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Are Vicarious Traumatization Symptoms Present in Physicians?

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by

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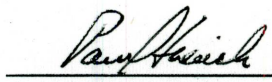
Each person whose signature appears below certifies that this project, in his or her opinion, is adequate, in scope and quality, as a dissertation for the degree of Doctor of Psychology.



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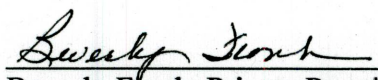

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LIST OF ABBREVIATIONS

APA	American Psychological Association
BM	Burnout Measure
CSDT	Constructivist Self Development Theory
DSM-III	Diagnostic and Statistical Manual of Mental Disorders-Third Edition
DSM-IIIR	Diagnostic and Statistical Manual of Mental Disorders-Third Edition Revised
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition
IES-R	Impact of Events Scale-Revised
MBI	Maslach Burnout Inventory
PTSD	Posttraumatic Stress Disorder
r	Pearson Product-Moment Correlation Coefficient
R	Multiple Regression Correlation Coefficient
VT	Vicarious Traumatization

ABSTRACT

Are Vicarious Traumatization Symptoms Present in Physicians?

by

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Doctor of Psychology, School of Science and Technology
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Research has shown that professionals who serve trauma victims often suffer PTSD symptoms transferred to them through vicarious exposure. This study focused on determining if physicians, a previously unexamined population, experience vicarious traumatization also. Twenty-two male and 15 female physicians from twenty states ranging in age from 32 to 70 with a mean of 20 years experience in diverse medical fields completed and returned survey packets initially mailed to 400 physicians randomly selected from public listings across 20 states. Packets contained a demographic questionnaire and the Impact of Events Scale–Revised (Weiss & Marmar, 1997), which addressed psychological symptoms of PTSD, exposure to traumatic material, work environment details, and personal characteristics. The results supported the hypothesis that vicarious traumatization symptoms are present in physicians. Scores above the cutoff point for a probable diagnosis of PTSD included 13.5% of participants. Additionally 5.4% had scores considered to be of clinical concern. Physicians who reported a larger ratio of trauma to non-trauma caseloads had a significantly higher incident of PTSD symptoms ($\underline{r} = .645$, $\underline{p} < .01$). Debriefing with colleagues, discussion in supervision, and case presentation opportunities were entered into a multiple regression analysis. The model accounted for 55% of the variance in PTSD symptoms ($\underline{R} = .743$, $\underline{R^2} = .553$,

adjusted $\underline{R}^2$ = .480, $\underline{F}(5,31) = 7.658$, $\underline{p}$ = <.01). Constructivist self-development theory (McCann & Pearlman, 1991) offers a framework for identifying and interpreting the trauma response observed in these results. The symptoms physicians do exhibit occur because of the interaction between the physicians' salient psychological needs and the meaning he or she ascribes to the patient's traumatic event. The lack of reported symptoms in some of the participants appeared to be a reluctance to disclose symptom presence or an inability to make an association between their feelings and their patients' trauma, since the IES-R score was different that what would be expected based upon the information participants disclosed on the narrative questions. A difference in the results between physicians and other professionals may be that of personality traits that attract physicians to their profession or a by-product of their medical training.

CHAPTER ONE

Introduction

Are Vicarious Traumatization Symptoms Present in Physicians?

Many professionals who provide health care services to persons who have experienced traumatic events are adversely affected by their work (Figley, 1999; McCann & Pearlman, 1990b, Pearlman, 1998, & Pearlman & Saakvitne, 1995). Specifically, these professionals experience traumatization vicariously as they listen to and treat their traumatized patients. As a result, the professionals often experience traumatic responses, which can be debilitating. This process has been termed vicarious traumatization (McCann & Pearlman, 1990a) and has been found to occur in many professional disciplines (Brown & Campbell, 1990; Bryant & Harvey, 1996; Clark & Gioro, 1998; Crothers, 1995; Figley, 1993; & Jones, 1985, et al.).

Many professionals are exposed to patients who have been traumatized, since approximately half the adults in the United States have experienced a traumatic event (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Although many United States adults have experienced a traumatic event, relatively few undergo a debilitating emotional response (Foy, Osato, Houskamp, & Neumann, 1992). Responses to trauma are as varied as the individuals who experience them (McCann & Pearlman, 1990a). Some individuals react with little if any disruption to functioning, while others develop the psychological disorder known as posttraumatic stress disorder (PTSD) (Ozer & Weiss, 2004). The question of why responses to traumatic events are so varied and who is at risk for developing PTSD has been the focus of trauma research for decades (Figley, 1999).

Affected Professions

The occurrence of a traumatic response from vicarious exposure has been found among the many professions that have been studied. These include psychologists and other mental health workers (Figley, 1993; Figley, 1995; Follette, Polusny, & Milbeck, 1994; & McCann & Pearlman, 1990a), professional and para-professional sexual assault counselors (Johnson & Hunter, 1997), law enforcement officers (Brown & Campbell, 1990; Everly, Boyle, & Lating, 1999; & Follette, Polusny, & Milbeck, 1994), firefighters, (both volunteer and paid), (Bryant & Harvey, 1996; Marmar et al., 1999; McFarlane, 1988; & Regehr, Hill, & Glancy, 2000), emergency medical technicians (Everly, Boyle, & Lating, 1999; Marmar et al., 1999; & Weiss et al., 1995), paramedics (Marmar et al., 1999; & Weiss et al., 1995), nurses (Clark & Gioro, 1998; & Crothers, 1995), ambulance personnel (Wastell, 2002), other non-physician medical staff (Crothers, 1995), military personnel and families of military personnel, (Everly, Boyle, & Lating, 1999; Figley, 1988; Figley, 1993; Jones, 1985; & Motta, Suozzi, & Joseph, 1994), road construction and maintenance personnel (Marmar, et al., 1999; & Weiss et al., 1995), and members of communities near where disasters have struck (Sprang, 2001).

One profession, which has not been represented to date in the study of vicarious traumatization, is the physician. This study will begin to fill that gap by focusing exclusively on physicians and their medical students. It will investigate the occurrence of vicarious traumatization symptoms. Furthermore, it will attempt to assess on the job factors that influence vicarious traumatization responses, such as the frequency of exposure to trauma patients, the ratio of trauma to non-trauma patients, years of

professional experience, and the opportunity for collegial debriefing or case presentations.

Traumatic Events

According to the current *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*, a traumatic event occurs when one is exposed to a stressor in which he/she experiences, witnesses, or confronts a situation that contains real or threatened death, serious injury, or threat to the physical integrity of oneself or others and the person's response included intense fear, helplessness, or horror (American Psychiatric Association [APA], 1994). Also included in this definition of a traumatic event is "learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or close associate" (p. 424).

The experience of trauma is defined by the inclusion of three necessary components (McCann & Pearlman, 1990a), the experience is sudden, unexpected, or non-normative. It exceeds the individual's perceived ability to meet its demands. The experience disrupts the individual's frame of reference and other central psychological needs and related schemas. The first component of this definition serves to exclude the chronic difficulties of life, which though important and perhaps severe, are not considered traumatic (McCann & Pearlman, 1990a). It also allows for the inclusion of experience that may be expected by and ongoing to the individual (i.e. sexual abuse), because it is non-normative to the larger society (Krystal, 1978). The second component explains how the presence of trauma depends upon an individual's appraisal. Trauma is present when the individual senses that it is (McCann & Pearlman, 1990a; Lazarus & Folkman, 1984). The final component emphasizes individual differences. One person's

trauma may be another person's difficult situation. Trauma threatens the psychological core of the individual (McCann & Pearlman, 1990a).

