
Minnesota Multiphasic Personality Inventory Profiles of Vietnam Combat Veterans with Posttraumatic Stress Disorder and Their Children



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Forty children of 28 fathers who are Vietnam veterans with posttraumatic stress disorder (PTSD) completed the Minnesota Multiphasic Personality Inventory. Each of the fathers had at least one elevated clinical scale. Fathers averaged eight elevated clinical scales, and compared to more recent norms, fathers averaged seven elevated clinical scales. Seventy-eight percent of the children had at least one clinically elevated scale (averaging three elevated clinical scales). Compared to contemporary normal adolescents and adults, 65% of children had at least one clinically elevated scale (still averaging three elevated clinical scales). No consistent MMPI profile patterns emerged within or across the two groups. No gender differences were detected among child MMPI profiles. Forty percent of the children reported illegal drug use, and 35% reported behavior problems. Fifteen percent of children reported previous violent behavior. Eighty-three percent of the children reported elevated Cook-Medley hostility scores as compared to an age-matched national normative sample. Children with higher PK scores were also significantly more likely to report higher Cook-Medley hostility scores. Forty-five percent of children reported significant elevations on the PTSD/PK subscales. © 1997 John Wiley & Sons, Inc. *J Clin Psychol* **53**: 847-852, 1997

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While much of the research on combat-related posttraumatic stress disorder (PTSD) has focused on intrapersonal aspects of the disorder, a growing body of research indicates that veterans with PTSD also experience profound interpersonal difficulties. These include problems with self-disclosure, sociability, family cohesion, sexual intimacy, and expression of affection, hostility and aggression (Beckham et al., 1996; Carroll, Rueger, Foy, & Donahoe, 1985).

Jordan and colleagues (1992) found that children of Vietnam veterans with PTSD were significantly more likely to have behavioral difficulties (as reported by their mothers) than children of veterans without PTSD. Veterans with PTSD and their spouses also reported significantly greater family violence. Using a similar rating scale, Parson and colleagues reported that children of veterans with PTSD showed more behavior problems than children of veterans without PTSD, including aggression, delinquency, hyperactivity and difficulty in developing and maintaining close friendships (Parsons, Kehle, & Owen, 1990). Although case studies describing possible "secondary traumatization" in children of Vietnam veterans with PTSD have been reported (Rosenheck & Nathan, 1985), little is known about the type and severity of psychological pathology that these children may manifest.

Multiple reports suggest that children of Nazi concentration camp survivors have fared more poorly than their counterparts. These children have been reported to suffer from problems with separation and individuation, pathological identification with their traumatized parents, depression, guilt, aggressiveness, and characteristic PTSD symptoms (Rubenstein, Cutter, & Templer, 1989–1990). Others have found no differences between children of survivors and control groups (Leon, Butcher, Kleinman, Goldberg, & Almagor, 1981; Siegal & Weinfeld, 1985). None of the studies cited controlled for the presence of PTSD among survivor parents. Up to the present it is not yet possible to determine the impact of parental PTSD on subsequent generations.

In a recent large-scale epidemiological study, survival analyses indicated that more than one-third of people with lifetime PTSD fail to recover even after many years (Kessler, Bromet, Hughes, & Nelson, 1995). These data underscore the importance of examining the long-term effects of PTSD on patients and their families.

The present study of psychological pathology in children of Vietnam veterans with PTSD included a sample of 28 fathers and 40 of their children. The purpose of the study was to describe children and their fathers' MMPI profiles, including the PTSD PK and Cook–Medley hostility scales of the MMPI, and identify any consistent patterns of relationship in profiles within or across groups.

METHOD

Patient (Father) Measures and Procedures

Male Vietnam veterans seeking care at a Veterans Affairs Medical Center PTSD Clinic voluntarily participated in this study. Information regarding race, educational status and marital status was obtained as part of the initial clinic visit. PTSD diagnosis was determined through standardized self-report measures and the PTSD component of the Structured Clinical Interview for DSM-III-R (SCID; Spitzer, Williams, Gibbon, & First, 1989) or the Clinician-Administered PTSD Scale-Diagnostic Version (CAPS-1; Blake et al., 1995). Interrater reliability for these structured interviews among clinicians on the PTSD team is .91 (range .83–.99). Combat exposure was assessed through the Combat Exposure Questionnaire (Keane et al., 1989). PTSD severity was measured using the PK scale of the MMPI (Keane, Malloy, & Fairbank, 1984) and the Mississippi Scale for combat-related PTSD (Keane, Caddell, & Taylor, 1988). In order to meet criteria for combat-related PTSD, patients were required to have had combat experience (>0) and be clinician-rated as having PTSD based on a structured clinical interview. Only fathers who reported significant and sustained contact with their children were invited to participate.

