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Brief Report

Childhood Factors and War Zone Stress in Chronic PTSD

Beverly S. Donovan,[1] Edgardo Padin-Rivera,[1] Thomas Dowd,[2] and Dudley David Blake[3]

This study assessed the predictive validity of combat factors and selected premilitary variables (i.e., childhood physical abuse, substance abuse in the family of origin, or being raised in a nonadaptive or noncohesive family) on posttraumatic stress disorder (PTSD) group membership. In addition, it assessed the correlation of combat exposure and selected premilitary variables with the severity of PTSD symptomology. Ninety-three male Vietnam combat veterans with PTSD were compared to 82 male Vietnam combat veterans without the disorder. The results of two hierarchical logit analyses identified combat exposure as the best predictor of PTSD group membership. However, physical punishment was also found to significantly predict group membership when entered first in the analyses. Furthermore, multiple regression analyses conducted with the PTSD group alone found that both combat exposure and physical abuse predicted greater PTSD symptomology. These findings suggest that childhood physical abuse as well as military trauma should be addressed in the assessment and treatment of chronic PTSD patients.

KEY WORDS: PTSD; childhood factors; Stress Evaporation Theory; Residual Stress Theory; combat exposure; Victnam veterans.

Historically, two different theories have been posited to account for war-related posttraumatic stress disorder (PTSD). PTSD researchers who support Residual Stress Theory (RST) focus on the aversive nature of war

[1]Cleveland Department of Veterans Affairs Medical Center, Brecksville, Ohio 44141.
[2]Department of Counseling Psychology, 316 White Hall, Kent State University, Kent, Ohio 44242.
[3]Palo Alto Department of Veterans Affairs Medical Center, National Center for Post-Traumatic Stress Disorder, Menlo Park, California 94304.

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zone experiences and contend that the stress of combat alone is sufficient to explain the development of PTSD. According to this position, premilitary factors are of minimal or secondary importance in understanding PTSD. An examination of the literature reveals that the majority of investigations support this viewpoint, finding exposure to combat to be the most significant factor correlated with the development of PTSD (Card, 1983; Egendorf, Kadushin, Laufer, Rothbart, & Sloan, 1981; Foy & Card, 1987; Foy, Carroll, & Donahoe, 1987; Frye & Stockton, 1982; Penk et al., 1981).

A smaller group of PTSD studies support Stress Evaporation Theory (SET) (Brill & Beebe, 1955; Dobbs & Wilson, 1960; Enzie, Sawyer, & Montgomery, 1973; Helzer, Robins, & McEvoy, 1987; Worthington, 1978). This theoretical position posits that premilitary factors play a primary role in the development of war-related PTSD. According to this theory, individuals without a preexisting vulnerability tend to recover from war trauma without major disruptions in their personality integration. For example, Streimer, Cosstick, and Tennant (1985) found a high incidence of poor parent-child relationships and parental alcohol abuse among Vietnam veterans who were diagnosed as having PTSD. Premilitary factors such as problems with authorities and premilitary psychosocial adjustment have been linked to both combat-related PTSD and other postmilitary mental health problems (Egendorf et al., 1981; Helzer et al., 1987; Laufer, Gallops, & Frey-Wouters, 1984).

The present study was designed to investigate the relative contribution of combat exposure and selected premilitary variables in predicting PTSD status. The correlation of combat exposure and premilitary variables with PTSD symptomology was also examined.

Method

Participants

All research participants were U.S. military veterans who served in the Vietnam War between August 5, 1964 and May 7, 1975. The sample consisted of 93 adult male Vietnam combat veterans who met criteria for PTSD and 82 adult male Vietnam combat veterans who did not meet these criteria. The Vietnam veterans with PTSD were recruited from the National Center for PTSD in Palo Alto, California, and the Department of Veterans Affairs Medical Center (DVAMC) in Brecksville, Ohio. These participants were diagnosed as having PTSD through the use of the Clinician-Administered PTSD Scale (CAPS) (Blake et al., 1990, 1995) and corroborated by psychometric instruments, including the Mississippi Scale for Combat-

Related PTSD (Keane, Caddell, & Taylor, 1988), the Impact of Event Scale (Horowitz, Wilner, & Alvarez, 1979), and the PTSD Scale (PK) of the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) (Lyons & Keane, 1992). The non-PTSD control participants were recruited from among DVAMC employees and from local chapters of Vietnam Veterans of America (VVA) organizations.

