

Relationship Adjustment, PTSD Symptoms, and Treatment Utilization Among Coupled National Guard Soldiers Deployed to Iraq

Laura A. Meis

Center for Chronic Disease Outcomes Research,
Minneapolis VA Health Care System, and University of
Minnesota Medical School

Robin A. Barry

Minneapolis VA Health Care System and University of
Iowa

Shannon M. Kehle

Center for Chronic Disease Outcomes Research,
Minneapolis VA Health Care System, and University of
Minnesota Medical School

Christopher R. Erbes

Minneapolis VA Health Care System and University of
Minnesota Medical School

Melissa A. Polusny

Center for Chronic Disease Outcomes Research, Minneapolis VA Health Care System,
and University of Minnesota Medical School

Although combat-related posttraumatic stress disorder (PTSD) is associated with considerable impairment in relationship adjustment, research has yet to investigate how PTSD symptoms and relationship distress uniquely and jointly predict utilization of a range of mental health services. The present study sought to examine these issues utilizing a longitudinal sample of National Guard soldiers surveyed 2–3 months following return from deployment to Iraq and again 12 months later ($N = 223$). Results indicated that PTSD symptom severity, but not relationship adjustment, uniquely predicted greater odds of utilizing individual-oriented mental health services. A significant interaction was found indicating associations between PTSD symptoms and the odds of using services were increased when soldiers reported greater relationship adjustment. For utilization of family-oriented care, greater relationship distress was significantly correlated with greater odds of using services, but associations with PTSD symptoms were nonsignificant. The association between relationship distress and utilization of family-oriented services did not vary significantly with severity of PTSD symptoms. Results suggest supportive intimate relationships facilitate mental health treatment utilization for soldiers with PTSD symptoms.

Keywords: OEF/OIF soldiers, PTSD, relationship adjustment, mental health service utilization

Soldiers returning from Afghanistan (Operation Enduring Freedom, OEF) and Iraq (Operation Iraqi Freedom; OIF) report increasing problems in their intimate relationships and symptoms of Posttraumatic Stress Disorder (PTSD).

More than 75% of returning soldiers referred for VA behavioral health evaluations endorsed difficulties in their romantic relationships or with their children, and greater than 50% endorsed mild to moderate intimate partner vio-

Laura A. Meis and Shannon M. Kehle, Center for Chronic Disease Outcomes Research, Minneapolis VA Health Care System, and University of Minnesota Medical School; Robin A. Barry, Mental Health Team L, Minneapolis VA Health Care System, Minneapolis, Minnesota, and Department of Psychology, University of Iowa; Christopher R. Erbes, Mental Health Team L, Minneapolis VA Health Care System, Minneapolis, Minnesota, and Department of Psychiatry, University of Minnesota Medical School; Melissa A. Polusny, Center for Chronic Disease Outcomes Research, Mental Health Team L, Minneapolis VA Health Care System, Minneapolis, Minnesota, and Department of Psychiatry, University of Minnesota Medical School.

Robin A. Barry is now at the Department of Psychology, University of Maryland, Baltimore County.

This research was supported by grants from the Minnesota Medical Foundation (Grant 3662-9227-06) and Department of Defense Con-

gressionally Directed Peer Reviewed Medical Research Program (W81XWH-07-2-0033). The authors would like to thank MAJ Cora Courage and COL Michael Rath for their assistance with subject recruitment for this project. We would also like to thank Paul Thuras, Madhavi Reddy, and numerous research assistants who have volunteered on the RINGS Study for their assistance with this project. The views expressed in this article are those of the authors and do not reflect the official policy or position of the Department of Veterans Affairs, Department of the Army, or the Department of Defense. This material is the result of work supported with resources and the use of facilities at the Minneapolis VA Health Care System, Minneapolis, MN.

Correspondence concerning this article should be addressed to Christopher R. Erbes, Mental Health Team L, Minneapolis VA Health Care System, One Veterans Drive (116A6), Minneapolis, MN 55417. E-mail: Christopher.Erbes@va.gov

lence (Sayers, Farrow, Ross, & Oslin, 2009). Additionally, early estimates indicate 12 to 20% of OEF/OIF military personnel screen positive for PTSD (Hoge, Castro, Messer, McGerk, Cotting, & Koffman, 2004; Schell & Marshall, 2008). Among OEF/OIF deployed soldiers, preliminary research ties severity of PTSD symptoms to relationship difficulties (Nelson Goff, Crow, Reisbig, & Hamilton, 2007; Renshaw, Rodrigues, & Jones, 2008), echoing research among previous generations of combat veterans.

However, early research suggests limited mental health service utilization among those in need. Among OEF/OIF soldiers screening positive for mental health problems, only 23 to 40 percent sought mental health care (Hoge et al., 2004). Among the cohort of National Guard soldiers from which the present sample was drawn, over 50% of those with probable PTSD or depression had yet to obtain mental health services 2–3 months following return from deployment (Kehle et al., 2010). Identifying predictors of mental health service receipt among OEF/OIF veterans can aid in identifying motivations for obtaining services, tailoring treatment development efforts, and outreach efforts to improve utilization. Despite high rates of co-occurrence of PTSD and relationship problems, we know little about how these problems independently and conjointly influence the utilization of services. The present study seeks to examine the role of PTSD symptoms, relationship adjustment, and their interplay in predicting mental health service use generally and couples and family treatment specifically.