As part of their diagnostic evaluation, patients completed either the MMPI (36%) or the MMPI-2 (64%). In order to combine the two patient samples, five points were added to each MMPI-2 *t* score (Ben-Porath & Butcher, 1989).

Child Measures and Procedures

The child phase of the study consisted of a mail-out survey which included the MMPI. A mail-out method has been previously used in other clinical research studies examining MMPI profiles in nonclinical populations (Leon et al., 1981). Children also provided demographic information including age, ethnic description, education in years, marital status, endorsement of behavior problems and illegal drug use. *T* scores were calculated based on adult norms for participants 18 and older. Adolescent norms were used to calculate *t* scores for participants between 14–17 years (Archer, 1987). *T* score values were also compared to contemporary values for normal adolescents and adults (Colligan & Offord, 1989; Colligan, Osborne, Swenson, & Offord, 1984). Profiles across the sample were combined based on Williams and Butcher's (1989) finding that scale descriptors from adult apply equally well for interpretation of adolescent scores. The MMPI PTSD subscale and the MMPI-2 PK Scale (Keane et al., 1984) were scored to assess the presence and magnitude of PTSD symptoms. The PTSD and PK scales only vary on two items. PK cut-off scores developed for civilian populations (≥ 19) were used (Koretzky & Peck, 1990). The Cook–Medley hostility Scale from the MMPI was also scored (Cook & Medley, 1954). There is no item overlap between the PTSD/PK scales and the Cook–Medley scale.

Subjects

Twenty-eight male Vietnam combat veterans who met diagnostic criteria for lifetime and current PTSD and 40 of their children consented to participate in this study. Only children 14 years and older were recruited because of the age required for a valid MMPI. A total of 31 fathers and 44 children consented to participate, resulting in a 91% participation rate.

Forty children (half male, half female) participated. Their mean age was 20.1 ($SD = 4.8$, range 14–35) and their mean education was 11 years ($SD = 1.6$, range 8–15). Seventy-five percent were of European descent, 21% of African descent, and 4% were of Native American descent. Twenty-five percent were married. Thirty-five percent reported past behavior problems, and 15% reported past difficulty with violence. Violent episodes cited included “fights” and assault on a police officer.

The veterans in the sample had a mean age of 47 years ($SD = 2.9$). Race representation was equal to that of the child sample. The mean socioeconomic status, based on the Hollingshead Index (Hollingshead & Redlich, 1958), was lower middle class ($M = 48$) with a range of lower middle class to upper middle class (range 28–70). Most fathers had completed high school ($M = 12.4$; $SD = 1.6$). Combat exposure for the group was reported to be moderate to heavy ($M = 29.3$; $SD = 8.7$). These veterans endorsed a high number of PTSD symptoms on both the Mississippi scale ($M = 134.0$; $SD = 16.8$) and on the MMPI PTSD subscale ($M = 39.6$; $SD = 8.0$) and the PK MMPI-2 subscale ($M = 35.7$; $SD = 8.7$).

RESULTS

The mean validity and clinical *t* scale scores for children and their fathers are presented in Table 1. No child MMPI profile was considered to be invalid. Seventy-eight percent of children had at least one clinically elevated scale. Using contemporary normative values for normal male and female adolescents and adults (Colligan & Offord, 1989; Colligan et al., 1984), 65% of the children had at least one clinically elevated scale (i.e., $\geq SD$ above mean value). The

Table 1. MMPI Scale T Score Means and Standard Deviations for Children and Fathers

MMPI Scale	Children			Fathers		
	M	SD	Range	M	SD	Range
Lie	49.4	6.7	38–63	54.0	8.5	36–75
F	60.5	12.4	37–92	100.7	18.9	63–125
K	47.1	8.6	31–70	39.8	4.8	35–55
Hypochondriasis	63.4	15.3	44–104	89.3	11.9	69–116
Depression	58.0	14.1	32–96	93.1	12.2	71–120
Hysteria	55.0	12.0	35–78	80.6	12.2	62–101
Psychopathic Deviate	65.0	13.3	39–88	82.0	12.2	55–104
Masculinity-Femininity	55.3	10.1	38–79	55.4	8.2	35–69
Paranoia	58.5	12.8	35–97	88.3	16.7	59–117
Psychasthenia	65.7	11.5	44–89	90.3	13.6	58–112
Schizophrenia	66.4	12.9	43–103	100.8	14.3	65–119
Hypomania	65.8	11.3	38–93	67.4	13.6	48–103
Social Introversion	56.8	11.6	30–79	79.1	7.9	60–96

