

## Vicarious Trauma in Mental Health Professionals Following the 9/11 Terrorist Attacks

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### Abstract

**Introduction:** Some research evidence has suggested that mental health clinicians who provide services following massive disasters are at risk for developing symptoms of vicarious trauma (VT). This pilot study was conducted following the unprecedented terrorist attacks in New York City on September 11, 2001.

**Objectives:** 1) To identify risk and protective factors of VT in a sample of mental health professionals who provided services to victims of 9/11. 2) To compare and contrast the findings of the survey with other published studies.

**Method:** A group of mental health professionals who provided services to New York City residents affected by 9/11 were surveyed on the first year anniversary of the terrorist attacks. Risk and protective factors of VT were identified using correlation and chi-squared analyses. Findings of this survey were compared with other published studies on VT in mental health clinicians who worked with 9/11 survivors.

**Results:** History of personal trauma, fewer years of professional experience, fewer hours of individual supervision, and larger caseloads were identified as probable risk factors for VT.

**Conclusions:** An increased risk of VT was associated with a number of work-related and personal variables. Enhanced professional and social supports may decrease the risk of VT in mental health professionals who provide services in the context of disasters and mass psychological trauma.

**Keywords:** Vicarious trauma; PTSD phenomenology; Risk and protective factors; Terrorism

### Introduction

The 9/11 terrorist attacks on the World Trade Center in New York City resulted in the loss of many lives, and a profound disturbance in self-perceived safety nationwide [1]. The psychological impact of the traumatic event has been documented in different populations [2-5] including first responders/recovery workers at Ground Zero [6,7]. However, the impact of providing mental health services to those traumatized by 9/11 on the clinicians has been less widely studied.

Evidence-based psychotherapies for posttraumatic stress disorder (PTSD), such as prolonged exposure (PE) therapy and cognitive processing therapy (CPT), involve the detailed retelling of traumatic events, which expose psychotherapists to potentially distressing narratives [8]. Research suggests that providing psychotherapy to trauma victims may produce PTSD-like symptoms and cognitive changes in psychotherapists themselves [9,10]. This phenomenon has been described as vicarious traumatization (VT). Over the past few decades, researchers have attempted to explain the occurrence of VT, which is considered different from counter transference or burnout [11]. It has been suggested that VT in psychotherapists may be caused by the clinicians' internal reactions to the imagery and intrusive thoughts produced by listening to repeated, and often vividly detailed accounts of their clients' traumatic experiences [12-14]. Jenkins and Baird [15] have suggested that VT alters the views and relationships of the psychotherapist, aligning these outlooks more similarly with those of the traumatized client, thereby differentiating itself from counter transference, which is considered to be a contained, short-term response [12], and from burnout, which stems from a work-

related situation rather than an interpersonal interaction [14]. VT may be expressed as anxious or depressive thoughts, somatic complaints, the presence of intrusive thoughts and images, emotional numbing, difficulties with intimacy, and a heightened sense of distrust (Table 1). Although not all individuals will experience all symptoms, the psychological consequences of VT can have deleterious effects on the personal and professional life of the psychotherapist [16-18].

VT in clinicians who provide mental health services to victims of trauma, such as sexual trauma survivors, offenders [19-21] and military veterans [22,23] has been well documented. VT has also been documented in those who provide mental health services to victims of large-scale catastrophes, such as hurricanes, earthquakes, and civil war [24,25]. Additionally, VT has been identified in cohorts of non-mental health providers such as peacekeepers and humanitarian aid workers [26], child protection workers [27,28], and first responders and law enforcement officers [29]. This paper studies a group of mental health clinicians who provided a wide range of services in the aftermath of the unprecedented mass traumatic events of September 11, 2001.

