Measuring Secondary Traumatic Stress Symptoms in Military Spouses With the Posttraumatic Stress Disorder Checklist Military Version

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Abstract: Little research to date has examined secondary traumatic stress symptoms in spouses of military veterans. This study investigated the presence and severity of posttraumatic stress symptoms in a sample of 227 Army National Guard veterans and secondary traumatic stress symptoms among their spouses. The veterans completed the posttraumatic stress disorder (PTSD) Checklist Military Version (PCL-M) (Weathers et al., 1993) to determine the probable prevalence rate of posttraumatic stress symptoms. A modified version of the PCL-M was used to assess secondary traumatic stress symptoms in the spouses. A confirmatory factor analysis showed that the modified version of the PCL-M used to assess secondary traumatic stress symptoms in spouses fits using the same four-factor PTSD structure as the PCL-M for veterans. This study provides initial evidence on the underlying symptom structure of secondary traumatic stress symptoms among spouses of traumatic event victims.

Key Words: Secondary traumatic stress, military

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Posttraumatic stress disorder (PTSD) and the effects of conflict- or war-related trauma have been widely studied among those who directly experienced the trauma. Differentiating between secondary traumatic stress symptoms and general psychological distress in military spouses has been a challenge as scientific exploration on the topic has been limited (Bramsen et al., 2002; Waysman et al., 1993) especially in the United States. In addition, specific assessment tools to measure secondary trauma are lacking. The impact of a veteran's PTSD upon spouses outside the United States has been assessed with samples including spouses of Dutch World War II couples (Bramsen et al., 2002), Iranian veterans (Zarrabi et al., 2008), Israeli veterans (Dekel et al., 2005; Solomon et al., 1992; Waysman et al., 1993), and Croatian veterans (Franclskovic et al., 2007). Studies have examined the impact of a Vietnam veteran's PTSD upon the spouse in the United States (Beckham et al., 1996; Calhoun et al., 2002; Jordan et al., 1992); however, limited studies have examined secondary traumatic stress symptoms in American spouses of veterans who have recently served in Iraq or Afghanistan (Nelson Goff et al., 2009) including using latent variable modeling to examine PTSD.

Even less research addresses the specific stress among those in the National Guard. When compared with active duty, it has been suggested that the soldiers in the National Guard may be less prepared for the physical and emotional demands of deployment. Furthermore, National Guard families do not reside in close proximity to military bases and may have less access to military resources and support (Karney and Crown, 2007). Because of these factors, National Guard soldiers and their families may experience deployments differently than full-time active duty military.

Defining Secondary Trauma

Secondary traumatic stress refers to the transmission of symptoms resembling PTSD from an individual who directly experienced a traumatic event to another significant person in one's life (Galovski and Lyons, 2004). Specifically, because of residing in close proximity to a victim of a direct traumatic experience, family members can become indirectly exposed to that trauma (Figley, 2002). Symptoms can result from the knowledge of the traumatic event or the desire to help someone experiencing traumatic stress (Figley, 1999).

The Couple Adaptation to Traumatic Stress Model (Nelson Goff and Smith, 2005) is a theoretical model that provides a systemic explanation regarding how couples are impacted after a traumatic event. When applied to military couples, it is hypothesized that, when the primary trauma survivor (the veteran) within the family system experiences trauma symptoms or a lower level of functioning, a systemic response occurs in which the likelihood of the development of secondary traumatic stress symptoms increases in the other partner (the spouse) (Figley, 1983). Furthermore, considering the circularity of the systemic response, an increase in the severity of the symptoms in one partner may increase symptoms in the other partner (Nelson Goff et al., 2009).

When examining secondary traumatic stress in military spouses, speculation exists regarding the nature of the symptoms exhibited by the spouses. Renshaw et al. (2011) noted that the types of assessment tools used in previous studies have been questionable as the tools may not have measured secondary traumatic stress but rather specific types of symptoms such as depression or anxiety or previous trauma experienced by the spouse. In addition, PTSD questionnaires typically do not refer to a specific traumatic event, so high scores may be indicative of previous trauma unrelated to trauma experienced by the veteran during deployment.