Four types of trauma can occur (Figley, 1999). Trauma can be a simultaneous event where all persons experience it at the same time, like that which occurs when a hurricane hits. Trauma can occur separated by time and location, like that which occurs when one learns a loved one has been taken hostage. Trauma can be shared within the context of a family like that which results when one family member suffers abuse at the hands of another, causing emotional trauma for all members of the family. Finally, there is trauma that is transmitted to others in a relationship after having first appeared only in one member of the relationship. This is the type of trauma described in vicarious traumatization.

Posttraumatic Stress Disorder (PTSD)

Considerable study of traumatic events and the impact upon traumatized people has been conducted. The field of trauma research achieved a milestone with the publication of the *Diagnostic and Statistical Manual of Mental Disorders - Third Edition (DSM-III)* (Figley, 1999) which included the diagnosis of Posttraumatic Stress Disorder (PTSD) for the first time. The concept of PTSD has gained wide acceptance within numerous disciplines, particularly those that have contact with trauma victims (Figley, 1999). It is often referred to colloquially and discussed by the lay public, albeit without the depth of understanding of those with specialized training. The revision of the DSM-III, the DSM-III-R (APA, 1987), modified the symptom criteria slightly, but maintained the essential features of PTSD. The DSM-III-R criteria were:

A. "The person has experienced an event that is outside the range of usual human experience and that would be markedly distressing to almost anyone, e.g., serious threat to one's life or physical integrity; serious threat or harm to one's children, spouse, or other close relatives and friends; sudden destruction of one's home or community; or seeing another person who has recently been or is being, seriously injured or killed as the result of an accident or physical violence.

B. "The traumatic event is persistently reexperienced in at least one of the following ways:

   (1) recurrent and intrusive distressing recollections of the event

   (2) recurrent distressing dreams of the event

   (3) sudden acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucination, and dissociative [flashback] episodes, even those that occur upon awakening or when intoxicated)

   (4) intense psychological distress at exposure to events that symbolize or resemble an aspect of the traumatic event, including anniversaries of the trauma

C. "Persistent avoidance of stimuli associated with the trauma or numbing of general responsiveness (not present before the trauma), as indicated by at least three of the following:

   (1) efforts to avoid thoughts or feelings associated with the trauma

(2) efforts to avoid activities or situations that arouse recollections of the trauma

(3) inability to recall an important aspect of the trauma (psychogenic amnesia)

(4) markedly diminished interest in significant activities

(5) feeling of detachment or estrangement from others

(6) restricted range of affect, e.g., unable to have loving feelings

(7) sense of a foreshortened future, e.g., does not expect to have a career, marriage, or children, or a long life

D. "Persistent symptoms of increased arousal (not present before the trauma), as indicated by at least two of the following:

(1) difficulty falling or staying asleep

(2) irritability or outbursts of anger

(3) difficulty concentrating

(4) hypervigilance

(5) exaggerated startle response

(6) physiologic reactivity upon exposure to events that symbolize or resemble an aspect of the traumatic event (e.g., a woman who was raped in an elevator breaks out in a sweat when entering any elevator)

E. "Duration of the disturbance (symptoms in B, C, and D) of at least one month" (pp. 250-251).

In the DSM-III-R (APA, 1987), an addition was made to the diagnostic features for Category A in which "events experienced by others that are learned about" also

satisfy the criterion of a traumatic event. These events "include, but are not limited to, violent personal assault, serious accident, or serious injury" (p. 424). The development in the concept of vicarious traumatization has been such that the DSM-IV inclusion of vicarious experience is so specific that the language used to describe the traumatic event is "traumatic events that are experienced directly" and "events experienced by others that are learned about" (p. 424).

The Term: Vicarious Traumatization

The concept of vicarious traumatization has been referred to by various different names (Jones, 2001). Originally titled "secondary victimization" in 1982 (as cited in Figley, 1999), it has also been termed "co-victimization" (Hartsough and Myers, 1985), "secondary survivor" (Remer and Elliot, 1988), "emotional contagion" (Miller, Stiff, & Ellis, 1988), "vicarious traumatization" (McCann & Pearlman, 1990b), "traumatic countertransference" (Herman, 1992), "empathetic strain" (Lindy and Wilson, 1994), "compassion stress" and "compassion fatigue" (Figley, 1995), "secondary traumatic stress disorder" (Munroe et al., 1995), and "indirect trauma" (Clark & Gioro, 1998). The term "vicarious traumatization" will be used in this study and is defined as the traumatization experienced by an individual as a result of vicarious exposure to a traumatic event.

Vicarious Traumatization (VT)

Vicarious traumatization is a process that occurs when another suffers the emotional aftermath of a traumatic event he or she did not experience by having become aware of the trauma through an empathic engagement with someone who did experience it (Figley, 1995; Figley 1999; McCann & Pearlman, 1990b; & Pearlman, 1999). The

engagement may occur directly through contact with the trauma survivor or indirectly by learning of the event from others or reading about it. The resulting symptoms, including painful images, emotions, and reactions linked with the traumatic event, are suffered by the person who did not experience it directly. Mental pictures and feelings may ultimately be incorporated into this person's own memory system. The individual may begin to have intrusive thoughts or images and emotional reactions to them. Left unchecked, the ability to function as usual may become markedly decreased. Eventually, the person may develop the same significantly intense symptoms that would be expected had the traumatic event actually occurred to them personally.

Vicarious traumatization has a negative and transforming impact on the individual's worldview. It disrupts the self, spirituality, self-examination, sense of humor, interpersonal relationships, ability to set limits, and imagery system of memory (Neuman & Gamble, 1995; Pearlman, 1999). Learning of another's traumatic events brings an awareness of the abuses and cruelties of people in the world (Kassam-Adams, 1999). Core beliefs about the human condition may be shaken (Figley, 1999). Victimization forces an individual to confront the possibility that the concept of a meaningful and predictable world is false (McCann & Pearlman, 1990b). Central conceptions of attachment, trust, and security, personally or in relation to others, are also questioned (Astin, 1997). Feelings of vulnerability, mistrust, powerlessness, and incompetence emerge (McCann & Pearlman, 1990a). Fear may be evoked by stimuli that had no previous meaning but are now associated with traumatic events (Lansen, 2001). In vicarious traumatization, nightmares, anxiety, and intrusive images of another's trauma, are experienced (McCann & Pearlman, 1990b). If vicarious traumatization is not

resolved, the individual often becomes embittered and cynical, which causes alienation from family, friends, and colleagues (Lansen, 2001). The twofold danger of vicarious traumatization is that it not only affects the individual but the individual's response to the traumatization may actually harm the original victim (Astin, 1997).