Predicting Mental Health Service Utilization

Andersen's sociobehavioral model (Andersen, 1995), a popular model for understanding health service utilization, considers three main foci: 1) predispositions toward use of services, 2) "enabling" factors that facilitate or impede use of services, and 3) degree of need for services. Within this model, psychiatric symptoms (i.e., symptoms of PTSD) serve as a need factor comprised of how the individual views his/her own health, level of functioning, and magnitude of symptoms or problems (Andersen, 1995). Previous research has demonstrated robust associations between PTSD symptoms and increased mental health service utilization among veterans with health problems (Elhai, Richardson, & Pedlar, 2007), National Guard soldiers (Kehle et al., 2010), Vietnam War veterans (Rosenheck & Fontana, 1995), community participants living near the World Trade Center during attacks (Boscarino, Galea, Ahern, Resnick, & Vlahov, 2002), and sexual assault victims (Ullman & Brecklin, 2002). Consequently, associations between PTSD symptoms and use of services would likely persist after considering relationship adjustment's role.

Within Andersen's (1995) model, relationship family characteristics are traditionally considered factors that promote or impede health service utilization. Research empirically evaluating how intimate relationships facilitate mental health service use is underdeveloped and existing findings are mixed. Positive associations have been found between being married and increased use (Boscarino et al., 2002; Fikretoglu, Brunet, Schmitz, Guay, & Pedlar, 2006;

Maguen et al., 2007; Norris, Kaniasty, & Scheer, 1990). Yet, being single has also been linked to increased use of services (Williams, Weiss, Edens, Johnson, & Thornby, 1998), as has being divorced, or separated (Fikretoglu et al., 2006; Koenen, Goodwin, Struening, Hellman, & Guardino, 2003). Lastly, other research has failed to find significant associations between marital status and health service utilization (Elhai et al., 2007; Sayer, Clothier, Spont, & Nelson, 2007; Ullman & Brecklin, 2002). One explanation for these mixed findings may be a failure to examine the role of relationship adjustment or quality on treatment use. For couple therapy use, Doss, Rhodes, Stanley, and Markman (2009) found lower relationship satisfaction was linked to greater use of couple therapy, suggesting those in more conflictual or distant relationships are more likely to use couple therapy. The same may be true for use of mental health services generally. Intimate partners form adults' primary sources of support (Beach, Martin, Blum, & Roman, 1993). Those in more distressed relationships may be more likely to obtain treatment in any form to address the personal distress generated from loss of support, relationship conflict, and relationship dissatisfaction. As a result, within Andersen's (1995) model, poor relationship adjustment could act as a need factor, providing additional motivation to obtain services. Consequently, we expected poorer relationship adjustment to predict utilization.

While robust links between PTSD and relationship adjustment have been established (Galovski & Lyons, 2004), how PTSD and relationship adjustment interact to predict general treatment use remains unknown. If poor relationship adjustment functions as a need factor, those experiencing severe symptoms of PTSD may be even more likely to seek services when experiencing relationship distress, due to concerns that PTSD symptoms are jeopardizing relationship stability or enhanced urgency for services stimulated by experiencing pronounced distress in multiple life spheres (i.e., intrapersonally and within their relationship). Consequently, we examined how poorer relationship adjustment would strengthen the association between PTSD symptom severity and use of services.

Predicting Family-Centered Service Utilization

Promising treatments are under development to address PTSD symptoms through couple therapy (e.g., Monson, Schnurr, Stevens, & Guthrie, 2004; Sautter, Glynn, Thompson, Franklin, & Han, 2009) and veterans express interest in greater family involvement in their care for PTSD (Batten, Drapalski, Decker, DeViva, Morris, & Mann, 2009). However, research examining predictors of use specific to family-centered services is limited. Among returning veterans, Erbes, Westermeyer, Engdahl, and Johnsen (2007) found positive PTSD and hazardous drinking screens failed to predict use of couple/family treatment. Among non-military samples, lower relationship satisfaction, greater negative communication, and depression were positively linked to couple therapy use (Doss et al., 2009). With couple/family treatment, one would expect relationship distress to directly predict greater use of family-oriented care

due to greater perceived need to specifically address family-oriented issues. We expect these associations would likely persist beyond symptoms of individual distress (i.e., PTSD symptom severity). In light of the high co-occurrence of PTSD and relationship problems and research tying PTSD symptoms to greater general utilization, PTSD symptoms may also contribute independently to greater utilization of family-oriented services. Also, PTSD symptoms in combination with poorer relationship adjustment may enhance perceived need for services generally, including for family-services. Consequently, the link between poorer relationship adjustment and family-oriented services may strengthen with increasing symptoms of PTSD (i.e., considering PTSD as a facilitating factor).