To differentiate between secondary traumatic stress and general psychological distress, Renshaw et al. (2011) examined trauma-specific and general distress symptoms in 190 military spouses with the PTSD Checklist (PCL: Weathers et al., 1993). The results suggested that fewer than 20% of the spouses indicated that their symptoms were a result of only their veteran's military experiences. Furthermore, Renshaw et al. used a general PTSD assessment tool to examine secondary traumatic symptoms and, based on the results, stated that secondary traumatic stress may be an inaccurate term used to describe the symptoms experienced by military spouses.

The current study attempted to address the issue pertaining to questionable assessment tools used to assess secondary traumatic stress symptoms in military spouses. The PTSD Checklist Military Version (PCL-M) was modified to specifically relate the symptoms experienced by the spouse directly to the veteran's deployment experiences.

Present Research

The primary goal of the present study was to assess the presence and level of severity of secondary traumatic stress symptoms in military

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spouses of Army National Guard veterans. A secondary goal was to determine whether secondary traumatic stress symptoms directly resemble PTSD symptoms and are related to the veteran's trauma. To this end, the current study modified a preexisting PTSD assessment tool designed specifically for the military population, the PCL-M (Weathers et al., 1993), to determine whether secondary traumatic stress symptoms in military spouses are similar to PTSD symptoms. Several exploratory factor analyses had been conducted on the three clusters of PTSD; however, only modest support exists for a three-factor structure of PTSD. Most studies have shown support for a four-factor structure of PTSD where the avoidance and emotional numbing symptom cluster is split into distinct avoidance and numbing/dysphoria components (Elhai and Palmieri, 2011; Yufik and Simms, 2010). Therefore, the factorial validity of the modified version of the PCL-M was assessed by testing a four-factor model.

METHODS

Participants

Participants included 227 couples from the Army National Guard in a state who had reported that the veteran had experienced a deployment outside the United States. Within this sample, 218 of the veterans were men, and nine of the veterans were women; thus, 218 of the spouses were women, and nine of the spouses were men. The mean ages for both the veteran (mean, 37.35 years; SD, 8.53 years) and the spouse (mean, 36.47; SD, 8.89 years) were similar. Most of both veterans (n = 221) and spouses (n = 223) reported Caucasian as their ethnic background. Only five veterans and three spouses reported an ethnicity other than white, and one spouse and one veteran refrained from specifying an ethnicity.

Approximately 98% of the couples reported that they were married (n = 222); however, approximately 2% reported that they were cohabitating (n = 2) or were currently separated (n = 2). One couple did not report their marital status. Of those who were married, the mean length of marriage was a little more than 10 years (mean,128.54 months; SD, 107.34 months; range, 6–486 months). Approximately 10.6% (n = 24) of the couples reported no children, 52.8% (n = 120) reported one or two children, and 36.6% (n = 82) reported three or more children.

The rank of each veteran was placed within one of four categories: enlisted (n = 13), noncommissioned officer (n = 152), officer (n = 43), and warrant officer (n = 12). Seven veterans did not report their rank. Most (n = 151) of the couples had only experienced one deployment; whereas 61 of the couples had experienced two deployments, and 15 had experienced more than three deployments. When asked for the location of their last deployment, approximately 76.2% (n = 173) of the veterans reported that their last deployment was in Iraq, 14.1% (n = 32) reported that their last deployment was in Afghanistan, and 9.7% (n = 22) reported a deployment in a different country. The length of time since the veteran had returned from deployment varied. Five veterans reported that their deployment had occurred more than 10 years ago, and four veterans did not respond. Excluding the veterans whose deployment had occurred more than 10 years ago, the mean length of time since the veteran had returned from deployment was a little more than 3 years (mean, 41.18 months; SD, 20.70 months).

Methods

Approximately 1493 soldiers and their respective spouses were invited to participate, of which 227 couples completed the survey resulting in 15% of response rate. No random sampling procedures were used as all soldiers and respective spouses in the Army National Guard in the state were surveyed. Couples were sent a packet of materials, which included a cover letter provided by the Adjutant General of the Army National Guard of the respective state, informed consent, a survey for the soldier, a survey for the spouse, return envelopes, and postage for mailings. The packet was organized and distributed by the Family Readiness Program. For confidentiality purposes, a representative of the Family Readiness Program addressed and mailed the packets to the soldiers and their respective spouses. The institutional review board and Army Human Research Protection Office provided approval for the study.