Scores on the Mississippi Scale were used to confirm the diagnosis of PTSD in the experimental group and to screen out undiagnosed cases of PTSD in the control group. Using the cut-off score established by the National Vietnam Veterans Readjustment Study (Kulka et al., 1990), control participants had to score 89 or below on this instrument to verify their non-PTSD status. On the other hand, participants in the PTSD group had to score 107 or above in order to affirm their PTSD status and qualify as PTSD subjects (Keane et al., 1988). Eliminating a segment of middle range scores (90–106) helped to maximize between-group differences.

Procedure

All subjects completed the Mississippi Scale for Combat-Related PTSD (M-PTSD; Keane et al., 1988), a combat exposure scale (CES; Keane et al., 1989), and three standardized instruments which assessed premilitary variables shown in previous investigations to play a role in the development of PTSD. The premilitary variables included: childhood physical abuse as measured by scores on the Physical Punishment Scale of the Assessing Environments III (AE-III; Berger & Knutson, 1984); familial substance abuse as measured by scores on the Children of Alcoholics Screening Test (CAST; Jones, 1991); and adaptation and cohesion in the family of origin as evaluated by scores on the Family Adaptation and Cohesion Evaluation Scales II (FACES II; Olson, Russell, & Sprenkle, 1983).

Data Analyses

Two sets of hierarchical logit and multiple regression analyses were conducted to compare the relative importance of combat exposure and premilitary variables in predicting PTSD group membership and symptomology. The first logit equation entered combat exposure scores first, followed by scores on the four scales measuring premilitary distress entered in the predicted order of descending significance (i.e., childhood physical punishment, substance abuse in the family of origin, family adaptation and family cohesion). The importance of premilitary variables in predicting PTSD would be supported if any of the latter four scores

significantly predicted PTSD group membership, even though they were not entered first in the hierarchy. In the second logit analysis, premilitary distress scores were entered first, followed by the combat exposure scores. The superior predictive value of combat exposure would be supported if it significantly predicted PTSD group membership, even though it was entered last in the hierarchy.

Next, two hierarchical multiple regressions were conducted on the PTSD group alone, using scores on the Mississippi Scale as the criterion variable with combat exposure, childhood physical punishment, substance abuse in the family of origin, family adaptation and family cohesion entered as predictor variables in that order. These analyses were conducted to determine which variables accounted for greater symptomology among PTSD veterans, as reflected by scores on the Mississippi Scale. The first regression equation entered combat exposure first while the second entered combat exposure last.

Results

Both hierarchical logit analyses found combat exposure to be the most significant factor predicting PTSD. Combat exposure predicted group membership, whether it was entered first ($p < .001$) or last ($p < .01$) in the analyses. When combat exposure was entered first in the analysis, 81% of the PTSD group and 64% of the non-PTSD group was correctly classified for an overall correct classification rate of 74%.

When scores on the premilitary variables (childhood physical punishment, substance abuse in the family of origin, family adaptation and family cohesion) were entered first and combat exposure was entered last, both combat exposure and physical punishment significantly predicted group membership ($p < .01$). These variables correctly classified 77% of the PTSD group and 31% of the non-PTSD group and led to an overall correct classification rate of 57%.