For the present study, we employed a longitudinal sample of coupled National Guard soldiers deployed to OIF to examine how relationship adjustment, PTSD symptoms, and their interaction, predicted individual-oriented mental health treatment utilization and couple/family services over the following 12 months. For general utilization of mental health services, we anticipated 1) PTSD symptom severity would predict greater odds of use, above and beyond relationship adjustment; 2) poorer relationship adjustment would predict greater odds of use, above and beyond PTSD symptoms; and 3) poorer relationship adjustment would strengthen ties between PTSD symptoms and general treatment use (moderation). For couple/family therapy, we anticipated 1) poorer relationship adjustment would independently predict greater odds of use, above and beyond PTSD symptoms; 2) PTSD symptoms would predict greater odds of family/couple service use, above and beyond relationship adjustment; and 3) PTSD symptoms would amplify associations between poorer relationship adjustment and use of family-oriented care (moderation).

Method

Participants and Procedures

Participants were drawn from a larger longitudinal project examining risk and resilience among 522 Minnesota NG soldiers deployed to OIF (Ferrier-Auerbach et al., 2009). Approximately 2–3 months (Time 1) after NG soldiers returned from OIF, participants were mailed self-report surveys using multiple mailings and a \$50 incentive. Eighty-one percent ($N = 424$) responded. Responders and non-responders did not differ on PTSD symptoms, rank, gender, or protective/vulnerability factors. Non-completers were less educated, younger, more likely unmarried, and more likely of ethnic minority status than completers (Polusny et al., 2009). Participants were included in the present set of analyses if at Time 1 they were married or involved in a romantic relationship lasting for more than 6 months ($N = 281$) and completed Time 2 surveys. Time 2 surveys were administered using the same set of procedures 12 months later. Of the eligible Time 1 participants, 57 did not complete Time 2 assessments and one did not complete Time 1 relationship adjustment measures, resulting in a total sample of 223 (79.4% of eligible Time 1 participants). Time

2 study responders and nonresponders did not significantly differ on age, gender, ethnicity, or Time 1 PTSD symptoms, depression, or relationship adjustment. Time 2 responders were more likely married (65.6% vs. 79.7%), $\chi^2(1, N = 278) = 5.32, p = .021$, and less likely enlisted (83.1% vs. 93.5%), $\chi^2(1, N = 281) = 4.23, p = .040$, than the nonresponders.

For the present study, we examined how PTSD symptoms and relationship functioning at Time 1 predicted participant report of treatment utilization over the following year, assessed at Time 2. This design prevents bias due to including only those in relationships which remain intact. However, most relationships were stable. At Time 2, only 4 people were no longer in a romantic relationship (1.8%) and 13 (5.8%) were in a new dating relationship. The average age of the participants was 33.74 years old ($SD = 8.66$), 89.7% were male, 93.7% identified as Caucasian, 88.1% had greater than a high school education, and 83.4% were enlisted. At Time 1, 97.3% worked for pay, 3.2% were students, 1.4% were unemployed, 88.7% were living with a spouse or intimate partner, and 50.2% had children living at home. At Time 2, 79.8% worked for pay, 20.2% were students, 10.8% were unemployed, and 93.7% were living with a spouse or intimate partner. Most participants reported combat exposure, with 90% reporting engagement in combat patrol/missions and 93.2% receiving hostile incoming fire. Study procedures were approved by National Guard command and the Institutional Review Boards of the Minneapolis VA Health Care System, University of Minnesota, and Department of Defense. Informed consent was obtained prior to enrollment.

Materials

Relationship adjustment. Relationship adjustment was measured with three separate but correlated indicators. First, the Abbreviated Dyadic Adjustment Scale (ADAS; Sharpley & Rogers, 1984) was administered. The ADAS is a 7-item version of the widely used Dyadic Adjustment Scale (Spanier, 1976), assessing frequency of communication, shared activities, and agreement in life philosophy, aims, and time spent together. The ADAS correlates with other measures of couple functioning, beliefs, and status (Hunsley, Pinsent, Lefebvre, James-Tanner, & Vito, 1995; present sample, $\alpha = .88$). Two additional indices of relationship adjustment were drawn from the Navy Quality of Life Survey (NQOLS; Wilcove, 2005). The 8-item NQOLS Marriage/Intimate Relationship Satisfaction scale (NQOLS-MIRS) employs a 7-point Likert scale to assess relationship adjustment through participants' satisfaction with intimacy, communication, support, conflict resolution, physical closeness, respect, and time spent separate from one's partner ($\alpha = .92$). Lastly, participants' completed a single, 7-point, Likert scale item (NQOLS-SAT), evaluating relationship satisfaction: "How satisfied are you OVERALL in each of these areas: . . . Marriage/Intimate Relationship?" Similarly worded global items are found to be the most effective scale items in discriminating distressed from nondistressed couples and to provide large amounts of information in the

assessment of relationship satisfaction (Sabourin, Valois, & Lussier, 2005; Funk & Rogge, 2007).

PTSD symptoms. The PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993) is a widely used 17-item Likert-format measure assessing severity of PTSD through summing ratings for each of the 17 symptoms of PTSD. The PCL correlates with other self-report measures of PTSD symptoms and PTSD diagnosis obtained from structured interviews (e.g., Blanchard, Jones-Alexander, Buckley, & Forneris, 1996; $\alpha = .94$).