To ensure confidentiality, all surveys were coded with nonmeaningful identification codes. Each spouse and soldier survey included the same coding number to ensure adequate pairing for analysis. Statements regarding participant privacy and confidentiality of data were provided in the cover letter written by the Adjutant General and within the informed consent that was mailed to the participants. The informed consent indicated that participation in the study was voluntary. Participants were instructed to return the surveys in a specially marked, self-addressed envelope to the university department. At 1 week and 2 weeks after the initial mailing, a thank you note to soldiers and spouses for participating and a statement of encouragement to those who had not participated were sent via e-mail by a lieutenant colonel to soldiers on a distribution list.

Instruments

Both veterans and spouses were administered the PCL-M (Weathers et al., 1993) to assess the prevalence of PTSD symptoms. The PCL is one of the most popular posttraumatic symptom assessments used by clinicians because of its easy accessibility through the National Center for PTSD (Elhai et al., 2005). The instrument is a 17-item self-report measure that inquires about issues related to a stressful military experience, measured on 5-point Likert scale format (*i.e.*, 1, "not at all," to 5, "extremely"; Weathers et al., 1993).

The PCL-M was validated on two military samples of combat veterans (Weathers et al., 1993): Vietnam and Persian Gulf. First, 123 Vietnam veterans were sampled, and test-retest reliability was approximately 0.96. Internal consistency was high for B symptoms (α = 0.93), C symptoms (α = 0.92), and D symptoms (α = 0.92) and for the total scale (α = 0.97). Regarding the second sample, Persian Gulf veterans (n = 1006), internal consistency was similarly high for B symptoms (α = 0.90), C symptoms (α = 0.89), and D symptoms (α = 0.91) and for the total scale (α = 0.96). Item total correlations varied from 0.52 to 0.80. Overall, the measure has good diagnostic use (Weathers et al., 1993; see also Forbes et al., 2001, and McDonald and Calhoun, 2010, for the assessment of its use to detect symptomatic change as a function of treatment).

As described in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*)*, Fourth Edition, Text Revision*, posttraumatic stress symptoms are categorized into three clusters: reexperiencing the event, avoidance and emotional numbing, and hyperarousal (American Psychiatric Association, 2000). After a review of factor analytic studies of PTSD instruments, Elhai and Palmieri (2011) and Yufik and Simms (2010) concluded that most studies supported a four-factor model of PTSD (reexperiencing the event, avoidance, emotional numbing, and hyperarousal), supporting either an emotional numbing four-factor model or a dysphoria four-factor model. Considering that the proposed changes pertaining to the structure of PTSD in the *DSM Fifth Edition* resemble the emotional numbing model (Friedman et al., 2011), a confirmatory factor analysis was conducted to determine the structure of the modified PCL-M with a four-factor model.

The PCL-M was used in both the veteran and spouse surveys. Whereas the original PCL-M was provided to veterans, the survey was modified for the spouses. On the spouse survey, the PCL-M was adapted to request the spouse's symptoms related to the veteran's combat experiences. The instructions on the spouse survey stated: "Below is a list of problems and complaints that veterans sometimes have in response to a stressful military experience. Please read each one carefully,

and put an 'X' in the box that best applies to how your spouse's most recent deployment experiences have affected you (rate yourself)."

In addition, for PCL-M items referencing a stressful military experience, the words "your spouse's" were added preceding the words "stressful military experience." All items were included in the analysis. The responses from both the veteran and the spouse were used to determine the relationship between the veteran's posttraumatic stress symptoms and the spouse's secondary traumatic stress symptoms.

