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Brief Report

Partners' Ratings of Combat Veterans' PTSD Symptomatology

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The current study examined the concordance of combat veterans' scores on the Mississippi Scale for Combat-Related PTSD, with scores on a parallel version of that instrument completed by partners to assess veterans' symptoms. Further, the study examined the impact of quality of the marital relationship on score concordance. Bivariate and multiple regression were used with a sample of 466 veteran-partner dyads obtained from the National Vietnam Veterans Readjustment Study. There was moderate agreement in symptom reporting between veterans and their partners and little evidence to suggest that the quality of the relationship impacted upon the association between partner and veteran scores.

KEY WORDS: Vietnam veterans; couples; Mississippi Scale; score concordance; PTSD.

A number of researchers have argued that the assessment of posttraumatic stress disorder (PTSD) is best achieved when multiple methods and multiple sources are used (e.g., Keane, Wolfe, & Taylor, 1987; Litz & Weathers, 1994; Malloy, Fairbank, & Keane, 1983). In addition to structured interviews, self-report scales, and psychophysiological devices aimed at direct assessment of the victim of a traumatic event, there has been some work to examine the utility of collateral

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reports of PTSD symptoms. One avenue of recent interest has been the extent to which spouses are able to provide accurate and clinically meaningful observations of the PTSD symptomatology of their partners. Spouses are likely to have observed the behaviors of their partners in varying contexts and on repeated occasions and may be able to offer useful evaluations when the client or patient is reluctant or incapable of reporting symptoms; their reports are also important as confirmation of symptomatology (Gallagher, Riggs, Byrne, & Weathers, 1998; Niles, Herman, Segura-Schultz, Joaquim, & Litz, 1993). In this regard, Niles et al. (1993) examined the concordance of 59 treatment-seeking male combat veterans' scores on the Mississippi Scale for Combat-Related PTSD (Keane, Caddell, & Taylor, 1988) with scores on a parallel version of that instrument on which partners reported veterans' symptoms. Correlations between self-report and partner-report for six rationally derived subscale scores and the total Mississippi Scale score were examined. Four of the subscales corresponded to DSM-IV-based symptom categories of reexperiencing, numbing, avoidance, and hyperarousal, and the remaining two, guilt and suicidality, reflected associated features of PTSD. Niles et al. reported veteran-partner correlations ranging from −.02 (for their three-item guilt subscale) to .66 (for the nine-item hyperarousal subscale); the correlation between total scores was .54.

Gallagher et al. (1998) used the PTSD Symptom Checklist (Weathers, Litz, Herman, Huska, & Keane, 1993) to examine concordance in a mixed treatment-seeking and community sample of 50 male veterans and their female partners. These researchers found moderate levels of agreement within couples for the presence of PTSD symptoms in the veteran. For the PTSD symptom category of reexperiencing, Kappa = .42; for avoidance and numbing, Kappa = .45; for hyperarousal, Kappa = .39; and for overall diagnosis, Kappa = .36. Gallagher et al. also postulated that agreement would be a function of the degree to which the veteran verbally disclosed about PTSD symptoms, but this hypothesis was not supported.

The present study extends the work of Niles et al. (1993) and Gallagher et al. (1998) to examine concordance in the assessment of veteran PTSD symptoms between veteran and partner. At the simplest level, we were interested in bivariate relationships. Like Gallagher et al., we also examined a factor that may account for degree of concordance: in this case, the quality of the marital relationship. We wished to determine if the association between the partner's report of the veteran's symptoms and the veteran's self-reported symptoms depends upon the quality of their marital relationship. Like Niles et al., we used the Mississippi Scale to assess PTSD, and like Niles et al. and Gallagher et al., we examined both total scores and separate symptom categories. Expanding on previous studies, the current study (a) examined whether the gender of the veteran affected score concordance, (b) used a relatively large community sample, and (c) used a more powerful methodology (moderated multiple regression) for our analyses. Both

the assessments of symptomatology and the measures of quality of the marital relationship were treated as continuous variables.

Method

Data Source and Sample

Archival data were obtained from the National Vietnam Veterans Readjustment Study (NVVRS; Kulka et al., 1990), a Congressionally mandated research program that examined the extent to which Vietnam veterans were suffering from postwar adjustment problems, particularly PTSD. Veterans were interviewed, mostly in their homes, for an average of over 5 hr to obtain information on an array of variables related to their premilitary, war-zone, and postwar experiences, conditions, and psychosocial status. The present sample consisted of all persons who participated in the NVVRS's Family Interview Component: 466 veteran-partner dyads, 376 of whom were male veterans and their female partners and 90 of whom were female veterans and their male partners. Partners supplied data in separate interviews lasting about 1 hr. Of the 466 families, 365 had one or more children in the home. Families were selected into this component of the NVVRS if the veteran had a high probability of PTSD (31% of the families), scored below a critical cut-point on PTSD but still reported high levels of combat exposure (another 21%) or nonspecific distress (16%). The remaining 32% of the families formed a low risk comparison or "control" subgroup. With regard to race and ethnicity, the NVVRS researchers were particularly attuned to achieving sufficient numbers of minority male veterans. The racial or ethnic identity for male veterans whose spouses provided data for the Family Interview was distributed as follows: African American, 24%; Hispanic American, 29%; and White/other, 47%. Not surprisingly, the spouses of these veterans had a fairly comparable distribution: African American, 23%; Hispanic American, 22%; and White/other, 55%. Virtually all of the female veterans and their partners in the Family Interview Component were European Americans. Detailed descriptions of the sample are in the initial report of the NVVRS (Kulka et al.) and the later published work of Jordan et al. (1992). Although the data are over ten years old (they were generated in the mid- to late-1980s), they appear well-suited to examine relationships among the present study's constructs of interest.

