Journal of Clinical Psychology in Medical Settings, Vol. 10, No. 4, December 2003 (© 2003)

Factors Influencing Experienced Distress and Attitude Toward Trauma by Emergency Medicine Practitioners

Tiffany Warren,[1,2] Shannon Lee,[1] and Stephen Saunders[1]

Authors explored whether the dose-response relationship evident in PTSD also applied to cases of vicarious trauma and, if so, which variables serve to moderate such reactions. This study examined the surveyed responses of emergency care workers in a group geographically near the September 11, 2001 New York terrorist site, comparing the results to a group of emergency care workers geographically distant from the terrorist site. Study results lend support to the presence of a dose-response relationship within vicarious traumatization. Specific variables associated with higher distress levels for practitioners included the discipline of the practitioner, treating an injured victim, and personally knowing a victim of the New York terrorist attacks. Past training related to vicarious traumatization was not associated with lower distress levels for practitioners. In addition, practitioners' awareness and interest in psychological issues related to trauma appear to have been enhanced by geographic proximity to the New York terrorist attacks.

KEY WORDS: Emergency medicine practitioners; vicarious traumatization; dose-response relationship; PTSD.

Via their work, those employed within helping professions are often indirectly exposed to trauma and the negative consequences of such exposure have been documented (Figley, 2002; McCann & Pearlman, 1990; Sloan, Rozensky, Kaplan, & Saunders, 1994; Sprang, 1999; Stamm, 1997). Often referred to as vicarious traumatization or compassion fatigue, the constellation of symptoms associated with helping-induced trauma may include distress, avoidance, hypervigilance, heightened feelings of vulnerability, an extreme sense of helplessness, an exaggerated sense of control, chronic suspicion regarding the motives of others, hostility, bitterness, cynicism, and feelings of alienation (American Psychiatric Association [APA], 2000; Figley, 2002; McCann & Pearlman, 1990). According to McCann and Pearlman (1990), such symptoms may resonate throughout the personal and professional interactions of a practitioner, negatively affecting all aspects of functioning.

Emergency care practitioners represent a population highly vulnerable to vicarious traumatization. As individuals depended upon following disaster, emergency care practitioners are inevitably and repeatedly exposed to victims of trauma. Typically, the degree of this exposure is greatest following a large-scale catastrophe. In cases of direct trauma, research indicates that the number and variety of posttraumatic symptoms increases as the severity, duration, and immediacy to trauma increases (APA, 2000; Sprang, 1999). Research is less clear regarding the indirect experience of trauma, but individual factors appear to be more significant in moderating such dose-response relations (Bowman, 1999; Figley, 2002; Sprang, 1999).

RESEARCH GOALS

This study explored the association between proximity to a disaster and trauma-related reactions.

[1]Department of Psychology, Marquette University, Milwaukee, Wisconsin.

[2]Correspondence should be addressed to Tiffany Warren, Department of Psychology, Marquette University, P.O. Box 1881, Milwaukee, Wisconsin 53201-1881; e-mail: tiffany.warren@marquette.edu.

1068-9583/03/1200-0293/0 © 2003 Plenum Publishing Corporation

The survey responses of emergency care workers geographically near the September 11, 2001 ("9/11") terrorist sites were compared to those geographically distant. On the basis of the dose-response relationship found in individuals directly traumatized, it was hypothesized that proximity and degree of exposure to the attacks would affect the expression of distress by the practitioner. To be specific, it was hypothesized that individuals residing near the attacks, those who had treated victims of the attacks, and those who personally knew someone injured in the attacks would report greater distress. In addition, as media reports related to "9/11" often included graphic depictions, it was hypothesized that those who attended to a higher amount of media coverage of the attacks would report greater distress. It was also hypothesized that practitioners residing in close proximity to the attack site would report an increased awareness and interest in PTSD. Finally, it was hypothesized that practitioners who received training related to their personal psychological reactions to traumatic events would be less emotionally distressed than practitioners who had not received specialized training.

METHOD

Sample

Surveys were mailed to a sample of 480 randomly selected, practicing emergency medicine physicians and nurses residing either within a 30-mile radius of Manhattan, New York, or within the state of Wisconsin. Practitioners were identified by their membership in either the American Medical Association (AMA) or the American Nurses Association (ANA). Equal numbers of nurses and physicians from both New York and Wisconsin were obtained from a commercial service (KMLists, Inc., Marlton, NJ).