The two hierarchical multiple regression analyses conducted on the PTSD group alone found that both combat exposure and physical punishment significantly predicted PTSD symptomology. Combat exposure best predicted PTSD whether it was entered first ($F = 33.77$; accounting for 20% of the variance) or last ($F = 33.38$; accounting for 18% of the variance) in the analysis, $p < .001$. However, physical punishment also significantly predicted the magnitude of PTSD symptomology. It accounted for 9% of the variance ($F = 14.0$) when it was entered first in the analysis ($p < .001$) and accounted for an additional 8% of the variance in scores when it was entered second in the analysis ($F = 14.2$; $p < .001$).

Discussion

The results of the present investigation found combat exposure to be the strongest predictor of PTSD status. The role of combat exposure in the manifestation of PTSD was confirmed by the fact that it significantly predicted group membership when it was entered first or last in the hierarchical logit analysis. In addition, combat exposure accounted for the most variance in symptomology among the PTSD patients, 20% when entered first and 18% when entered last.

On the other hand, the findings also suggest that childhood physical punishment plays a significant role in the development of PTSD, at least among those who experience chronic symptoms. Of particular importance is the finding that physical punishment accounted for a significant amount of the variance in symptomology among the PTSD subjects, 9% when entered first and 8% when entered second. No other premilitary variable significantly predicted variance in PTSD symptoms. Childhood physical punishment, particularly if it is severe, may be a vulnerability factor that increases the probability of both the development of PTSD and the severity of PTSD symptomology. These findings corroborate the experience of clinicians who have found many clients in treatment for PTSD to report a history of childhood physical, emotional, or sexual abuse.

Perhaps individuals who experience greater childhood punishment are more vulnerable to developing PTSD, show greater symptomology, and have greater difficulty in recovering from the disorder. This contention is supported by two recent investigations. One study found that among combat veterans identified as suffering from "complex PTSD," most (80%) had a history of childhood abuse (Newman et al., 1993). Another investigation by Bremner and his colleagues found that PTSD patients had significantly greater rates of physical abuse than non-PTSD individuals and that this association held even after controlling for combat exposure (Bremner, Southwick, Johnson, Yehuda, & Charney, 1993).

The fact that less variance was accounted for by physical punishment when combat exposure was entered first as opposed to when combat exposure was entered last suggests that the amount of shared variance is quite large. Future research could profitably be directed towards disentangling the unique variance due to each.

The present study suffers from several methodological limitations. Neither the PTSD nor the non-PTSD group were screened for other psychiatric disorders and thus there is no way to discern whether or not co-morbidity may have confounded the research findings. Another potential limitation of this study was its reliance on self-report data related to both combat experience and early childhood events. Some investigators believe

reports of stressful life events are more likely to be remembered and recounted accurately than nonstressful events (Helzer, 1981), while others argue that there is no clear way to assess the veracity of self-report data (Dohrenwend & Dohrenwend, 1974). Even though it is known that abuse validation by family members carries its own potential bias, it is possible that patients with PTSD remember their childhood as more stressful than non-PTSD individuals and that both history and maturation factors influenced responses (Campbell & Stanley, 1963).

There are several clinical implications of this study. If physical punishment in childhood significantly differentiates chronic PTSD from non-PTSD patients and significantly accounts for variance in PTSD symptomology, then it is important that this variable not be overlooked in treatment. Programs that treat combat-related PTSD cannot assume that symptoms of the disorder are rooted solely in military trauma. For this reason, the existence and extent of physical punishment endured in childhood should be assessed and addressed during treatment. It is possible that physical punishment or abuse in childhood may influence participation in traumatic events, the personal meaning attached to war zone trauma, and a soldier's vulnerability to combat distress. Furthermore, recovery from PTSD symptomology may be impeded if premilitary trauma is ignored or minimized during treatment. Although replication studies are clearly needed, the findings of this study have meaningful implications for the conceptual understanding and treatment of war-related PTSD.

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whether a PTSD population can be distinguished from a psychiatric population assigned comorbid anxiety and depressive disorders. Future research that incorporates a dimensional diagnostic approach, that samples from a heterogeneous PTSD population, or that uses stricter diagnostic coding of groups may prove valuable in illuminating the complexities of PTSD and in enhancing our knowledge regarding its treatment.

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