Measures

The veteran's self-report of PTSD was assessed using the original 35-item form of the Mississippi Scale (Keane et al., 1988). This instrument has a 5-point Likert format and assesses the criteria for PTSD (reexperiencing, avoidance and

numbing, and hyperarousal), as well as associated features of PTSD (substance abuse, depression, and suicidality). The reliability and validity of the Mississippi Scale are well documented. Partner's report of veteran PTSD was accomplished with a parallel version of this instrument, with slight changes in instructions and wording. In the present study, coefficient alpha was .94 for both veteran and partner instruments.

The measure of marital relationship quality was developed by Jordan et al. (1992) as a composite of 16 items drawn from several sources, including Spanier's (1976) Dyadic Adjustment Scale and Dohrenwend's (1982) Marital Dissatisfaction Scale from the Psychiatric Epidemiological Research Interview. Items in this marital relationship quality measure represent a broad range of relationship adjustment difficulties, including general dissatisfaction and unhappiness with the relationship, lack of companionship, day-to-day problems getting along, and frequency of hostility and discord. Sample items include: "In general, how often do you think that things between you and your partner are going well?"; "During the past year, how often have you felt uncomfortable with your husband/wife/partner?"; "How often do you and your partner quarrel?" Jordan et al. reported a coefficient alpha of .92 for male veterans and .94 for their female partners, and their principal components analysis resulted in all items loading on a single component. In addition to this evidence for the internal consistency of the measure, Jordan et al. reported that relationship quality scores of both PTSD-positive veterans and their partners were significantly higher than relationship quality scores of their respective PTSD-negative group. In the present study, an average item score was computed for both the veteran and the partner; higher values are indicative of more marital problems or a lower level of relationship quality.

Analytic Procedures

First, Pearson product-moment correlations among the variables in the study were obtained. Next, a series of five hierarchical moderated multiple regression analyses was undertaken, one in which the dependent variable was the veteran's total Mississippi Scale score, and four others in which the veteran's separate symptom category scores served as dependent variables. These categories, labeled "reexperiencing and situational avoidance," "withdrawal and numbing," "arousal and lack of control," and "guilt and suicidality" were constructed and supported by King and King (1994) in their confirmatory factor analysis of the Mississippi Scale. For each multiple regression analysis, three two-way interaction terms and one three-way interaction term were computed: the product of the veteran's marital relationship quality and the partner's Mississippi Scale ratings, the product of the partner's marital relationship quality and the partner's Mississippi Scale ratings, the product of the veteran's marital relationship quality and the partner's marital relationship quality, and the triple product of the veteran's marital relationship

quality, the partner's marital relationship quality, and the partner's Mississippi Scale ratings. At the first step of each hierarchical analysis, main effects were simultaneously entered, with veteran's gender serving as a covariate. At the second step, the four interaction terms were entered to determine if marital relationship quality (both veteran and partner variables) moderated the association between veteran's self-reported Mississippi Scale score and partner's Mississippi Scale ratings of the veteran. Additionally, a set of terms intended to assess the moderating effect of veteran's gender, formed by obtaining the product of veteran's gender with each of the other main effects and interactions, was subsequently entered into each equation at the third step. The evaluation of the significance of this set represented a test of whether findings might differ as a function of veteran's gender (Cohen & Cohen, 1983). For all analyses, a protected t (Cohen & Cohen, 1983) was employed to control for excessive Type I error.

Results and Discussion

With regard to the correlations among variables, the bivariate relationships between veteran's self-reported Mississippi Scale scores and the corresponding ratings supplied by the partner are of particular interest. The following Pearson product-moment correlations were obtained: for total score, $r(464) = .61, p < .001$; for reexperiencing and situational avoidance, $r(464) = .61, p < .001$; for withdrawal and numbing, $r(464) = .51, p < .001$; for arousal and lack of control, $r(464) = .53, p < .001$; and for guilt and suicidality, $r(464) = .33, p < .001$. On the whole, there was a fair amount of agreement in symptom reporting between veterans and their partners. The correlations between veteran's marital relationship quality and total Mississippi Scale scores provided separately by the veteran and the partner were $r(462) = .45, p < .001$, and $r(462) = .40, p < .001$, respectively; that is, greater symptomatology was associated with poorer relationship quality. The correlations between partner's marital relationship quality and total Mississippi Scale scores provided by the veteran and the partner were $r(462) = .31, p < .001$, and $r(462) = .59, p < .001$, respectively, again, greater symptomatology associated with poorer relationship quality. The correlation between veteran's marital relationship quality and partner's marital relationship quality was $r(462) = .53$, $p < .001$.