RESULTS

Confirmatory Factor Analysis of Secondary Traumatic Stress Assessment

The spouse's responses on the modified PCL-M were evaluated to determine whether the items loaded in a four-factor model. Eight subjects who did not complete the secondary traumatic stress assessment were eliminated. Four subjects had one item missing, and one subject had four items missing. Missing data were randomly distributed and were estimated using maximum likelihood (ML) procedures. Considering that the individual items on the modified PCL-M were positively skewed, a four-factor structure was tested using ML estimation with a mean-adjusted chi-square (MLM; Satorra and Bentler, 2001). The Satorra-Bentler adjusted chi-square statistic uses a scaling correction when data violate normality assumptions; therefore, the Satorra-Bentler adjusted chi-square statistic is an effective approach for significant nonnormality (Satorra and Bentler, 2001).

The four-factor structure (reexperiencing, avoidance, emotional numbing, and hyperarousal) was tested with MLM estimation, and the Satorra-Bentler chi-square statistic indicated good fit, $\chi^2 = 219.145$, $p < 0.001$; robust root mean square error of approximation (RSMEA) was less than 0.10 (RMSEA, 0.065), and additional robust fit indices indicated good fit (comparative fit index [CFI] 0.915; Tucker-Lewis index [TLI] 0.898). Table 1 shows the loading matrix for the four-factor model with MLM estimation.

Confirmatory Factor Analysis of Posttraumatic Stress Assessment

Second, the veteran's responses on the PCL-M were evaluated to confirm a four-factor model. Four subjects were missing an item. The missing data were random and were estimated using ML procedures. Considering that the individual items on the PCL-M were positively skewed, MLM estimation (Satorra and Bentler, 2001) was used.

The four-factor structure (reexperiencing, avoidance, emotional numbing, and hyperarousal) was tested with MLM estimation, and the Satorra-Bentler chi-square statistic was significant, $\chi^2 = 249.913$, $p < 0.001$; robust RSMEA was less than 0.10 (RMSEA, 0.071), and additional robust fit indices indicated good fit (CFI, 0.920; TLI, 0.904). Table 2 shows the loading matrix for the four-factor structure with MLM estimation.

Overall, both the modified versions of the PCL-M used to assess secondary traumatic stress symptoms in spouses and the PCL-M used to assess posttraumatic stress symptoms in veterans seemed to maintain a similar structure as evidenced by similar chi-square statistics and fit indices as well as similar item loadings.

Posttraumatic Stress Symptom Assessment

According to Weathers et al. (1993), a total score greater than or equal to 50 on the PCL-M is considered positive for PTSD in the military population. Approximately 8.8% of the veterans ($n = 20$) reported that they had received a diagnosis of PTSD; however, only 4 of these 20 veterans scored greater than or equal to 50. Overall, approximately 6.2% of the veterans ($n = 14$) reported a score greater than or equal to 50. Eighteen veterans scored between 41 and 49, and 42 veterans scored between 31 and 40. Most veterans ($n = 124$) scored between 18 and 30, and 29 veterans reported no symptoms.

Veterans endorsed more hyperarousal symptoms than reexperiencing or avoidance/emotional numbing symptoms. More than half of the veterans reported no symptoms on all of the questions related to the reexperiencing and avoidance/emotional numbing symptoms, except for one question related to feeling distant or cut off from other

TABLE 1. Loading Matrix of Four Factors of Secondary Traumatic Stress Symptoms

	Reexperiencing	Avoidance	Emotional Numbness	Hyperarousal
Item 1: Recurring, distressing recollections of your spouse's stressful military encounter	0.742			
Item 2: Recurring nightmares	0.747			
Item 3: Unexpectedly reliving	0.768			
Item 4: Feeling distress when reminded	0.797			
Item 5: Experiencing physiological reactions	0.769			
Item 6: Evading thoughts, conversations, or emotions		0.815		
Item 7: Evading events or circumstances that may prompt memories		0.939		
Item 8: Trouble recalling significant aspects			0.472	
Item 9: Loss of enjoyment in leisure events			0.789	
Item 10: Feeling isolated			0.862	
Item 11: Experiencing little emotional sensations			0.837	
Item 12: Believing you might have a reduced future			0.651	
Item 13: Difficulties with sleep				0.705
Item 14: Difficulties with anger				0.802
Item 15: Problems staying engaged				0.813
Item 16: Being extraordinarily aware or vigilant				0.821
Item 17: Feeling nervous or anxious				0.800