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Emotional	Cognitive	Physical	Behavioral
Less grounded	Feeling unworthy of love	Feeling unsafe	Social withdrawal
Overwhelmed	Feeling unloved	Intrusive visual, auditory, sensory, and olfactory imagery	Disconnected from loved ones
Frustrated	Question right to be alive/happy		Crying episodes
Unbearable anxious	Self-loathing		Eruptions of anger
Unable to experience pleasure	Poor decision-making		Intolerant
Emotionally numb Emotionally closed Despair	Feeling like a failure Lack of trust Cynical		Distant from others Harsh Disconnection from significant others
Resentful Exhausted Flooding reminders	Intrusive imagery		Poor judgment Loss of control Nightmares
			Avoidance of traumatic event

Adapted from Saakvitne and Pearlman [40]. Transforming the pain: A workbook on vicarious traumatization for helping professionals who work with traumatized clients. New York. Norton.

**Table 1:** Vicarious Traumatization Symptomatology.

## Methods

One year following the 9/11 terrorist attacks, a written survey was completed by 35 mental health professionals at St. Vincent’s Hospital Manhattan (SVH), a teaching hospital in downtown New York City. Informed consent and approval from the institutional review board was obtained.

The survey consisted of two standardized tools [30], Impact of Event Scale – Revised [31], Trauma Symptom Inventory [32] and a Personal Questionnaire. The questionnaire inquired about caseloads, including involvement with victims of the 9/11 terrorist attacks in New York City immediately following the event and one year later; frequency of individual supervision received; demographic information such as age, religious participation, and marital status; and psychiatric history, including past personal trauma, and symptoms of depression and anxiety prior to the 9/11 terrorist attacks.

Correlation analyses were conducted to estimate the association between TSI subscale scores, psychiatric variables, and demographic variables, while chi-square analyses were used to identify differences between groups of participants.

On the 10th year anniversary of 9/11, a systematic literature review on VT and mental health professionals who provided services to 9/11 victims from 2001-2011 was conducted.

## Results

### Literature review

Ten years after 9/11, there were over 300 studies on VT, secondary traumatic stress and other related concepts. However, only five studies that focused on 9/11 examined similar variables of interest and allowed comparison with cohort studies from the SVH study [33-37] (Table 1). The majority of the studies reviewed examined the relationships between both personal (i.e. age, marital status, history of trauma) and professional factors (i.e., years of experience, caseload, hours of supervision) and symptoms of traumatic stress among mental health workers.

### Risk factors

**Personal trauma history:** In the SVH survey, a history of trauma was significantly associated with post-9/11 symptoms. Of those who had no previous exposure to traumatic events, 35% reported experiencing some post-9/11 symptoms of psychological distress; while 67% of participants who acknowledged a history of trauma described experiencing post-9/11 symptoms. Symptoms include increased anxious arousal, depression, anger/irritability, intrusive experiences, defensive

avoidance, sexual concerns, and tension reduction behaviors. A history of past trauma also emerged as a significant predictor of traumatic stress which is consistent with the results of the Adams and colleagues study [33]. However, personal trauma history was not significantly related to secondary traumatic stress in the Creamer study [35].

### Symptoms of depression and anxiety before and after 9/11:

Individuals who reported experiencing depressive symptomatology prior to the 9/11 terrorist attacks had significantly higher IES-r intrusion scores than those who did not report depression symptoms before 9/11 ( $X^2=6.04$ ,  $p=0.014$ ). Post-9/11 symptoms of depression or anxiety were also positively correlated with a number of TSI subscales (Table 2). Of the five studies reviewed for comparison purposes, none evaluated history of depression and anxiety as a risk factor for VT.

**Caseload:** In the SVH study, clinicians who reported having 9/11 rescue workers in their caseloads had elevated intrusion scores. The Creamer and Liddle [35] study, which surveyed eighty clinicians from 28 states, as well as Washington, DC and Alberta, Canada, revealed that disaster mental health workers who had a caseload of current and past trauma victims including children, firefighters, and clients with morbid material, showed higher symptoms of secondary traumatic stress. In addition, they also found that those with heavier trauma caseload prior to 9/11 had significantly higher secondary traumatic stress symptomatology after 9/11.