Procedure

This study utilized a descriptive, nonexperimental, quantitative mail survey research design. The survey included seven items related to the previous training and the respondents' personal and professional experiences related to "9/11" (see Appendix). All surveys were mailed to respondents 4 weeks following "9/11." Attached was a letter explicitly stating that participation was voluntary, that all responses would remain anonymous, and that respondents would indicate their informed consent to participate by returning the completed survey. The letter also outlined the selection procedure and purposes of the study. A self-addressed, stamped, unmarked envelope was provided to participants to return the surveys to the second author. Respondents were also asked to indicate demographical information such as age, gender, primary area of emergency medical practice, and the number of years he or she had worked in that discipline.

RESULTS

Of the 480 instruments mailed, 54 were returned as undeliverable. One hundred and nine surveys were completed and returned, leading to a response rate of 25.5%. One respondent was eliminated from analyses for failing to identify his or her discipline, resulting in a usable sample of 108 surveys.

Participant Characteristics

Seventy-three respondents (68%) were from Wisconsin and 35 (32%) were from New York, including 56 females (52%) and 52 (48%) males. Respondents were between the ages of 28 and 85 with a mean age of 44.63 years ($SD = 9.70$). Physicians comprised exactly half of the respondents, whereas nurses and nurse practitioners constituted the other half. In terms of discipline, there was a marked difference in gender distribution (the group of physicians was 82% male and the group of nurses was 85% female). Overall, respondents reported substantial work experience, with the mean years of practice in a respondents' discipline being 15.70 years. For comparison, two groups were formed on the basis of discipline; one group consisted of physicians and the second group consisted of both nurses and nurse practitioners.

Proximity, Experience, and Personal Involvement

Results indicate that health care practitioners in New York ($M = 4.45$, $SD = 2.67$) did report more emotional distress than health care practitioners in Wisconsin ($M = 3.51$, $SD = 2.38$), although not to a significant degree, $t(106) = -1.87$, $p = .07$. Whether or not health care practitioners treated an individual injured in the New York terrorist attack, however, did significantly influence the amount of emotional distress felt by practitioners. Practitioners who treated someone injured ($N = 25$) reported significantly more distress than those who did not treat someone

injured ($N = 82$), $t(105) = 2.46$, $p < .05$. In addition, those practitioners who personally knew someone injured in the terrorist attacks ($N = 25$) felt more distress than those who did not personally know someone injured ($N = 83$), $t(106) = 2.29$, $p < .05$.

In regard to awareness and interest in the psychological ramifications of trauma, practitioners in close proximity to the terrorist attack (residing in or near New York; $M = 3.26$, $SD = 0.83$) reported that the terrorist attack had increased their awareness of psychological issues related to trauma to a greater degree than those practitioners residing in Wisconsin ($M = 2.86$, $SD = 0.87$), $t(105) = -2.26$, $p < .05$. In addition, practitioners in close proximity to the terrorist attack ($M = 3.06$, $SD = .84$) also reported that the terrorist attack had increased their interest in learning more about psychological issues related to trauma to a greater degree than those practitioners residing in Wisconsin ($M = 2.71$, $SD = .81$), $t(106) = -2.05$, $p < .05$.

Media Exposure

To evaluate the association between the degree of exposure to "9/11" media coverage and degree of emotional distress, health care practitioners were divided into two groups: those who watched less than 3 hours of daily media coverage during the week following "9/11" and those who watched over 3 hours of daily media coverage following "9/11." Contrary to our hypothesis, those exposed to over 3 hours of daily media coverage did not express feeling more emotionally distressed ($M = 3.94, SD = 2.01$) than those practitioners who watched less than 3 hours of daily media coverage ($M = 3.79$, $SD = 2.60$), $t(106) = 0.24$, $p = .81$.

Training

Overall, 45% of practitioners denied exposure to training related to their personal reactions to trauma, and 81% of the total sample reported receiving 4 or less hours of training in this area. To examine whether training regarding a practitioner's personal reactions to trauma related to reported distress, respondents were grouped into two groups: those who had received training ($M = 3.50, SD = 2.24$) and those who had not received training ($M = 4.13$, $SD = 2.70$). Results indicate that the two groups did not differ significantly in the amount of distress reported 4 weeks after the terrorist attacks $t(100) = 1.29$, $p = .201$.

DISCUSSION

Study results lend support to the presence of a dose-response relationship within vicarious traumatization. Although mere proximity to the New York terrorist attacks and exposure to media coverage were not significant determinants of reported distress, treating an injured victim and personally knowing someone injured had a significant effect on the amount of emotional distress experienced by practitioners. Such findings are consistent with previous work. For example, Wee and Myers (2002) investigated the emotional functioning of mental health service workers providing care to victims of the Oklahoma City bombing and found that helping-induced stress was not related to the amount of exposure to indirect trauma per se, but to the emotional intensity of such exposure.