most frequently elevated clinical scales (using contemporary adolescent and adults values) for children were Hs (30%), D (20%), Pd (25%), Pt (32%), Sc (22%), and Ma (25%). Mean raw PK scale scores were 17.9 ($SD = 9.9$; range 1–41) and mean hostility scale scores were 27.5 ($SD = 5.9$; range 17–41). No significant gender differences were found across clinical scale scores within the child sample (t test). T test did indicate that children with higher PK scale scores (>19) scored significantly higher on the Cook–Medley hostility scale ($p = .0004$).

In examining the clinical scales for each father, the most frequently elevated scales were Hs (90%), D (90%), and Sc (96%). Other clinically elevated scales included Hy (64%), Pd (68%), Pa (82%), Pt (82%), Ma (25%), and Si (79%). Mean hostility scale scores using the short form of the Cook–Medley were 20, indicating a value which is two standard deviations above age-matched community samples (Barefoot et al., 1991) and which is comparable to previous reports of hostility in this population (Beckham et al., 1996).

To evaluate whether fathers and their children's profile patterns were similar, correlation coefficients between mean parent and child t scores for each validity and clinical scale were calculated. None were significant.

DISCUSSION

The results of this study suggested that there was no modal MMPI profile for children of Vietnam veterans with PTSD. However, there were significant clinical elevations in the majority of the children, suggesting that there may be substantial psychological dysfunction among them. Furthermore, the frequency of the elevated clinical scales for these children (Hs, D, Pd, Pt, Sc, and Ma) suggests that these children in this sample have difficulties with authority, and suffer from emotional distress, depression, anger, excessive energy and inhibited interpersonal relationships. In addition, 83% reported elevated Cook–Medley scores as compared to national norms (Barefoot et al., 1991). This reinforces the clinical scale finding that these children experience significant problems with anger and hostility. Forty percent of children reported illegal drug use, 35% reported behavior problems and 15% reported a history of violent behavior. Forty-five percent of the child sample reported significant PTSD symptoms on the PTSD/PK subscales. Children who endorsed a high number of PTSD symptoms also reported increased hostility.

The finding that there was no prototypical MMPI profile for fathers is consistent with previous studies suggesting that no modal MMPI profile characterizing PTSD has been identified (Litz, Penk, Gerardi, & Keane, 1988). The frequency of high points for the fathers (872 or 28 code type) is consistent with some previous reports (Keane, Wolfe, & Taylor, 1987; Munley, Bains, Bloem, & Busby, 1995), and indicates that emotional and social alienation, depression, and anxiety are common problems for these patients.

The results of this study are descriptive and there are important limitations associated with the study design. There was no face-to-face contact with children, and therefore all limitations associated with mail surveys and self-report instruments apply to these results (e.g., nonstandard testing conditions, self-report bias). The sample size was small and, therefore, the lack of gender differences within the child sample and lack of cross-profile results between children and their fathers may simply be due to Type II error. The preliminary results reported here are further limited to children of help-seeking Vietnam combat veterans with chronic and severe PTSD. These results cannot be generalized to children of other individuals with PTSD. It is impossible to accurately interpret the meaning of the PTSD/PK scale results for the children without clinician interviews that include trauma histories for each individual. The finding that 45% of this sample reported significant PTSD/PK elevations may be important, but it will be necessary for future research to evaluate the role of trauma exposure, trauma content and resulting reactions in these children.

It may also be useful in future studies to evaluate additional patient and child variables which may contribute to child dysfunction. For example, because violence or the threat of violence has been documented as a problem in families of veterans with PTSD (Jordan et al., 1992) and previous violence exhibited by children was associated with greater psychopathology, these variables should be included and explored in more detail in future evaluations of children and families. Likewise, parental and child substance abuse patterns should be fully explored. It will also be important to examine how parental dysfunction might contribute to child dysfunction. In previous prospective work with families evaluating adolescent substance use, hostility, and lack of warmth on the part of the parents contributed to increased substance use, delinquency and poorer coping styles in adolescents (Johnson & Pandina, 1991). By carefully evaluating the interaction between father and child over time, it may be possible to prevent or ameliorate negative effects of having a parent with chronic and severe PTSD.

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