Mental health service utilization. Items were adapted from earlier work with OEF/OIF veterans (Erbes et al., 2007). At Time 2, soldiers were asked about using various types of mental health services, "In the past year . . ." (i.e., since the Time 1 survey) in response to the question stem, ". . . have you received any of the following mental health services?" Items included, 1) "medications, such as antidepressants," 2) "one to one counseling," 3) "group counseling," 4) "marriage or family counseling," and 5) "chemical dependency treatment."

Analyses

To reduce the number of comparisons and create a more reliable index of relationship adjustment we created a composite index of relationship adjustment indices by averaging participants' standardized scores on each of the three highly intercorrelated relationship indices: ADAS, NQOLS-MIRS, and the NQOLS-SAT ($r_s = .70-.81$). Two hierarchical logistic regression analyses were then performed to examine how symptoms of PTSD and relationship adjustment assessed at Time 1 independently and jointly predicted individual-oriented mental health treatment utilization (i.e., psychiatric medication, individual counseling, group counseling, chemical dependency treatment) and use of any couple/family services over the following 12 months (assessed at Time 2). In each analysis, main effects were entered first followed by product interaction terms at the second step, created by grand mean centering then multiplying PTSD symptom severity and relationship adjustment, consistent with recommendations by Aiken and West (1991). Interactions were probed through logistic regressions, testing 1) the relation between PTSD symptoms and individual-oriented treatment use at low, medium, and high levels of relationship adjustment, and 2) the relation between relationship adjustment and use of any couple/family services at low, medium, and high levels of PTSD symptom severity. High and low values were calculated by adding or subtracting 1 standard deviation from the centered variable (Aiken & West, 1991).

Results

Descriptive Statistics and Bivariate Associations

Sixty-four (64.1) percent reported use of any kind of individual-oriented mental health service and 28.7% reported use of couple or family therapy. PTSD symptoms (Time 1, $M = 34.88$, $SD = 13.67$) and the relationship

adjustment index were significantly associated with individual-oriented mental health service utilization in the expected direction (i.e., lower relationship adjustment and greater PTSD symptom severity was associated with greater utilization of services). While poorer relationship adjustment was associated with greater family-oriented service use, PTSD symptoms were not significantly correlated with family-oriented service use (See Table 1).

General Individual-Oriented Mental Health Service Utilization

Significant, unique associations were found between PTSD symptom severity and treatment use; higher levels of symptomatology were associated with greater odds of treatment use (See Table 2). The relationship adjustment composite was not uniquely associated with odds of treatment utilization. There was a significant interaction between PTSD symptom severity and relationship adjustment (See Figure 1) indicating the strength of the association between PTSD symptom severity and odds of using individual-oriented treatment increased with greater relationship adjustment: PTSD symptoms and treatment utilization at low (-1 SD) relationship adjustment, $b = .05$ ($SE = .02$), Wald statistic = 8.78, adjusted OR = 1.05 (95% CI = 1.02–1.09), $p = .003$; PTSD symptoms and treatment use at the average relationship adjustment, $b = .10$ ($SE = .02$), Wald statistic = 29.72, adjusted OR = 1.11 (95% CI = 1.07–1.15), $p < .001$; PTSD symptoms and treatment use at high ($+1$ SD) relationship adjustment, $b = .15$ ($SE = .03$), Wald statistic = 31.74, adjusted OR = 1.17 (95% CI = 1.11–1.23), $p < .001$. The Hosmer and Lemeshow Test was non-significant, indicating the model was a good fit for the data, $\chi^2(8, N = 223) = 8.22, p = .412$.

Couple/Family Utilization of Services

The unique association between poorer relationship adjustment and use of couple/family services was nonsignificant ($p = .067$; See Table 3 and Figure 2). Unique associ-

Table 1
Bivariate Associations

Variable	1	2	3
Time 1			
1. PTSD symptoms	—		
2. Relationship adjustment	-.39***	—	
Time 2			
3. Individual-Oriented MH services	.42**	-.21**	—
4. Couple/family MH services	.08	-.14*	.48***

Note. PTSD symptoms = total symptom severity score from the PTSD checklist; Relationship adjustment = composite of standardized scores from ADAS, NQOL-SAT, and NQOL-MIRS. Individual-Oriented MH services = Time 2 endorsement of individual-oriented mental health service use over the past 12 months; Couple/family MH services = Time 2 endorsement of any couple/family mental health service use over the past 12 months. For MH services, 1 = endorsement of attending services and 0 = did not attend services.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2
 Logistic Regression of Time 1 Predictors of Individual-Oriented Mental Health Treatment Seeking at Time 2

Variable	<i>b</i>	<i>SE</i>	Wald	<i>OR</i>	Lower 95% <i>CI</i>	Upper 95% <i>CI</i>
Step 1						
PTSD symptoms	.09***	.02	27.00	1.09	1.06	1.13
Relationship adjustment	-.18	.19	0.85	0.84	0.58	1.23
Step 2						
PTSD symptoms	.10***	.02	29.72	1.11	1.07	1.15
Relationship adjustment	-.08	.20	0.16	0.92	0.63	1.36
PTSD symptoms × relationship adjustment	.05***	.01	14.85	1.06	1.03	1.09

Note. PTSD Symptoms = PTSD symptom checklist total score; Relationship adjustment = aggregate of standardized scores from the ADAS, NQOL-SAT, and NQOL-MIRS.