The helping professional also suffers an additional problem of flexibility when working with trauma victims in emergency situations. It is important to know this because traumatic events are varied, unpredictable, and uncontrollable, so the response to them cannot be dictated by hard and fast rules, but must include flexibility. Helping professionals frequently experience shifts in identity when they are confronted with the experience of trauma victims (Charney & Pearlman, 1998). This is particularly true when the helping professional is responding to a trauma outside of an office or controlled situation. The role assumed by the helping professional may differ from that which is usually taken. For example, a therapist who is used to a relaxed office situation where he/she can calmly sit and listen to a client may be responsible for educating and debriefing a large group of victims or other helpers in a scene where emergency personnel are coming and going while victims are being shuttled to various locations. The chaos of the site stands in contrast to the ability to control one's own environment, so personal flexibility and identity maintenance capabilities are challenged. The effects of vicarious traumatization may be profound, disruptive and painful, and may persist for months or years after association with the traumatized person (McCann & Pearlman, 1990b).

Differentiation among Concepts

While no distinction is made among the terms and concepts that describe vicarious traumatization listed above, vicarious traumatization is sometimes linked to or confused with other concepts. The two most often discussed concepts that have been reported to parallel vicarious traumatization are "countertransference" and "burnout."

Countertransference

Agreement regarding the definition of countertransference among researchers, particularly as to how inclusive it should be, is not readily achieved (Sexton, 1999). Often countertransference is said to be a helping professional's emotional response to the client (Figley, 1999). This is not a historically correct definition. Countertransference, traditionally defined, includes the elicitation by a therapy client of the therapist's internal conflicts and unresolved issues (Blair & Ramones, 1996). An often quoted definition of countertransference is "the affective, ideational, and physical responses a therapist has to a client, his [or her] clinical material, transference, and re-enactments and the therapist's conscious and unconscious defenses against affects, intrapsychic conflicts and associations aroused in the former" (Pearlman & Saakvitne, 1995, p. 23). Berger (2001) contends, "countertransference can be in response to the client's transference, or in reaction to the client's experience, or it can be subjective resulting from the therapist's own character structure or history" (p.190). Dunning (1994) concluded that countertransference is not limited to a therapeutic relationship, but occurs in other workplace relationships as well.

Countertransference is a response to a particular individual, which may or may not dissipate (Sexton, 1999). It is an internal, unconscious, dynamic process. However,

vicarious traumatization involves the change in the helping professional's inner experience of self, other, and world that results from the empathetic engagement with a victim's traumatic material (Pearlman & Saakvitne, 1995). Countertransference is specific to the given client-therapist dyad, while vicarious traumatization is experienced across all relationships and settings. Countertransference is a short-term reaction to working with particular clients, but vicarious traumatization is a long-term alteration in the therapist's own cognitive schemas about self and others (McCann & Pearlman, 1990b). "Countertransference is temporarily linked to a particular period, event, or issue in the therapy or in the therapist's inner or external life as it interacts with the therapy" (Pearlman & Saakvitne, 1995, p. 33), while vicarious traumatization is "permanently transformative."

Burnout

"Burnout" has been used to describe various states of job discontent, from the ongoing difficulties of workers who experience stress on the job to a general condition of psychological, emotional, and physical fatigue. Burnout refers to the psychological stress of working with difficult populations. The two most widely used measures of burnout are the Maslach Burnout Inventory and the Burnout Measure. The Maslach Burnout Inventory (MBI) created by Maslach and Jackson (1981) measures emotional exhaustion, depersonalization, and decreased personal accomplishment. The Burnout Measure (BM) (Pines & Arnson, 1988) measures physical exhaustion, emotional exhaustion, and mental exhaustion. The common variable in these two widely used measures is emotional exhaustion, which has been characterized as the precursor to the physical, emotional, behavioral, interpersonal, and work-related symptoms of burnout.

Burnout has been the subject of considerable research (Figley, 1999; Lansen, 2001; McCann & Pearlman, 1990b). The process of burnout starts gradually but becomes progressively worse with steady contact with stress on the job. Unlike burnout and its gradual onset, vicarious traumatization can occur suddenly and without warning. Vicarious traumatization includes feelings of vulnerability and uncertainty that are not present in burnout. Feelings of remoteness from social support systems are present in vicarious traumatization, although no physical separation has occurred. This differs from burnout because the estrangement from others is not the result of withdrawing or avoiding others as it is in burnout, and the feeling of remoteness can be experienced even when in the company of the social support system. The feelings experienced in vicarious traumatization are often abstract and dissociative, which makes it difficult for the individual suffering from vicarious traumatization to directly relate them to the real causes, while burnout sufferers know their feelings are related to their jobs.

Vicarious Traumatization is Broader than Burnout and Countertransference

Vicarious traumatization is an interactive process that stems from both the external stressors of the victim's traumatic experience and the internal aspects of the trauma worker's worldview and psychological needs (McCann & Pearlman, 1990b). In this way vicarious traumatization can be shown to be a broader concept than burnout and countertransference, since burnout responses come from the external stress of the work situation and countertransference responses arise from the internal dynamics of the helper.

McCann and Pearlman (1990b) examined the literature on burnout and countertransference and state the following to aid in distinguishing among concepts. The

literature on burnout focuses on characteristics of the stressor in that it suggests that the therapist is distressed because of the nature of the external event. The countertransference literature focuses on preexisting personal characteristics to the extent that it attempts to explain the individual's responses as a function of his or her previous unresolved psychological conflicts. Vicarious traumatization differs, as it is an interactive response shaped by characteristics of the situation and the helper's psychological needs and cognitive schemas. The effects of vicarious traumatization are pervasive, cumulative, and likely to remain chronic if untreated. .

Vicarious Traumatization is a Subset of PTSD

Historically, the only differentiation made between the symptoms of vicarious traumatization and those of PTSD has been whether the affected person experienced the event directly or learned about it from another (Figley, 1995; Figley 1999; McCann & Pearlman, 1990a; McCann & Pearlman, 1990b; & Pearlman, 1999). Since the inclusion of indirect experience is part of the PTSD diagnostic criteria in the DSM-III-R and expanded upon in the DSM-IV, it seems logical that vicarious traumatization should be considered a subset of PTSD.

The symptom cluster of vicarious traumatization is the same as PTSD. Vicarious traumatization symptoms fit into the three categories of PTSD: 1) re-experiencing; 2) avoidance; and 3) increased arousal. For example, re-experiencing may take place because persons suffering vicarious traumatization may experience painful images and emotions associated with another's traumatic event and over time may incorporate these into their own memory system. Failure to resolve these feelings may cause the person to

feel numb, emotionally distant, and avoid situations or persons associated with the trauma (avoidance). Finally, there are increased arousal symptoms.

The only difference between vicarious traumatization and PTSD is that PTSD does not need to include empathy, since the experience is direct, but vicarious traumatization does because the experience is removed (indirect). It is interesting that the body of research literature on trauma has tested and contended that vicarious traumatization symptoms are the same as those of PTSD, but the literature has stopped short of actually stating that vicarious traumatization is a subset of PTSD.

Explanatory Models of Posttraumatic Stress Disorder

Mowrer

Mowrer (as cited in Foy, et al., 1992) proposed a two factor learning model to explain the occurrence of posttraumatic stress responses. The first factor is the classical conditioning of a fear response, when a previously neutral stimulus is paired with a fear inducing unconditioned stimulus (UCS). The UCS produces a fear response (UCR). The previously neutral stimulus through its pairing with the UCS now becomes a conditioned stimulus (CS) eliciting the conditioned response (CR) of fear.