**Proximity to ground zero:** Proximity to Ground Zero was an implicit variable in the study as SVH was only three miles north of the World Trade Center. Most of the respondents were at the medical center when the attacks occurred and over 90% immediately provided services to 9/11 trauma victims. The Eidelson et al. [37] study of 592 psychologists in NY, NJ, CT and PA specifically examined the impact of distance from Ground Zero on clinicians. They found that those who worked closer to Ground Zero reported higher work related stress and stronger feelings of being unprepared. These respondents also had the highest percentage of caseload affected by 9/11. Colarossi et al. [34] found that, among the 777 social work students and MSW practitioners in the NY metropolitan area surveyed, those living within 10 miles of the World Trade Center site reported increased symptoms of depression, anxiety, somatization and traumatic stress. They also found that those who were displaced from work after the attack presented with significantly higher somatic symptoms.

**Anniversary reaction:** The SVH study was conducted on the first year anniversary of 9/11, and as previously reported, clinicians who reported post 9/11 symptoms of depression and anxiety scored higher on the TSI subscales of intrusive experiences, defensive avoidance,

Independent variable	TSI subscale	r
Past trauma	Anger/irritability	0.45
	Anxious arousal	0.31
	Defensive avoidance	0.35
	Depression	0.39
	Intrusive experiences	0.32
	Sexual concerns	0.29
	Tension reduction behaviors	0.45
Post 9/11 depression or anxiety	Defensive avoidance	0.34
	Dissociation	0.29
	Intrusive experiences	0.38
	Sexual concerns	0.43
	Tension reduction behaviors	0.42

**Table 2:** Association between Past Trauma, Post-9/11 Depression/Anxiety, and Mean TSI Subscale Scores.

dissociation, sexual concerns and tension reduction behaviors (Table 2). However, because the study did not survey reactions immediately after the attacks and cannot compare with outcomes a year later, an anniversary reaction cannot be confirmed. Similarly, Daly and colleagues [36] hypothesized that symptoms of PTSD, depression, anger, alcohol abuse, and functional impairment would increase on the first year anniversary of 9/11. Using a sample of 108 disaster mental health workers, they found a significant increase in depressive symptoms and functional impairment on the first year anniversary of 9/11.

### Protective factors

**Age and years of experience:** In the SVH study, younger clinicians scored significantly higher on the TSI defensive avoidance subscale ( $r=-0.38$ ;  $p<0.05$ ). This finding provides further support to other studies included in the review which found that age and/or fewer years of professional experience increased one's likelihood of developing symptoms of VT [33-35].

**Religion/Spirituality:** In the SVH study, religious participation was inversely related to TSI defensive avoidance scale ( $r=-0.31$ ;  $p<0.05$ ). It also indicated that frequency of religious participation may have a protective effect against VT. However, this finding was not supported by the Creamer and Liddle [35] study.

**Marital status:** The SVH study found that married mental health clinicians reported fewer symptoms of depression and fewer dysfunctional sexual behaviors in those TSI subscales ( $r=-0.30$  for both subscales;  $p<0.05$ ) This finding was consistent with one study [33] demonstrating an inverse relationship between being married and VT among mental health workers who provided services to victims of the 9/11 terrorist attacks. Relationship status was not statistically significant in the other studies [33,35].

### Supervision

Mental health professionals who reported receiving individual supervision at least once a week had lower IES-r intrusion scores than those who received individual supervision less frequently ( $X^2=3.85$ ,  $p=0.05$ ). Professional support and supervision was not evaluated as a variable of interest in the other studies reviewed.

### 9/11 Volunteer Activities

The act of volunteering was not examined as a variable of interest in the SVH survey but it warrants inclusion in the list of protective factors, based on the findings of other studies identified in our review of the published literature, and because of its relevance. Despite Colarossi

and colleagues' [34] finding that the provision of services specific to 9/11 victims was positively related to depressive, anxiety and traumatic stress symptoms, the psychologists in the study of Eidelson and colleagues [37] identified participation in volunteer activities related to 9/11 as an important predictor of increased positive feelings about work. Further, they found that 54% of those who worked in close proximity to Ground Zero reported increased positive feelings about work. This may indicate that mental health workers can experience growth as a result of seeing a victim through to a full recovery based on their interventions; or that clinicians who were secondary or tertiary disaster victims of 9/11 were able to mitigate their own reactions to the attacks by focusing on helping others cope with the impact of the mass trauma.