*** $p < .001$.

ations between PTSD symptom severity and couple/family treatment utilization were non-significant. After entering the interaction term, associations between poorer relationship adjustment and greater odds of using couple/family services reached significance ($p = .034$). The interaction term was also nonsignificant ($p = .059$). The model was a good fit for the data, $\chi^2(8, N = 233) = 8.06, p = .427$. As the p -value fell below .06, follow-up analyses were conducted, and indicated associations between poorer relationship adjustment and utilization of couple/family treatments were only significant at low severity of PTSD symptoms, $b = -.68$ ($SE = .26$), Wald statistic = 6.79, adjusted OR = 0.51 (95% $CI = 0.30-0.845$), $p = .009$, and average levels of PTSD symptom severity, $b = -.37$ ($SE = .17$), Wald statistic = 4.47, adjusted OR = 0.69 (95% $CI = 0.99-1.04$), $p = .034$. Associations between relationship adjustment and odds of utilizing couple/family services were no longer significant at high levels PTSD symptoms, $b = -.05$ ($SE = .22$), Wald statistic = 0.05, adjusted OR = 0.95 (95% $CI = 0.62-1.46$), $p = .821$. These results should be interpreted with caution as the p -value of the overall test of the interaction did not fall below .05.

Discussion

This study examined how PTSD symptom severity, relationship adjustment, and their interplay influenced treatment utilization among National Guard soldiers deployed to OIF. PTSD symptom severity uniquely predicted greater odds of obtaining individual-oriented services, above and beyond relationship adjustment. These findings are consistent with previous research suggesting that PTSD symptom severity is associated with greater mental health service utilization (e.g., Elhai et al., 2007). Additionally, poorer relationship adjustment was correlated with increased odds of using mental health services. However, these associations were no longer significant after accounting for PTSD symptom severity.

A significant interaction was found, indicating that, as relationship adjustment improved, the association between PTSD symptom severity and odds of obtaining individual-oriented mental health services strengthened. While in the opposite direction of expectations, these findings are consistent with the notion that the support inherent in highly adjusted intimate relationships facilitates use of services for those with the greatest need for treatment (i.e., increasing severity of PTSD symptoms). While previous research has failed to demonstrate significant associations between social support and treatment utilization among Vietnam War era veterans (Sayer et al., 2007), research also finds that intimate partners who report greater involvement with their significant others (i.e., veterans) are more likely to engage in veterans' treatment for PTSD (Sautter et al., 2006). Perhaps greater positive involvement by intimate partners is found in satisfied intimate relationships, translating into productive, supportive discussions as a couple about veterans' need for mental health services and leading to greater treatment use among military service members with high need (i.e., severe symptoms of PTSD). Additionally, social support may perform differently among OEF/OIF veterans than Vietnam veterans and/or be particularly potent early in the course of PTSD or within high functioning intimate relationships. Overall, these findings highlight the power of supportive intimate relationships in promoting treatment utilization for those with symptoms of PTSD.

For utilization of family-oriented services (i.e., couple and/or family therapy), neither PTSD symptom severity nor

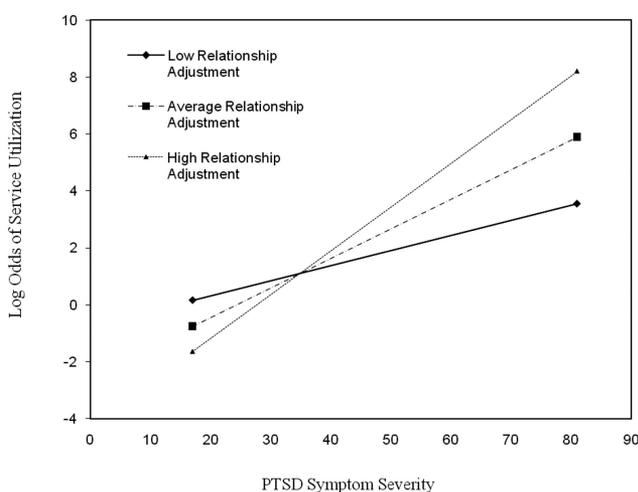


Figure 1. Odds of using individual-oriented mental health treatment.

Table 3
 Logistic Regression of Time 1 Predictors of Couple/Family Treatment Seeking at Time 2

Variable	<i>b</i>	<i>SE</i>	Wald	<i>OR</i>	Lower 95% <i>CI</i>	Upper 95% <i>CI</i>
Step 1						
PTSD symptoms	.00	.01	0.11	1.00	0.98	1.03
Relationship adjustment	-.31 [†]	.17	3.35	0.74	0.53	1.02
Step 2						
PTSD symptoms	.01	.01	0.79	1.01	0.99	1.04
Relationship adjustment	-.37*	.17	4.47	0.69	0.50	0.97
PTSD symptoms × relationship adjustment	.02 [†]	.01	3.56	1.02	1.00	1.05

Note. PTSD symptoms = PTSD symptom checklist total score; Relationship adjustment = aggregate of standardized scores from the ADAS, NQOL-SAT, and NQOL-MIRS.