The second factor in this two factor learning model is instrumental conditioning. In the case of traumatic stress reactions the instrumental learning is of escape and/or avoidance responses intended to reduce fear. The reduction in fear response serves to negatively reinforce the escape and/or avoidance behaviors. While this model is helpful in that it predicts intrusion, avoidance, and increased arousal for those who have had a direct traumatic experience, it does not address vicarious experience.

Foa and Rothbaum

Foa and Rothbaum (1989) outline a psychosocial model of PTSD. In this model the event, which is unpredictable, uncontrollable, and dangerous, is linked with the cognitions, emotions, and behaviors that were occurring at the time of the event. This cognitive model of posttraumatic stress response states that thinking of or being reminded of the traumatic event activates the same cognitive, emotional, physiological, and behavioral responses. The association is described metaphorically as being like the processes of a memory network. If the event component in the network is stimulated, it triggers the activation of the cognitive, emotional, physiological, and behavioral response components. For example, if a woman was raped by a man who was wearing cologne, then smelling that same cologne on another man would remind her of the traumatic event, which would elicit an equivalent traumatic response to, that which originally occurred. Foa and Rothbaum specify that unique to a traumatic stress response is the attribution of danger the individual makes in the meaning of events that were previously non-threatening. While this model too is helpful in predicting re-experiencing, avoidance, and increased arousal, it also does not address indirect experience.

Yehuda

Biological models of posttraumatic stress responses have focused on the increased intensity and duration of arousal present in individuals who have suffered a traumatic event, as well as the processes and structures of the brain (Ozer & Weiss, 2004). Yehuda (2000) focuses on two key areas of the brain, the amygdala and hippocampus, thought to be involved in the occurrence of posttraumatic responses. In this theory, Yehuda identified the amygdala as the center of the fear response and the hippocampus as the

center for consolidation of emotional memory. According to the theory, it is the pathway between these structures that produces PTSD, since memory of a traumatic event produces the fear response and the fear response elicits the memory of the traumatic event.

Also indicated in Yehuda's biological model of trauma response is the hypothalamic-pituitary-adrenal axis. This axis is the part of the brain that controls reactions to acute stress and individuals with PTSD have been shown to be unusually sensitive in this area. These brain areas are involved in the registration of situations perceived as potentially dangerous and they are involved in the formation of the memories of these events.

The underlying phenomenon articulated in the biological models of PTSD is that "memories formed under emotionally arousing situations behave differently than those that are not" (Ozer, Best, Lipsey, & Weiss, 2003, p. 54). This model contends that memory of a traumatic event produces a fear response and a similar fear response elicits the memory of the traumatic event. Once again, this model is helpful because it predicts re-experiencing, avoidance, and increased arousal, but it too does not address those whose experience of trauma is indirect.

Explanatory Models of Vicarious Traumatization

Wilson and Lindy

Wilson and Lindy (1994) explain trauma response in a model based upon a broad psychoanalytic foundation and the special relationship between the traumatized person and a therapist. In their psychoanalytic object relations model, the emphasis is on the

capacity of the helping professional to be empathetic in the therapeutic relationship, have an empathetic understanding of the traumatic event, and identify with the trauma victim.

Wilson and Lindy (1994) claim empathy with the trauma victim is easy initially, but becomes more difficult. Over time the trauma victim begins to project the trauma related emotions onto the helping professional. The relationship is challenged as the professional struggles to continue to be an empathetic helper, while being pulled into a role from the original traumatic relationship. Aspects of the traumatic relationships are unintentionally repeated in the victim-helper relationship, because the trauma victim has not been able to resolve the traumatic experience. Through this parallel process, the helping professional is exposed to the trauma situation. The helping professional then identifies with the trauma victim's painful memories and feelings. It is at this point, according to the model, that the helping professional risks developing PTSD symptoms.

The model contends that if the helping professional can maintain balance between empathy and distance the PTSD symptoms will not occur (Wilson & Lindy, 1994), but if the helping professional "goes off track" (p. 209), traumatic symptoms result. The authors describe two ways in which the helping professionals can go off track. The first is to suppress empathy and maintain too great a distance from the trauma victim (e.g. avoidance, withdrawal, & intellectualize). The second way the helping professional can go off track is to make too strong of an identification with the trauma victim (e.g. poor boundaries, over-involvement). The helping professional needs to experience empathy while maintaining therapeutic distance.

Wilson and Lindy hold the position that all helping professionals are at risk for suffering PTSD symptoms through vicarious contact, regardless of personality factors,

because both empathy and distance are necessary to treat the trauma victim. This model is helpful because it demonstrates how the experience of trauma can be transferred to a therapist vicariously. However, this model requires an intimate relationship between the parties, so it does not explain how vicarious traumatization can occur without the relationship, as would occur through a process such as reading about the trauma. Finally, this model defines when the therapist is at risk, but does not adequately address why some therapists develop PTSD symptoms but others do not.

Lansen

Lansen (2001) proposed a model to explain how learning of another's traumatic event can cause a traumatic response. His model is also based on psychoanalytic object relations theory. The crux of this model focuses not on the specific traumatic event, but the injury to the individual's inner mental world that results from the trauma. The injury is to the trauma victim's self, and it is transmitted to the helping professional when he/she engages in an intense therapeutic relationship with the trauma victim.

During the trauma event, early images of childhood when the distinction between self and other was absent are revived. This regression to an early, undifferentiated cognitive state is very primitive and highly affectively charged. Cognitions are reduced to polarizations like "good-bad" or "victim-aggressor." The trauma is experienced as a repetition of "bad" incidents and emotions, thought to equate with the situation of being totally dependent upon the external world to fulfill an individual's basic needs. The trauma victim is unable to differentiate the external "bad" (the trauma) from the internal (self), so the self is judged as "bad" and is subsequently injured.

During the therapeutic relationship, the trauma victim unconsciously pulls the helping professional into reenactments of the relationships present in the original trauma (Lansen, 2001). In these reenactments the aggressor and victim roles may be played by either the trauma victim or the helping professional. The helping professional is engaged in a dual process where he/she is identifying with the victim through the experience of the traumatic relationship and at the same time trying to assist and protect the trauma victim. If during the reenactment of the trauma the helping professional is in the role of the victim, he/she experiences the trauma from the victim's perspective and can identify with the victim's experience and need for protection. If the helping professional is in the role of aggressor during the reenactment, he/she experiences the traumatic conflict of simultaneously victimizing (reenactment role) and trying to protect the trauma victim (therapeutic role). Lansen contends it is through this process that the trauma is transferred to the helping professional vicariously.

Some parallels in these two vicarious traumatization models should be noted. Both models require a relationship between a trauma victim and a professional providing therapy. The professional must be empathetic to the trauma victim, have an understanding of the traumatic event, and have some level of identification with the victim. Reenactments of the roles of perpetrator and victim take place within the context of therapy in each model. Finally, a dual/parallel process for the therapy provider is identified by both. Lansen's model differs from Wilson and Lindy (1994) in that it is not the empathetic engagement with the aspects of the traumatic event that cause traumatization, but it is the polarization of roles (victim/aggressor) and the internal meaning ascribed (good/bad) that cause the traumatization. This model is helpful because

it too demonstrates how the experience of trauma can be transferred to the therapist vicariously. Once again this model also fails to address vicarious traumatization situations in which there is no interacting relationship and does not explain why some develop symptoms and some do not.