Study results also draw attention to the limited and minimally effective training related to practitioners' personal responses to trauma. Current training practices for emergency care workers may be inadequate, as the reported distress of practitioners with a history of training in this area did not differ significantly from those without training. In addition, a large percentage (45%) of workers had not received any training in this area.

More optimistically, it appears as though practitioners who may be in greater need of training and therapeutic interventions related to their employment experiences are receptive to such interventions. Paralleling the dose-response literature as it relates to trauma symptoms, both awareness and interest in psychological issues related to trauma were enhanced by an individual's geographic proximity to the New York terrorist attacks. Future work may seek to identify more effective measures related to the prevention and treatment of vicarious traumatization while considering such periods of enhanced interest.

A weakness of this study is the limited generalizability of findings. Only physicians belonging to the AMA and nurses belonging to the ANA who resided in New York or Wisconsin were among the possible participant pool. In addition, the responders within this group were entirely self-selected. As a result, this limited, self-selected sample may not be representative of the population under consideration and the results may be biased. For example, nonresponders may represent a portion of individuals who cope with stress via denial. The survey also fails to consider the possible influence of post-"9/11" interventions and work-related stressors beyond traumatic

exposure. In previous work, including that of Sloan et al. (1994), such variables have been identified as moderators of stress-related symptoms. An additional limitation of this study was the assumption that what participants reported on the survey corresponds with their actual behavior. Research documents that this assumption is often false (Bellack & Hersen, 1977; Mischel, 1968). Future investigations may wish to examine how self-reported attitudes and behaviors actually mirror behavior within a more representative sample and with consideration for a larger number of variables.

APPENDIX

1. Please indicate the extent to which the recent NY terrorist attack has increased your awareness of psychological issues related to trauma:
   ❑ Very much ❑ A moderate amount ❑ A little ❑ Not at all
2. Please indicate the extent to which the recent NY terrorist attack has increased your interest in learning more about psychological issues related to trauma:
   ❑ Very much ❑ A moderate amount ❑ A little ❑ Not at all
3. Please indicate the degree to which you have had training in how to deal with your own psychological reactions to the trauma you encounter at work?
   ❑ 5+ h ❑ 1–4 h ❑ No training ❑ Cannot recall
4. Did you treat anyone injured in the recent NY terrorist attack?
   ❑ Yes ❑ No
5. Did you personally know anyone injured in the recent NY terrorist attack?
   ❑ Yes ❑ No
6. How much daily media coverage were you exposed to in the 3 days following the recent NY terrorist attack?
   ❑ 0–1 h ❑ 1–2 h ❑ 2–3 h ❑ 3+ h
7. Please circle the number that corresponds to the degree to which the recent NY terrorist attack has caused you emotional distress in the past week:

0	1 2 3	4 5 6	7 8 9	10
No distress	Very little distress	Moderate distress	Very much distress	Extreme distress

REFERENCES

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., Text Revision). Washington, DC: Author.

Bellack, A. S., & Hersen, M. (1977). Self-report inventories in behavioral assessment. In J. D. Cone & R. P. Hawkins (Eds.), *Behavioral assessment: New directions in clinical psychology* (pp. 52–76). New York: Brunner/Mazel.

Bowman, M. L. (1999). Individual differences in posttraumatic problems with the DSM-IV model. *Canadian Journal of Psychiatry*, *44,* 21–33.

Figley, C. (Ed.). (2002). *Treating compassion fatigue*. New York: Brunner-Routledge.

McCann, I. L., & Pearlman, L. A. (1990). Vicarious traumatization: A framework for understanding the psychological effects of working with victims. *Journal of Traumatic Stress*, *3,* 131–149.

Mischel, W. (1986). *Personality and assessment*. New York: Wiley.

Sloan, I. H., Rozensky, R. H., Kaplan, L., & Saunders, S. M. (1994). A shooting incident in an elementary school: Effects of worker stress on public safety, mental health, and medical personnel. *Journal of Traumatic Stress*, *7,* 565–574.

Sprang, G. (1999). Post-disaster stress following the Oklahoma City bombing: An examination of three community groups. *Journal of Interpersonal Violence*, *14,* 169–183.

Stamm, B. H. (1997). Work-related secondary traumatic stress. *PTSD Research Quarterly*, *8,* 1–5.

Wee, D., & Myers, D. (2002). Response of mental health workers following disaster: The Oklahoma City bombing. In C. R. Figley (Ed.), *Treating compassion fatigue* (pp. 57–83). New York: Brunner/Mazel.