[†] $p < .10$. * $p < .05$.

relationship distress uniquely, significantly predicted greater odds of using family-oriented care. However, after including the interaction between PTSD symptoms and relationship adjustment into the model, associations between greater treatment utilization and poorer relationship adjustment reached significance. While the interaction term was non-significant (relationship adjustment × PTSD symptom severity; $p < .06$), simulation studies demonstrate tests of interactions are typically underpowered (Aiken & West, 1991). An interaction with a p -value below .06 may raise interesting questions for future research. Examination of this interaction revealed that associations between poorer relationship adjustment and greater odds of obtaining couple/family care were the strongest at low levels of PTSD symptom severity, contrary to expectations. In fact, associations between relationship adjustment and couple/family care were no longer significant when soldiers endorsed severe symptoms of PTSD. Perhaps PTSD symptomatology impedes receipt family-oriented care for those in need of these services (i.e., decreasing relationship adjustment). Secondly, as problems in both of these areas increase, individuals may be decreasingly less likely to utilize programs designed to target both PTSD and relationship distress through couple/family approaches, perhaps due to avoidance dampening soldiers' willingness to self-disclose

or confront relationship problems or due to soldiers' attributions of relationship distress to PTSD, leading marital/family treatment to appear is less urgent or relevant. However, future research is required to further explore these possibilities given the overall test of the interaction did not reach significance thresholds.

Strengths and Limitations

There are a number of study limitations of note. First, our sample included mostly White, male, National Guard soldiers from the Midwest. Thus, findings may not generalize to ethnically diverse groups, enlisted soldiers, female military members, or samples in other geographic regions with differing availability of services. Second, the present findings relied on self-report data, so they cannot speak to how intimate partners' reports of distress or relationship adjustment may influence treatment utilization. Third, while our survey response rates were high, there were a number of demographic differences between responders and non-responders which may have influenced our results, suggesting findings may apply less to demographic groups underrepresented among responders. Additionally, our data speak specifically to what services soldiers report obtaining and cannot speak to whether failure to use services is due to disinterest or inability to access treatment. Of note, all returning National Guard soldiers were required by their command to participate in educational reintegration programs providing information on available resources and how to access mental health services both within and outside VA. As a result, OEF/OIF veterans may be better educated on resources and how to access resources than other non-treatment seeking populations. Finally, we inquired if soldiers received either "marriage or family counseling" but cannot tease apart if responses indicate participants were receiving traditional marital therapy, seeking family counseling for either adult mental health or child behavior problems, or were using other services entirely (e.g., consulting with a chaplain about family issues). Future research could benefit from independently assessing utilization of family-oriented services for child behavior problems, adult mental health concerns, or marital therapy.

Preliminary research indicates increasing problems in intimate relationships among service members recently re-

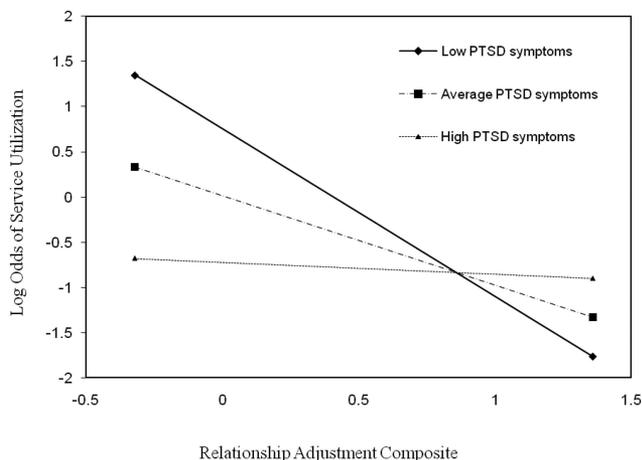


Figure 2. Odds of using any couple/family treatment.