The results of the hierarchical moderated multiple regression analyses are displayed in Table 1. There was no evidence for interactions with veteran's gender. Hence, Table 1 provides results only for variables entered at the first and second steps of each analysis. As shown, a robust and consistent partial main effect for veteran's gender was evident, with male veterans reporting more symptoms than female veterans. Likewise, the partial effect of partner's Mississippi Scale ratings was consistently significant for all five analyses. Also, the partial effect of marital relationship quality—both as reported by the veteran and as reported by the

Table 1. Results of Hierarchical Moderated Multiple Regression Analyses

Variables	#1 DV = Veteran's Total MS			#2 DV = Veteran's Reexperiencing & Situational Avoidance			#3 DV = Veteran's Withdrawl & Numbing			#4 DV = Veteran's Arousal & Lack of Control			#5 DV = Veteran's Guilt & Suicidality		
	B	*t*	df	B	*t*	df	B	*t*	df	B	*t*	df	B	*t*	df
Step 1															
Veteran's gender	−.28	−4.67	459	−.30	−4.35	459	−.33	−4.27	459	−.28	−4.17	459	−.35	−5.33	459
Veteran's marital relationship quality (VMRQ)	.31	8.28	459	.27	6.20	459	.40	8.36	459	.34	7.93	459	.25	5.89	459
Partner's marital relationship quality (PMRQ)	−.18	−4.85	459	−.11	−2.86	459	−.13	−2.63	459	−.18	−4.26	459	−.05	−1.39	459
Partner's MS (PMS)	.60	13.08	459	.54	14.18	459	.43	8.18	459	.52	10.89	4.59	.25	6.13	459
Step 2															
VMRQ × PMS	.05	.34	455	.07	.52	455	.16	1.00	455	−.05	−.34	455	.38	2.42	455
PMRQ × PMS	.10	.89	455	.07	.63	455	.23	1.65	455	−.04	−.32	455	.30	2.71	455
VMRQ × PMRQ	.04	.33	455	.08	.64	455	.02	.12	455	.01	−.11	455	.15	1.59	455
VMRQ × PMRQ × PMS	−.03	−.54	455	−.04	−.89	455	−.05	.37	455	.03	.49	455	−.10	−2.10	455
R^2		.48			.44			.40			.40			.25	

Note. MS = Mississippi Scale. At Step 1, all main effects were significant, $p < .01$, with the exception of the partial effect of partner's marital relationship quality on veteran's guilt and suicidality score. At Step 2, significant interactions were found only for veteran's guilt and suicidality as the dependent variable, with significant partial effects attributed to the VMRQ × PMS, PMRQ × PMS, and VMRQ × PMRQ × PMS interactions (all $p < .05$).

partner—was significant in all but one case: the partial effect of partner's marital relationship quality on veteran's self-reported guilt and suicidality symptoms. Interestingly, in all five multiple regression analyses, the negative partial coefficients for the partner's marital relationship quality suggest suppression, since the bivariate correlations between partner's marital relationship quality and veteran's self-reported Mississippi Scale scores were all positive. A possible interpretation of this suppression effect is that the partner's assessment of relationship quality is confounded with his or her assessment of the veteran's symptomatology and, after controlling for this latter effect, the direction of the relationship between partner's marital relationship quality and veteran's self-reported Mississippi Scale scores shifts.

As also shown in Table 1, interactions involving marital relationship quality and partner's Mississippi Scale ratings were supported only for the guilt and suicidality dependent variable. The increment in accounted-for variance by the set of four interaction terms entered at the second step (approximately 2%) was significant, $F(4, 448) = 3.14, p < .05$. The important interaction is the three-way interaction, and its significance suggests that the partner's guilt and suicidality ratings are a joint function of both the veteran's and partner's marital relationship quality scores. The pattern of the interaction is such that, for this symptom domain, the association between partner's ratings and veteran's self-ratings increases as the quality of the marital relationship decreases. The association becomes strong and positive as both members of the dyad perceive lower levels of relationship quality or more marital problems. It is quite weak when both members of the dyad report a higher-quality marital relationship. This finding indicates the possibility that a troubled marital relationship makes the partner's assessment of the veteran's status more consistent with the veteran's assessment; either the veteran is more revealing of symptoms or the spouse is more sensitive to those symptoms. Please note that the interaction accounted for only a small amount of variance in the veteran's guilt and suicidality score, and that guilt and suicidality are currently cast as associated features of PTSD (DSM-IV; American Psychiatric Association, 1994).

All in all, this study found that partner's assessments of a veteran's PTSD symptoms were moderately associated with the veteran's self-reports. In conclusion, it appears that the quality of the marital relationship did not appreciably affect the concordance between veteran's self-ratings of PTSD symptoms and the partner's ratings of the veteran's symptoms.

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