Figley and Others

Although not an explanatory model, Figley's (1999) formulation of the vicarious traumatic response is similar. His ideas are also based upon empathy in the relationship between trauma victim and helper. He argues that empathy with the primary victim's experience is what allows the other individual to understand and connect with the primary victim in a way that allows the trauma to be transferred vicariously. He believes helping professionals who see themselves as "rescuers or saviors" are affected the worst, because the helper's sense of identity is dependent upon the "recovery" of the traumatized person.

The shared experience or empathetic engagement that occurs between the helping professional and the trauma victim when they enter into a relationship is the foundation upon which many theorists believe the trauma experience is transferred (Eisenberg, 1989). When the relationship is formed, the helper becomes part of the victim's environment and shares the victim's experience (Adler, 1997). The sharing of the traumatic experience increases the helping professional's risk of developing traumatization symptoms (Saakvitne, 2002). This is important because it demonstrates that empathy in the relationship is necessary in order for vicarious traumatization to occur, but like the above models it requires a relationship, something that is not always present such as when victim/helper contact is brief or indirect.

A Combination PTSD and Vicarious Traumatization Model

McCann and Pearlman

The final explanatory model, McCann and Pearlman (1990a), is the most comprehensive traumatic response model and the one that will be tested in this study. Because some of the above models are linked directly with the experiencing of the traumatic event, they do not sufficiently explain the process of vicarious traumatization. Other of the above models offer an explanation about the occurrence of traumatic responses with vicarious exposure in psychotherapeutic relationships, but they are not helpful in understanding other professional relationships in which a traumatic response occurs or situations in which the trauma response occurs outside of the intense psychotherapeutic relationship (e.g. the traumatic event is learned about through reading of it or the professional has some other limited contact).

The McCann and Pearlman model is an interactive, more comprehensive perspective on adapting to trauma because it considers the empirically demonstrated important characteristics of the event and the full complement of person characteristics. It brings together trauma literature and individual development to help understand common and unique responses to trauma. This model is helpful because it predicts re-experiencing, avoidance, and increased arousal through either direct or indirect exposure and demonstrates how trauma is transferred vicariously to others, including but not limited to therapists.

McCann and Pearlman detail a personality theory, *constructivist self-development theory (CSDT)*, that can be applied to any person who experiences traumatic response symptoms, either from direct or indirect exposure to the traumatic event. Constructivist

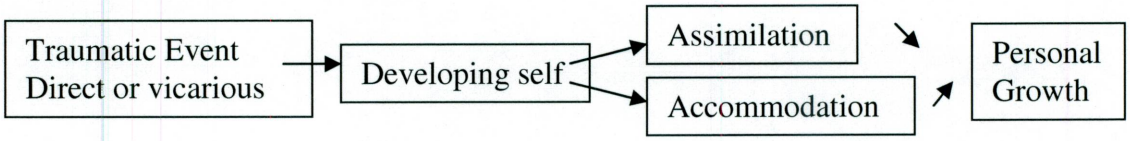
self development theory was first detailed as a general traumatic response model, but it is sufficiently comprehensive to explain vicarious traumatization responses. Using this model as a theoretical foundation it can be clearly seen that vicarious traumatization fits as a subset of PTSD.

The authors draw upon the theoretical perspectives of object relations, self-psychology, social learning, developmental, cognitive-experiential self-theory, and other cognitive theories in developing this theory. McCann and Pearlman (1990a) propose a model in which traumatic response symptoms result from an interaction between life experiences and the developing self. The specificity involved, they contend, allows for explanation of individual reactions to traumatic events, whether exposure to the traumatic event is direct or indirect.

The process begins when the individual is exposed to a traumatic experience, either directly or indirectly. The individual's unique response includes the meaning and images he/she has of the traumatic material and the individual's inner experience of self and the world. The traumatic information must either be assimilated into the individual's existing understanding of self and the world, or his/her understanding must be changed to accommodate the new information (Figure 1). Assimilation and accommodation generally result in increased differentiation and maturation of the psychological system and personal growth. Complications in assimilation and accommodation result in traumatic response symptoms. This complication occurs because the traumatic experience does not "fit" into the existing schemas of self and world. The individual is forced to either accommodate the trauma, which can shatter personal beliefs, or the individual

'rewrites" the traumatic event so it fits existing schemas. In either case, the process disrupts psychological growth.

Event "fits" into existing schemas



Event does not "fit" into existing schemas

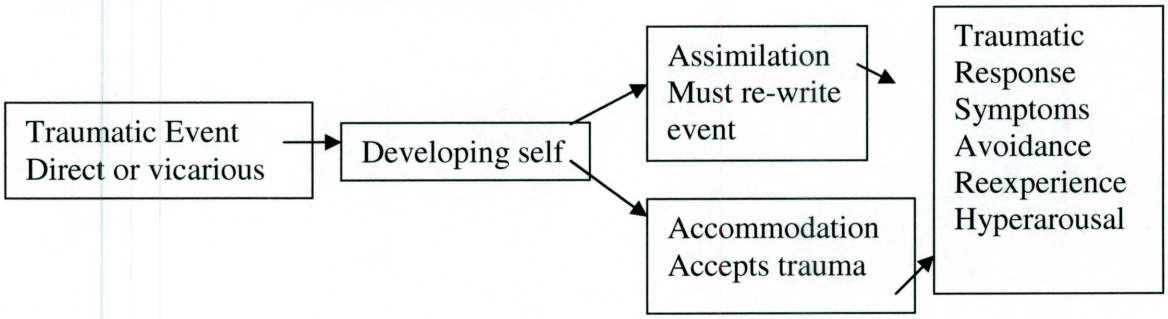


Figure 1. Vicarious Traumatization, Assimilation and Accommodation (McCann & Pearlman, 1990a).

Constructivist Self Development Theory (CSDT)

Constructivist

As the title indicates, McCann and Pearlman (1990a) base their personality theory on a constructivist perspective. A constructivist perspective is founded on the premise that all individuals actively create and construe their own reality as they interact with their environment. This construction of reality enables the individual to make his/her own representational model of the world. This representational model becomes the framework from which the individual orders and makes meaning of all new experiences. This

framework does not simply serve as a filter, but is interactive, allowing assimilation and accommodation of new information.

Self

Self is the next major component in the title of the theory. McCann and Pearlman (1990a) define the self as "the seat of the individual's identity and inner life" (p.16). They describe four aspects that make up the self (self-capacities, ego resources, psychological needs, and cognitive schemas) and the functions each serves. The four aspects of the self develop in conjunction with and impact each other.

Self-capacities

In CSDT, self-capacities maintain the inner sense of identity and regulate self-esteem. Included in self-capacities are the abilities to tolerate strong affect without self-fragmentation or acting out (have intense emotion, positive or negative, without losing a sense of psychological stability), be alone without being lonely, calm oneself through self-soothing, and regulate self-loathing when confronted with criticism or guilt (accept and integrate criticism without detriment to self-worth). Self-capacities are how one can experience ambivalence or have contradictory thoughts and feelings. Without self-capacities the world is dichotomized into black and white or right and wrong.