turned from OEF/OIF (Milliken, Auchterlonie, & Hoge, 2007), especially among those who are distressed and referred for behavioral health evaluations (Sayers et al., 2009). For returning veterans, severity of PTSD symptoms are linked to their intimate relationship functioning (Nelson Goff et al., 2007; Renshaw et al., 2008). Involving intimate partners in veterans' care for PTSD is vital to promoting comprehensive care, addressing clusters of difficulties commonly experienced, and mobilizing the support inherent in intimate relationships. Our findings highlight the potential positive influences of a highly functioning intimate relationship on facilitating mental health care utilization among soldiers with PTSD symptoms. They suggest family involvement in PTSD treatment could be beneficial not only when families are distressed, but also when they are functioning well, in order to facilitate treatment engagement and perhaps promote treatment retention.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior, 36*, 1–10.
- Batten, S. V., Drapalski, A. L., Decker, M. L., DeViva, J. C., Morris, L. J., & Mann, M. A. (2009). Veteran interest in family involvement in PTSD treatment. *Psychological Services, 6*, 184–189.
- Beach, S. M., Martin, J. K., Blum, T. C., & Roman, P. M. (1993). Effects of marital and co-worker relationships on negative affect: Testing the central role of marriage. *American Journal of Family Therapy, 21*, 313–323.
- Blanchard, E. B., Jones-Alexander, J., Buckley, T. C., & Forneris, C. A. (1996). Psychometric properties of the PTSD Checklist (PCL). *Behaviour Research and Therapy, 34*, 669–673.
- Boscarino, J. A., Galea, S., Ahern, J., Resnick, H., & Vlahov, D. (2002). Utilization of mental health services following the September 11th terrorist attacks in Manhattan, New York. *International Journal of Emergency Mental Health, 4*, 143–156.
- Doss, B. D., Rhodes, G. K., Stanley, S. M., & Markman, H. J. (2009). Marital therapy, retreats, and books: The who, what, when, and why of relationship help-seeking. *Journal of Marital and Family Therapy, 35*, 18–29.
- Elhai, J. D., Richardson, J. D., & Pedlar, D. (2007). Predictors of general medical and psychological treatment use among a national sample of peacekeeping veterans with health problems. *Journal of Anxiety Disorders, 21*, 580–589.
- Erbes, C., Westermeyer, J., Engdahl, B., & Johnsen, E. (2007). Post-traumatic stress disorder and service utilization in a sample of service members from Iraq and Afghanistan. *Military Medicine, 172*, 359–363.
- Ferrier-Auerbach, A. G., Kehle, S. M., Erbes, C. R., Arbisi, P. A., Thuras, P. A., & Polusny, M. A. (2009). Predictors of alcohol use prior to deployment in National Guard Soldiers. *Addictive Behaviors, 34*, 625–631.
- Fikretoglu, D., Brunet, A., Schmitz, N., Guay, S., & Pedlar, D. (2006). Posttraumatic stress disorder and treatment seeking in a nationally representative Canadian military sample. *Journal of Posttraumatic Stress, 19*, 847–858.
- Funk, J. L., & Rogge, R. D. (2007). Testing the rule with item response theory: Increasing precision of measurement for relationship satisfaction with the Couple Satisfaction Index. *Journal of Family Psychology, 21*, 527–583.
- Galovski, T., & Lyons, J. A. (2004). Psychological sequelae of combat violence: A review of the impact of PTSD on the veteran's family and possible interventions. *Aggression and Violent Behavior, 9*, 477–501.
- Hoge, C. W., Castro, C. A., Messer, S. C., McGurk, D., Cotting, D. I., & Koffman, R. L. (2004). Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *The New England Journal of Medicine, 351*, 13–22.
- Hunsley, J., Pinsent, C., Lefebvre, M., James-Tanner, S., & Vito, D. (1995). Construct validity of the short forms of the Dyadic Adjustment Scale. *Family Relations, 44*, 231–237.
- Kehle, S. M., Polusny, M. A., Murdoch, M., Erbes, C. R., Arbisi, P. A., Thuras, P., & Meis, L. (2010). Early mental health treatment-seeking among U.S. National Guard soldiers deployed to Iraq. *Journal of Traumatic Stress, 23*, 33–40.
- Koenen, K. C., Goodwin, R., Struening, E., Hellman, F., & Guardino, M. (2003). Posttraumatic stress disorder and treatment seeking in a national screening sample. *Journal of Traumatic Stress, 16*, 5–16.
- Maguen, S., Schumm, J. A., Norris, R. L., Taft, C., King, L. A., King, D. W., & Litz, B. T. (2007). Predictors of mental health service utilization among Vietnam veterans. *Psychological Services, 4*, 168–180.
- Milliken, C. S., Auchterlonie, J. L., & Hoge, C. W. (2007). Longitudinal assessment of mental health problems among active and reserve component soldiers returning from the Iraq war. *Journal of the American Medical Association, 298*, 2141–2148.
- Monson, C. M., Schnurr, P. P., Stevens, S. P., & Guthrie, K. A. (2004). Cognitive-behavioral couple's treatment for posttraumatic stress disorder: Initial findings. *Journal of Traumatic Stress, 17*, 341–344.
- Nelson Goff, B. S., Crow, J. R., Reisbig, A. M. J., & Hamilton, S. (2007). The impact of individual trauma symptoms of deployed soldiers on relationship satisfaction. *Journal of Family Psychology, 21*, 344–353.
- Norris, F. H., Kaniasty, K. Z., & Scheer, D. A. (1990). Use of mental health services among victims of crime: Frequency, correlates, and subsequent recovery. *Journal of Consulting and Clinical Psychology, 58*, 538–547.
- Polusny, M. A., Erbes, C., Murdoch, M., Arbisi, P. A., Thuras, P., & Rath, M. B. (2009). Longitudinal risk factors for new onset PTSD in National Guard soldiers deployed to Iraq. *Manuscript under review*.
- Renshaw, K. D., Rodrigues, C. S., & Jones, D. H. (2008). Psychological symptoms and marital satisfaction in spouses of Operation Iraqi Freedom Veterans: Relationships with spouses' perceptions of veterans' experiences and symptoms. *Journal of Family Psychology, 22*, 586–594.
- Rosenheck, R. A., & Fontana, A. (1995). Do Vietnam-era veterans who suffer from posttraumatic stress disorder avoid VA mental health services? *Military Medicine, 160*, 136–142.
- Sabourin, S., Valois, P., & Lussier, Y. (2005). Development and validation of a brief version of the Dyadic Adjustment Scale with a nonparametric item analysis model. *Psychological Assessment, 17*, 15–27.
- Sautter, F., Lyons, J. A., Manguno-Mire, G., Perry, D., Han, X., Sherman, M., . . . Sullivan, G. (2006). Predictors of partner engagement in PTSD treatment. *Journal of Psychopathology and Behavioral Assessment, 28*, 123–130.
- Sautter, F. J., Glynn, S. M., Thompson, K. E., Franklin, L., & Han, X. (2009). A couple-based approach to the reduction of PTSD

