarding the self and the surrounding environment. For example, an individual might believe that while the world is not always secure, the lack of security concerns other persons only. The traumatized person's perceptions about the environment must be modified to incorporate this supposition and make sense of the event (Ozer & Weiss, 2004). For example, Vietnam theater veterans frequently encountered situations in which the boundaries between security and threat were unclear. These veterans' worlds became

unpredictable and uncontrollable (Foa, Steketee, & Rothbaum, 1989). Elements that decrease the probability of effective incorporation would increase the chance of developing PTSD. These elements consist of traits of the person, his or her situation, and the traumatic event itself (Ozer & Weiss, 2004).

Another prominent cognitive model stresses the network of links connecting thoughts about a traumatic situation to cognitive, emotive, physical, and behavioral reactions. This model uses a metaphor of a memory system to explain associated information regarding the traumatic situation and later cognitive, emotional, physical, and behavioral reactions. Setting off one component in the system triggers other features and this continuous recurrence is responsible for the ongoing symptoms (Ozer & Weiss, 2004).

Conclusion of Literature Review

Approximately fifty to sixty percent of the United States population experiences a traumatic event at some point in their lives; however, less than five to ten percent develop PTSD (Ozer, Best, Lipsey, & Weiss, 2003). After a war, less than fifteen percent of combat soldiers develop PTSD (Dekel, Solomon, Elklit, & Ginzburg, 2004). Are there any risk factors that can predict who will and who will not acquire PTSD? A crucial hint may be located in the surveillance that there is substantial individual inconsistency in psychological reactions to stress caused by trauma There tends to be a relationship between the development of PTSD and exposure to prior traumatic situations, family history of psychopathology, and the victim's past psychiatric functioning. Low psychological functioning, possibly impacted by inadequate social support, influences one's risk for developing PTSD following exposure to trauma. The in-the-moment

assessment and meaning of the traumatic event may be as important in understanding who acquires PTSD as the more fixed elements such as adaptation, previous exposure, or simultaneous psychopathology (Ozer, Best, Lipsey, & Weiss, 2003).

Statement of the Problem

My research will involve Operation Iraqi Freedom servicemen and women. Few studies have examined the relationship between prewar personality characteristics and later development of PTSD. The majority of studies in this domain have evaluated personality traits after exposure to trauma. Therefore, I will investigate whether pre-deployment personality traits predict future development of PTSD. I will also explore the relationship between combat exposure and PTSD symptom severity. In addition, I will investigate the relationship between gender and development of PTSD. My proposal is related to former research on the etiology of PTSD. The hypotheses include:

1. There will be a positive correlation between the Mississippi Scale for Combat-related PTSD (MSCPTSD) and the clinical scales of the Minnesota Multiphasic Personality Inventory (MMPI).
2. There will be a positive correlation between the Combat Exposure Scale (CES) scores and the MSCPTSD scale scores.
3. Males will score higher than females on the MSCPTSD scale.

The independent variables in this study are degree of combat exposure, personality characteristics, and gender. The dependent variable is the PTSD score on the MSCPTSD. Prior to deployment, servicemen and women will be given a medical exam. As part of the procedure, military personnel will complete the MMPI. This procedure will assess pre-war personality characteristics. After returning from duty, participants will complete the CES. This measure will assess their degree of combat exposure. Participants will also complete the MSCPTSD after returning from duty. The independent variables will be defined by scores on the MMPI prior to deployment and scores on the CES once their

tour of duty is complete. The dependent variable will be defined by scores on the MSCPTSD.

Method

Participants

Three hundred servicemen and women (150 males and 150 females) will be identified prior to deployment through the United States Department of Defense. Participants will be scheduled to deploy to Iraq within the next few weeks. Participants will also be expected to encounter various combat situations. Most of the servicemen and women will be between the ages of 18 and 30. The study will conclude when participants are between the ages of 38 and 50.

Materials

The MMPI will be completed by the servicemen and women prior to being deployed. The MMPI will assess for personality traits including: A negative and hostile attitude toward others and life, shyness, paranoid ideas and psychotic conditions, and outgoing behavior. The specific MMPI scales include hypochondriasis, depression, hysteria, psychopathic deviate, paranoia, schizophrenia, hypomania, and social introversion. Studies have shown these scales to be internally reliable and to have good test-retest consistency and validity. Participants will complete the MSCPTSD after returning from combat duty. This instrument consists of 35 items, which are rated on a scale of 1-5. The scale has good internal reliability and high construct validity. Subjects will also complete the CES, which is a 7-item scale that measures various aspects of combat-related stress. The CES uses a 5-point Likert scale and assesses the duration and intensity of combat exposure. The CES has high internal consistency.

Procedure

Once participants are identified, I will administer the MMPI during their medical exam prior to deployment. After participants return from duty, I will administer the MSCPTSD. Each year following the initial contact, I will re-assess participants for PTSD symptoms. I will mail or e-mail the scale to participants for follow-up evaluations. I will also have subjects complete the CES after returning from duty. I will compare scores on the MMPI to scores on the MSCPTSD. In addition, I will compare scores on the MSCPTSD to scores on the CES. I will also compare males and females scores on the MSCPTSD.

Data Analysis

A multiple regression analysis with PTSD symptom severity as the dependent variable will be conducted. The MMPI scales that will be included in the analysis are hypochondriasis, depression, hysteria, psychopathic deviate, paranoia, psychasthenia, schizophrenia, hypomania, and social introversion. This procedure should demonstrate whether pre-war personality characteristics predict development of PTSD. Gender and degree of combat exposure will also be included in the analysis. The examination of these variables should show how gender and degree of combat exposure relate to the development of PTSD.

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