Ego Resources

Ego resources regulate interactions with others in a constructive way. Included in ego resources are intelligence, willpower, initiative, awareness of psychological needs, empathy, and the abilities to introspect, strive for personal growth, take perspective, foresee consequences, establish mature relations with others, establish boundaries, and

make self-protective judgments. Ego resources are particularly important in helping one to recover from trauma and preventing future harm (McCann & Pearlman, 1990a).

Psychological Needs

Psychological needs, although often not in awareness, motivate behavior. The disruption from trauma can cause a need to become more salient and negative schemas related to that need can result. A frequent consequence of trauma is that the individual may come to believe the need cannot, will not, or should not be met. Individuals have certain needs that are salient prior to traumatic exposure, and these needs take part in determining psychological response to traumatic events when they do occur. The psychological needs of frame of reference, safety, trust and dependency, esteem, independence, power, and intimacy, although universal human needs, are the focus of constructivist self development theory because they are particularly salient to individuals experiencing trauma (McCann & Pearlman, 1991).

Frame of reference.

The concept of frame of reference is comparable to the idea of a meaningful, just, predictable, and controllable world. Frame of reference is represented in schemas related to causality or an individual's attributions about why events occur. Victims of trauma often repeatedly question why the event happened to them, or in the case of witnessing another's experience, why they were spared when others were not. Frame of reference is a broad construct that includes personal perspective, meaning, interpretation, and organization (McCann & Pearlman, 1990a).

Safety.

Safety needs in CSDT relate to feeling invulnerable to harm. The impression that one is safe is necessary for maintaining hope about future life experiences. If an individual focused on all the possible dangers in the world, he/she would be unable to function or take the risks necessary to grow. "Frozen fear", an inability to take any action, is often experienced by trauma victims, as the sense of security is being broken.

Trust/dependency.

Support from others and the belief that other people can be relied upon is an important part of trust and dependency. There is a strong desire to believe in the word or promise of another, and to know that another will be there to meet needs. Equally important in CSDT is the ability to trust oneself, one's own perceptions, and one's own judgments. Without self-trust, action taking and decision making are blocked.

Esteem.

Esteem is valuing, knowing, and enjoying oneself. Esteem is also the need to be valued by others, to have one's worth respected, and to value others. Recognition and validation are at the core of esteem. Esteem integrates and reconciles the classic conflict of good versus bad in the self and related to others (McCann & Pearlman, 1990a).

Independence/ power.

Independence relates to the need to control one's own rewards and punishments and to be in control of one's own behavior and destiny. Independence is autonomy and personal freedom. Independence is differentiated from power; power is the individual's ability to direct or exert control over the environment, whereas independence concerns the ability to control oneself (McCann & Pearlman, 1990a).

Intimacy.

Intimacy is the desire to feel connected to others, through individual relationships and through belonging to the community. Without intimacy an individual is left feeling isolated and alienated. This inner emptiness is associated with psychic numbing, emotional detachment, and loneliness. When the loss of connection extends to the relationship with oneself (feeling disconnected to oneself), the individual may be unable to tolerate being alone and become dependent upon others (McCann & Pearlman, 1990a).

Cognitive Schemas

The above detailed psychological needs are similar to the elements in Erikson's developmental tasks; but McCann and Pearlman (1990a) view the evolution of these needs as more advanced cognitive developmental tasks, and necessary precursors to the creation of cognitive schemas. Cognitive schemas organize the experiences of self and world. They are relatively realistic and evolve by responding to the environment. Included in cognitive schemas are beliefs, assumptions, and expectations related to psychological needs. Just as life experiences shape the development of schemas, they can also disrupt schemas. This is what happens when trauma is experienced. Usually life experience information is assimilated into the existing schemas, but the experience of trauma does not generally "fit" into the existing schema. When this occurs, the discrepancy causes a need for the schemas to be changed through the process of accommodation. Schemas dictate how trauma is stored in memory.

Development

Finally, as the title indicates the theory is developmental. McCann and Pearlman (1990a) describe how individuals grow and change over time through interactions with

the environment. Information about self and other is assimilated through internalization and reinforcement. Through this continuing interaction the individual develops an increasingly differentiated sense of self and manner of relating to others. Over time the unique constellation of self-capacities, ego resources, psychological needs, and cognitive schemas evolves.

The Experience of Trauma through Constructivist Self Development Theory

The trauma experience is the result of the interaction of life experiences, including personal history, trauma history, and social and cultural context and the developing self. First, there occurs exposure to a non-normative or highly distressing event or series of events that potentially disrupt the self. The individual responds to this exposure through his/her unique representation of reality. By definition, the experience is non-normative or distressing therefore, it does not fit into the individual's existing schemas and cannot be assimilated. The inability to assimilate or accommodate the experience causes internal conflict. The event must either be re-interpreted to fit into the existing schemas or the schemas must be changed to accommodate the event (Figure 2).

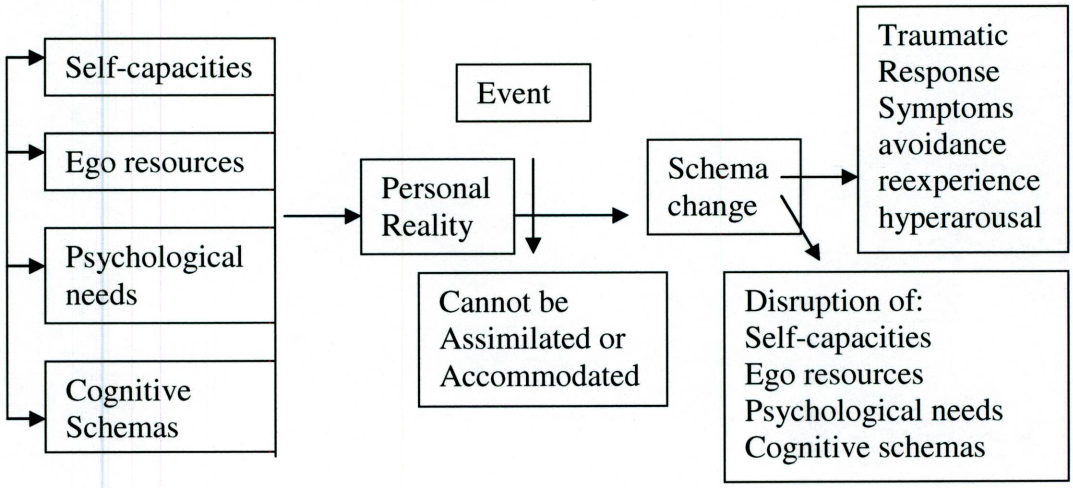


Figure 2. The experience of trauma (CSDT) (McCann & Pearlman, 1990a).

Posttraumatic stress symptoms ensue and the disruption of the developing self continues. If there is an extreme and threatening discrepancy between the event and the existing schema, a response occurs. More specifically, if the circumstances of the event are specifically related to one of the psychological needs that are salient to the individual, which can be identified with such measures as the Trauma Symptom Inventory (Briere, 1995), the individual finds the situation traumatic. If the event does not impact a salient need, then the situation is experienced as merely shocking (Figure 3).