### Discussion

While literature on disaster psychiatry surged after 9/11 [38], the empirical evidence on VT and the impact of disaster work on mental health providers has strikingly lagged behind. No one disputes the practical implications of addressing VT and ensuring the physical as well as the psychological safety of workers who deliver services to a community hit by a large-scale catastrophe. Project Liberty, launched after 9/11, was the largest federal mental health response to a disaster in US history [39]. Based on the experience of the clinicians in Project Liberty who provided mental health services for three years, and on research evidence that mental health professionals may reduce their risk of VT by obtaining additional training and education related to traumatology [40], the federal government has included pre-deployment training on burnout, compassion fatigue, secondary traumatic stress, and vicarious traumatization [41-46] for all federal disaster crisis counseling programs. Modern disaster management that has emerged post-9/11 has renewed attention to the safety and wellness of disaster responders, including mental health providers. Federal pre-deployment trainings now include webinars and apps that has sections on provider self-assessment and provider self-care before, during and after disaster relief work. This is a step in the right direction in order to improve outcomes for mental health providers and mitigate the negative impact during times of widespread demand for disaster mental health services. However, without comprehensive and rigorous studies on VT specific to clinicians who provide an array of services to the distinct mental health needs in the post-disaster setting, various recommendations for training, self-assessment and personal care are limited and remain anecdotal [47-50].

Similar to previous research, this study found that having a history of personal trauma, less professional experience, and a caseload consisting of larger numbers of primary or secondary trauma victims increased the risk of VT. The results of the SVH study also provide support for previous research which identified having strong social supports, such as being married and having religious or spiritual affiliations, as protective factors against VT. Unlike other studies, however, the SVH study found that a history of anxious or depressive symptoms prior to 9/11 increased the risk of VT while increased workplace support and individual supervision decreased the risk of VT among mental health professionals who provided services to victims of 9/11 [51,52].

### Limitations

Methodological differences across the studies and small sample sizes may explain much of the variability between study findings; these factors, combined with the limited number of studies to draw from, render it difficult to identify clear risk and protective factors of VT among mental health workers who provided services to victims of 9/11 beyond the SVH study. It is also challenging to compare the results because

the terms “secondary traumatic stress” and “vicarious trauma” are used by some researchers interchangeably, while others argue that each has its own specific meaning and therefore its own special characteristics. While all of the studies reviewed in this paper reported some form of secondary psychological stress in mental health professionals, any differences between case definitions of “secondary traumatic stress” and “vicarious trauma” in these studies and the variability in instruments used to measure these differing concepts further complicate our ability to compare results. The SVH study may also be limited by selection bias; it is possible that the mental health workers who agreed to participate in the study may differ from those who did not. Finally, the SVH study may be limited by its cross-sectional design. A longitudinal design would allow for additional inferences about risk and protective factors of VT to be made.

Despite these limitations, it is evident that some mental health workers were at increased risk of developing symptoms of VT as a consequence of providing mental health services to victims of the 9/11 terrorist attacks. Similar susceptibility to occupational-related stress and emotional morbidity could arise in mental health clinicians responding to natural and technological disasters.

## Conclusion

The literature on VT and disaster mental health response have yet to come together in longitudinal and comprehensive theoretically driven studies. Future research should address the overlapping concepts of VT and attempt to replicate as many of the independent variables as possible so as to improve understanding of the factors associated with VT in the context of disasters. This study identified many of the integral risk and protective factors for VT in mental health workers and a meta-analysis of the literature is warranted to facilitate the initiation of longitudinal studies that may further enhance comprehension and management of VT.

Our findings suggest that interventions such as increasing the frequency of individual supervision and maintaining a balanced caseload (particularly with younger, less experienced mental health workers and those with personal vulnerabilities) may reduce symptoms of VT among mental health workers who serve disaster victims.

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