- avoidance symptoms: Preliminary findings. *Journal of Marital & Family Therapy*, 35, 343–349.
- Sayer, N. A., Clothier, B., Spont, M., & Nelson, D. B. (2007). Use of mental health treatment among veterans filing claims for posttraumatic stress disorder. *Journal of Traumatic Stress*, 20, 15–25.
- Sayers, S. L., Farrow, V. A., Ross, J., & Oslin, D. W. (2009). Family problems among recently returned military veterans referred for a mental health evaluation. *Journal of Clinical Psychiatry*, 70, 163–170.
- Schell, T. L., & Marshall, G. N. (2008). Survey of individuals previously deployed for OEF/OIF. In T. Tanielian & L. H. Jaycox (Eds.), *Invisible wounds of war: Psychological and cognitive injuries, their consequences, and service to assist recovery* (pp. 87–115). Santa Monica: RAND Corporation.
- Sharpley, C. F., & Rogers, H. J. (1984). Preliminary validation of the Abbreviated Spanier Dyadic Adjustment Scale: Some psychometric data regarding a screening test of marital adjustment. *Educational and Psychological Measurement*, 44, 1045–1049.
- Spanier, G. B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family*, 38, 15–28.
- Ullman, S. E., & Brecklin, L. R. (2002). Sexual assault history, PTSD, and mental health service seeking in a national sample of women. *Journal of Community Psychology*, 30, 261–279.
- Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993, October). *The PTSD Checklist (PCL): Reliability, validity, and diagnostic utility*. Poster presented at the 9th annual meeting of the International Society for Traumatic Stress Studies, San Antonio, TX.
- Wilcove, G. L. (2005). *Results of the Navy Quality of Life Survey (NPRST-TN-05-4)*. Millington, TN: Bureau of Naval Personnel.
- Williams, W., Weiss, T. W., Edens, A., Johnson, M., & Thornby, J. I. (1998). Hospital utilization and personality characteristics of veterans with psychiatric problems. *Psychiatric Services*, 49, 370–375.

Received January 23, 2010

Revision received June 21, 2010

Accepted June 24, 2010 ■

Call for Nominations

The Publications and Communications (P&C) Board of the American Psychological Association has opened nominations for the editorships of **Journal of Experimental Psychology: Learning, Memory, and Cognition**; **Professional Psychology: Research and Practice**; **Psychology and Aging**; **Psychology, Public Policy, and Law**; and **School Psychology Quarterly** for the years 2013–2018. Randi C. Martin, PhD, Michael C. Roberts, PhD, Paul Duberstein, PhD, Ronald Roesch, PhD, and Randy W. Kamphaus, PhD, respectively, are the incumbent editors.

Candidates should be members of APA and should be available to start receiving manuscripts in early 2012 to prepare for issues published in 2013. Please note that the P&C Board encourages participation by members of underrepresented groups in the publication process and would particularly welcome such nominees. Self-nominations are also encouraged.

Search chairs have been appointed as follows:

- **Journal of Experimental Psychology: Learning, Memory, and Cognition**, Leah Light, PhD, and Valerie Reyna, PhD
- **Professional Psychology: Research and Practice**, Bob Frank, PhD, and Lillian Comas-Diaz, PhD
- **Psychology and Aging**, Leah Light, PhD
- **Psychology, Public Policy, and Law**, Peter Ornstein, PhD, and Brad Hesse, PhD
- **School Psychology Quarterly**, Neal Schmitt, PhD, and Jennifer Crocker, PhD

Candidates should be nominated by accessing APA's EditorQuest site on the Web. Using your Web browser, go to <http://editorquest.apa.org>. On the Home menu on the left, find "Guests." Next, click on the link "Submit a Nomination," enter your nominee's information, and click "Submit."

Prepared statements of one page or less in support of a nominee can also be submitted by e-mail to Sarah Wiederkehr, P&C Board Search Liaison, at swiederkehr@apa.org.

Deadline for accepting nominations is January 10, 2011, when reviews will begin.