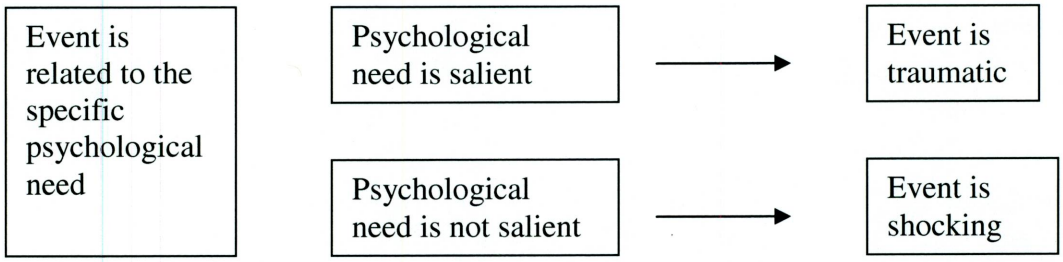


Figure 3. Psychological need saliency dictates response (McCann & Pearlman, 1990a).

For example, a person whose psychological need for safety is salient will experience more trauma related to an assault on that need than will a person who does not have safety as a salient need. This is demonstrated by the following: A couple leaves the window slightly open when they go to bed. During the night, an intruder enters and robs the couple at gunpoint. The husband's need for safety is not a salient need, therefore he can be satisfied with the installation of a security system, but because the wife's need for safety is a salient need, a security system is not sufficient for the wife. The wife experiences PTSD as a result of the event, but the husband recovers completely with the installation of a burglar alarm.

Trauma can disrupt capacities, resources, needs, and schemas or any combination thereof. The verbal and image memory of the traumatic experiences remains. The process

of traumatization is identical when the helping professional learns of another's experience, with the only difference being that the exposure occurred vicariously.

Correlates of Traumatization

Following the model of constructivist self development theory, a helping professional's vulnerability to experiencing a traumatic response and the way in which the symptoms of the response are expressed are the result of the interaction of the helping professional's characteristics and the environment (Pearlman & Mac Ian, 1995). The intrapersonal and interpersonal characteristics of the helper are part of the self, including the self-capacities, ego resources, psychological needs, and cognitive schemas, and the environmental characteristics are related to the developmental aspect.

Intrapersonal Correlates

The research literature has identified some intrapersonal correlates that are associated with an increase in incidence and severity of a traumatic response. These include factors such as: a weakened or undifferentiated sense of identity (Weiss, Marmar, Metzler, & Ronfeldt, 1995), external locus of control (Marmar et al., 1999; Weiss et al., 1995), alexithymia (the inability to be aware of or express emotion) (Wastell, 2002), a personal history of trauma victimization (Pearlman & Mac Ian, 1995), negative beliefs about self-efficacy, particularly as it relates to the inability to alleviate the suffering of others (Bryant & Harvey, 1996; Regehr, Hill, & Glancy, 2000), increasing time during which the helping professional has been working with trauma victims (Pearlman & Mac Ian, 1995), higher trauma to non-trauma related job experience (McCann & Pearlman, 1990b), and utilizing avoidance, withdrawal, or emotional suppression to cope with

exposure to traumatic information (Johnson & Hunter, 1997; Marmar et al., 1999; Weiss et al., 1995; & Wastell, 2002).

Interpersonal Correlates

In addition to the intrapersonal correlates, the following interpersonal correlates have been identified: infrequent or reduced interaction with family, friends, and colleagues (Chestman, 1999), poor personal boundaries (Pearlman & Saakvitne, 1995), dissociation from patients (Salston & Figley, 2003), and lack of colleague support and recognition (Brown & Campbell, 1990, Everly, Boyle, & Lating, 1999; Jones, 1985; & McFarlane, 1988).

Environmental Correlates

Environmental correlates have also been demonstrated to be associated with an increased risk of traumatic response. These include: the percentage of trauma victims in the helping professional's caseload (Chestman, 1999; McCann & Pearlman, 1990b; Pearlman & Mac Ian, 1995), the amount of professional exposure to trauma (Marmar et al., 1999; Weiss et al., 1995), lack of debriefing opportunities (Everly, Boyle, & Lating, 1999; McFarlane, 1988), and holding a rank or management position that has both the responsibility to act directly with the trauma victim and supervise others who are at the trauma scene (Brown & Campbell, 1990).

Risk Reducing Correlates

The trauma literature has identified some correlates that serve to reduce the risk of experiencing a traumatic response. These are process supervision opportunities (Cramer, 2002), devoting time to other personal and professional interests (McCann & Pearlman, 1990b), debriefing or case presentation opportunities (McCann & Pearlman, 1990a), a

relational support system, which can include colleagues (Chestman, 1999), and engaging in spirituality (Salston & Figley, 2003).

Aim of the Present Study

The ever-increasing body of research pertaining to professional's traumatic responses suggests that anyone who interacts with trauma survivors in a capacity that relies on understanding the trauma experience is at risk for developing a debilitating traumatic response. The majority of research has investigated mental health workers, emergency personnel, and non-physician hospital staff. However, others exposed to victims' experience, either directly or indirectly, are likely to be affected. This project was designed to test the constructivist self-development theory model of vicarious traumatization with physicians as participants. Studies using physicians as participants in vicarious traumatization research are not currently present in the research literature, and it was the aim of this study to explore the extent to which vicarious traumatization symptoms are present in this population. This project has also outlined intrapersonal, interpersonal, and environmental correlates that contribute to the risk or resiliency of developing a debilitating traumatic response and examines some of these correlates.

This study aimed to investigate if Posttraumatic Stress Disorder symptoms are present in physicians, resident physicians, and medical students. It sought to determine if patients who have experienced a traumatic event transfer the traumatic response vicariously to the physician as a result of the physician's exposure to the patient. The study examined whether physicians, resident physicians, and medical students who report having been exposed to trauma through the traumatic experiences of their patients show a higher incidence of Posttraumatic Stress Disorder symptoms than those who do

not report vicarious exposure. The ratio of trauma to non-trauma patients treated by the physician was examined to determine if it affects the incidence of vicarious traumatization. The opportunity for debriefing, discussing, or presenting trauma cases were examined as potential mediators to see if physicians, resident physicians, and medical students who have the opportunity to debrief with colleagues, discuss cases inside or outside of supervision, or perform case presentations have fewer incidents or less intensity of PTSD symptoms.

Hypotheses

Based upon the constructivist self development theory (McCann & Pearlman, 1990a), the following hypotheses are made:

(1) Posttraumatic Stress Disorder symptoms will be present in physicians, resident physicians, and medical students

(2) Physicians, resident physicians, and medical students who report having been exposed to trauma through the traumatic experiences of their patients will show a higher incidence of Posttraumatic Stress Disorder symptoms

(3) Physicians, resident physicians, and medical students with more trauma patients, or a larger ratio of trauma to non-trauma patients, will experience more frequent or more intense Posttraumatic Stress Disorder symptoms

(4) Physicians, resident physicians, and medical students who have the opportunity to debrief with colleagues, discuss cases inside or outside of supervision, or perform case presentations will have fewer incidents or less intensity of symptoms, since the collegial contact will mediate the effects of traumatization.