TABLE 2. Loading Matrix of Four Factors of Posttraumatic Stress Symptoms (PCL-M)

	Reexperiencing	Avoidance	Emotional Numbness	Hyperarousal
Item 1: Recurring, distressing recollections of your stressful military encounter	0.841			
Item 2: Recurring nightmares	0.804			
Item 3: Unexpectedly reliving	0.729			
Item 4: Feeling distress when reminded	0.841			
Item 5: Experiencing physiological reactions	0.793			
Item 6: Evading thoughts, conversations, or emotions		0.897		
Item 7: Evading events or circumstances that may prompt memories		0.886		
Item 8: Trouble recalling significant aspects			0.494	
Item 9: Loss of enjoyment in leisure events			0.793	
Item 10: Feeling isolated			0.853	
Item 11: Experiencing little emotional sensations			0.792	
Item 12: Believing you might have a reduced future			0.635	
Item 13: Difficulties with sleep				0.697
Item 14: Difficulties with anger				0.836
Item 15: Problems staying engaged				0.806
Item 16: Being extraordinarily aware or vigilant				0.670
Item 17: Feeling nervous or anxious				0.701

people. Approximately 51.1% ($n = 116$) of the veterans reported feeling distant or cut off from other people at least a little bit.

Conversely, almost half of the veterans reported symptoms on all of the questions related to hyperarousal. Approximately 44.9% ($n = 101$) reported trouble falling or staying asleep at least a little bit, and 49.3% ($n = 112$) reported feeling jumpy or easily startled at least a little bit. A little more than half ($n = 126$) of the veterans reported difficulties concentrating as well as feeling "super alert," watchful, or on guard at least a little bit. More than half ($n = 148$) of the veterans reported feeling irritable or having angry outbursts at least a little bit. Overall, 48% of the veterans felt as if he/she had changed since their deployment.

Secondary Traumatic Stress Symptom Assessment

Spouses completed the modified version of the PCL-M to determine the probable prevalence of secondary traumatic stress symptoms in spouses of Army National Guard veterans who had returned from Iraq, Afghanistan, or a different country outside the United States. The spouses reported fewer symptoms on the modified version of the PCL-M than the veterans reported on the regular version of the PCL-M. Approximately 2.6% of the spouses ($n = 6$) reported a score greater than or equal to 50. Six spouses scored between 41 and 49, whereas 22 spouses scored between 31 and 40. Most of the spouses ($n = 125$) scored between 18 and 30, and 60 spouses reported no symptoms. Eight spouses did not complete the assessment.

More than 60% of the spouses reported no symptoms. The most frequently endorsed item pertained to feeling irritable or having angry outbursts, which was endorsed at least a little bit by 37% ($n = 84$). Furthermore, 34 spouses reported that someone had indicated that they had changed since their spouse's stressful military experience, whereas 135 spouses reported that they had not changed. Approximately 58 of the spouses did not answer the question.

The results suggest little variability among the severity of symptoms among the spouses. This lack of variability may be due to sampling a population that responded in a more favorable manner or sampling a population that exhibited few symptoms. Furthermore, secondary traumatic stress was related to posttraumatic stress ($r = 0.217$, $p < 0.01$), which suggests that, as posttraumatic stress scores increase, secondary traumatic stress scores increase. Table 3 shows the Pearson correlations for the independent variables.

DISCUSSION

Figley (1999) proposed that family members may become indirect victims of a trauma by residing in close proximity to a victim of a direct traumatic experience. The symptoms may develop either by having knowledge of the traumatic event or maintaining the desire to help someone experiencing the traumatic exposure. Secondary traumatic stress is commonly associated with professional caregivers, such as mental health professionals, social workers, nurses, and others who provide care to individuals after a traumatic event. Considering the high prevalence of PTSD in the military, military spouses are an at-risk population for experiencing secondary traumatic stress symptoms; however, secondary traumatic stress symptoms in military spouses have not been adequately studied. The present study investigated the presence and severity of secondary traumatic stress symptoms in spouses of combat veterans.

Probable Prevalence of PTSD in Veterans

To determine the probable prevalence of posttraumatic stress symptoms among Army National Guard veterans who returned from

TABLE 3. Pearson Correlations for Independent Variables ($N = 167$)

	Variables	1	2	3	4	5	6
1	Soldier age	—					
2	Length of marriage	0.717**	—				
3	Time since deployment	0.122	0.091	—			
4	Spouse age	0.536**	0.477**	−0.019	—		
5	Soldier trauma	−0.091	−0.066	−0.054	0.078	—	
6	Spouse trauma	−0.167*	−0.142	−0.087	−0.079	0.217**	—

*Correlation is significant at the 0.05 level (two tailed).
**Correlation is significant at the 0.01 level (two tailed).

Iraq, Afghanistan, or a different country outside the United States, the PCL-M was used to measure posttraumatic stress symptoms. According to Weathers et al. (1993), a total score greater than or equal to 50 on the PCL-M is considered positive for PTSD in the military population. (An alternative method of assessing only those who scored moderately or higher as symptomatic and following the *DSM* scoring rule to obtain a diagnosis was not used.) It must be noted that it is possible for a veteran to have PTSD without scoring greater than or equal to 50 on the PCL-M.

Of the veterans exposed to war-zone trauma, estimates suggest that 15% of the current veterans experience PTSD (Richardson et al., 2010). In this study, approximately 6.2% (n = 14) of the veterans who were married reported a score greater than or equal to 50. However, clinicians should diagnose based on an administered interview instead of solely on a self-report measure. This analysis also included veterans who returned from deployments in other countries besides Iraq or Afghanistan. Considering that the analysis did not include veterans who were not married, it was difficult to provide an estimate regarding all veterans in the state who are experiencing PTSD symptoms.

Regarding specific symptoms, the results suggested that almost half of the veterans reported symptoms on all of the questions related to hyperarousal. This suggests that hyperarousal symptoms may be more meaningful or noticeable to the veterans than other symptoms or hyperarousal may be a more persistent and longer-lasting symptom than reexperiencing, avoidance, or emotional numbness. Conversely, veterans may have reported the symptoms that were perceived as less severe, which may have resulted in more veterans likely to report hyperarousal symptoms. Furthermore, only those veterans with higher levels of PTSD may have endorsed items related to emotional numbness, reexperiencing, or avoidance. Future studies may need to examine which factor (reexperiencing, avoidance, emotional numbness, and hyperarousal) may be perceived as the most disabling factor.

Secondary Traumatic Stress Symptoms

To determine the probable prevalence of secondary traumatic stress symptoms in spouses of Army National Guard veterans who returned from Iraq, Afghanistan, or a different country outside the United States, a modified version of the PCL-M was used to assess symptoms in spouses. Considering that the instrument had never been previously used to assess secondary traumatic stress symptoms, the factor structure of the instrument was assessed. It was hypothesized that the factor structure used to measure secondary traumatic stress would be similar to the factor structure used to measure PTSD symptoms.

A three-factor structure (reexperiencing, avoidance/emotional numbing, and hyperarousal) was compared with a four-factor structure. For the three-factor structure with MLM estimation, the Satorra-Bentler chi-square statistic was significant, $\chi^2 = 293.359$, $p < 0.001$. Furthermore, the robust RMSEA was 0.084, TLI was 0.834, and CFI was 0.858. These robust statistics did not indicate a good-fitting model. A four-factor model provided a good-fitting model; thus, secondary traumatic stress in military spouses fits the same four factors used to diagnose PTSD: reexperiencing, avoidance, emotional numbness, and hyperarousal.

Considering that secondary traumatic stress follows a similar factor structure to PTSD, secondary traumatic stress may be a condition with characteristics similar to PTSD. The four factors (reexperiencing, avoidance, emotional numbing, and hyperarousal) provide specific information regarding the types of symptoms experienced by spouses and also provide more support regarding the belief that secondary traumatic stress symptoms resemble posttraumatic stress symptoms. Also of importance, tools used to assess secondary traumatic stress symptoms are lacking; therefore, the preliminary results suggest that, with more research, the modified version of the PCL-M may be considered as a tool to use when assessing secondary traumatic stress symptoms.

Regarding probable prevalence rate for secondary traumatic stress, in addition to using the cutoff score of 50 that is specified for military soldiers, a cutoff score of 44 was used that is specified for use with the nonmilitary population (Blanchard et al., 1996). Approximately 2.6% (n = 6) of the spouses scored greater than or equal to 50 on the modified version of the PCL-M. Following the cutoff score for a nonmilitary population, 5% (n = 11) of the spouses met the criteria. This percentage is similar to the number of veterans who met the cutoff score of 50. However, of the 14 soldiers who reported a score greater than 50, only 1 of those 14 spouses scored greater than 44. This suggests that other variables may contribute more to secondary traumatic stress symptoms in spouses than the extent of the symptoms in the veterans. Therefore, it seems that one mechanism for secondary traumatic stress is the transmission of symptoms from veteran to spouse. Another, possibly more important, mechanism is through indirect exposure by learning about traumatic events of a loved one.

In contrast to the veteran population, approximately 60 spouses reported no symptoms. Considering that the spouses experienced the traumatic event indirectly, it would be expected that the probable prevalence of secondary traumatic stress symptoms would be lower. Furthermore, the spouses who participated may have responded in a more favorable manner or the spouses who participated may have experienced fewer symptoms. Fewer symptoms may also have been a result of effective communication between the veteran and the spouse; adequate coping behaviors; and adequate support from others including family, friends, or the National Guard.

Limitations

Shortcomings exist that may limit the generalizability of the results. Ersland et al. (1989) have discussed that the individuals who experience severe symptoms related to a traumatic event are less likely to return surveys that include questions related to the traumatic event. The veterans and spouses who did participate may have experienced fewer symptoms and were comfortable reporting the symptoms. Those who were uncomfortable sharing their symptoms may have declined to participate. Therefore, the sample may be biased.

Second, the research included a self-report measure that did not control for previous trauma. Previous trauma may have inflated the scores on the PCL-M because of experiencing symptoms related to other previous traumatic events instead of the specific traumatic event(s) experienced by the veteran while serving in the military. Future studies may need to address the impact of previous trauma upon the development of secondary traumatic stress symptoms.

Third, demand characteristics of the PCL-M may be of concern as participants may have been aware of the purpose of the investigation. Veterans and spouses may have responded to fit the interpretation of PTSD or secondary traumatic stress or underreported symptoms to avoid acknowledging symptoms for fear of damaging their military career from reporting genuine symptoms. As a result, the similarity in factor structure of the PCL-M among veterans and spouses may reflect the demand characteristics of the PCL-M rather than any commonality in psychopathology between veterans and spouses.

Finally, the modified version of the PCL-M has never been previously used to assess secondary traumatic stress symptoms in spouses. For the purposes of this study, the items on the modified version of the PCL-M fit a four-factor PTSD structure and seemed to have adequate psychometric properties. However, additional research may be necessary to replicate the findings with spouses of Army National Guard veterans or spouses of veterans in other branches of the military to show additional support for the use of the instrument.

CONCLUSIONS

There are several implications resulting from the present study. First, this study used a modified version of a PTSD instrument to assess

secondary traumatic stress symptoms in military spouses. Considering that the modified version of the PCL-M fits a four-factor structure, which included the same four factors used to diagnose PTSD, the modified version of the PCL-M may be considered as a preliminary tool to assess secondary traumatic stress symptoms in military spouses. Additional research is needed to replicate the findings.

Second, this study did not require a previous diagnosis of PTSD in the veteran as inclusion criteria for the study. This may have allowed for more variability of responses on the items, which may have contributed to determining the factor structure.

Overall, this study included preliminary research of secondary traumatic stress among spouses of Army National Guard veterans. This study was one of the first to assess secondary traumatic stress symptoms with National Guard veterans and spouses. In addition, this study was one of the first to use veterans without a previous diagnosis of PTSD as a criterion and to evaluate an instrument for measuring secondary traumatic stress symptoms. The results of the preliminary research tentatively suggest that the PCL-M may be used to assess secondary traumatic stress symptoms in military spouses.

DISCLOSURE

The authors declare no conflict of interest.

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