CHAPTER TWO

Method

Participants

Participants were recruited through direct mailing to their place of employment. Of the four hundred packets distributed, thirty-seven survey packets were returned completed for an overall response rate of 9.25%; one survey packet was returned blank with a notation that read, "I am sorry, but I am no longer practicing medicine." All participation was voluntary and anonymous and this was explained in the request for participation letter included in the survey package. Participants were 22 males and 15 females, who ranged in age from 32 to 70 years with a mean age of 48 years. Ethnic background was identified as follows: 73% (n = 27) Caucasian; 13.5% (n = 5) Asian; 5.4% (n = 2) Latino; 5.4% (n = 2) African American; and 2.7% n = 1) Declined to State.

All participants identified themselves as physicians, however one included that she used to be a nurse. Experience ranged between 7 and 37 years with a mean of 20 years experience. The following specialties were included: 35.1% (n = 13) family practice; 13.5% (n = 5) emergency medicine; 13.5% (n = 5) internal medicine; 8.1% (n = 3) general practice; 5.4% (n = 2) plastic surgeon; 5.4% (n = 2) orthopedic surgery; 5.4% (n = 2) pulmonary medicine; 5.4% (n = 2) psychiatry; 2.7% (n = 1) ophthalmology; 2.7% (n = 1) pediatric orthopedics; and 2.7% (n = 1) pediatrics.

This study had an exploratory component in that it was looking at the physician, resident physician, and medical student as an unstudied population; therefore, there were no set exclusion criteria. However, based on the objective of the study to determine if

vicarious traumatization occurs in physicians, at analysis there were no criteria that would have indicated a need for exclusion.

Materials

A survey instrument requesting participation (Appendix A) informed participants that the study was being conducted to examine physicians' responses to trauma cases. In an attempt to increase response rate, participants were informed that little data exists on physicians as a population. Potential participants were informed that participation was voluntary and anonymous. The return of survey materials by participants served as implied informed consent. Survey materials addressed four primary areas: (1) psychological symptoms of PTSD, (2) exposure to traumatic material, (3) work environment details, and (4) demographic characteristics.

Demographic Questionnaire.

A demographic questionnaire (Appendix C) was administered. This instrument provided necessary descriptive information such as age, gender, ethnic background, years of medical experience, and job rank/title. The questionnaire also provided descriptive work environment information such as the type of medical setting in which the participant works, if he/she has exposure to trauma cases and how many, what supervision is available, and case debriefing, discussion, presentation opportunities. This questionnaire also served the purpose of collecting some descriptive individual experience information such as direct trauma experience, indirect trauma experience, and perceived locus of control.

Impact of Events Scale - Revised (IES-R).

The IES-R (Weiss and Marmar, 1997) (Appendix D) is a 22-item scale designed to measure current subjective distress that stems from a stressful life event. The scale consists of three subscales: intrusion, attempts to eliminate re-experiencing (avoidance), and hyperarousal. This scale requires participants to indicate from a list of difficulties how distressing each is as it relates to a stressful event. Participants were instructed to use any stressful life event of one of their patients that they learned about during the course of providing medical attention.

Responses are rated 0 (not at all), 1 (a little bit), 2 (moderately), 3 (quite a bit) and 4 (extremely). The IES-R may be scored as a continuous measure yielding a continuous score whereby higher scores indicate greater intrusion, avoidance, and hyperarousal symptom severity. The score generally used as the cutoff point for a probable diagnosis of PTSD is 33; however a score of 24 indicates that PTSD is a clinical concern. Sample items include, "I thought about it when I didn't mean to" and "I tried to remove it from memory."

This instrument has demonstrated high internal consistency in its subscales with Cronbach's alphas ranging from .87 to .94 for intrusion, .84 to .86 for avoidance, and .79 to .90 for hyperarousal (Briere, 1997). Test-retest reliability coefficients of .94 (intrusion), .89 (avoidance), and .92 (hyperarousal) were found (Weiss & Marmar, 1997). Criterion validity was demonstrated by Briere (1997) who found the hyperarousal subscale predictive of trauma response and the intrusion and avoidance subscales were able to detect changes in respondent's clinical status over time.

Procedure

Four hundred survey packets were initially sent addressed to physicians, resident physicians, and medical students working in various medical settings in twenty randomly selected states of the United States. If a survey packet was returned undeliverable for any reason, a new recipient was selected from the same state and the packet was sent to the new addressee. Six weeks after the initial mailing a second packet, which included a follow up reminder letter (Appendix B), was sent to each of the utilized 400 addressees. This allowed for delivery of packets to a full four hundred potential participants.

The procedure used to randomly select the states for participation was to list the fifty states alphabetically then use a random number table to choose twenty. The twenty states included were Alabama, Arkansas, California, Colorado, Delaware, Hawaii, Idaho, Illinois, Indiana, Kansas, Louisiana, Maryland, Minnesota, Missouri, New Mexico, North Carolina, Pennsylvania, Rhode Island, Texas, and Vermont. The online yellow page directory was then used to select ten hospitals and ten physicians' offices from each state using the same alphabetical numbering and random number table process. Packets being sent to hospitals were addressed to the emergency services department.

Information inside the packet explained the purpose of the study and asked for participation from a physician, resident physician, or medical student. It also stated that if additional persons would like to participate they may photocopy the packet materials. The researcher's contact information and return postage was provided. The survey packet contained three pages and a postage paid return envelope. The first page, "Request for Participation," provided study information, researcher contact information, and the information necessary for the participant's informed consent. The second page was the

"Demographic Questionnaire." The final page was the "*Impact of Event Scale Revised" (IES-R)*. These items are reproduced as Appendices A – C. Participants were asked to fill out the survey data and return the last two pages in the provided envelope.

CHAPTER THREE

Results

Preliminary Analysis

Univariate descriptive statistics were used to screen the variables. Measures of central tendency, measures of variability, frequency distributions and the normal curve, and percentile statistics were conducted to determine univariate normalcy. Descriptive statistics are displayed in Table 1. The data were inspected for accuracy of input,

Table 1. Demographic Data: Numeric/Continuous

	Mean	Standard deviation	Range	Minimum	Maximum	Skewness	Kurtosis
Age	48 years	10 years	38 years	32 years	70 years	.552	-.614
Years experience	20 years	8 years	30 years	7 years	37 years	.363	-.966
Hospital work	20%	27.1	90%	0	90%	1.747	2.088
Clinic work	20%	35.8	100%	0	100%	1.498	.430
Private office	36%	44.6	100%	0	100%	.497	-1.745
Other setting	1%	3.2	12%	0	12%	2.279	4.003
Trauma caseload	6%	6.8	25%	0	25%	1.249	.763

out of range values, plausible means and standard deviations, coefficients of variation, and univariate outliers. There were no missing data. No univariate outliers were present. The variables approximated the normal distribution. Pairwise plots indicated that nonlinearity and heteroscedasticity were not a concern. Frequencies were run to determine demographic percentages and the data are depicted in Table 2.

Table 2. Demographic Data: Nominal/Dichotomous

Item/Response	Percent
Gender	
Male	59.5 (n = 22)
Female	40.5 (n = 15)
Ethnic Background	
Caucasian	73.0 (n = 27)
Asian	13.5 (n = 5)
Latino	5.4 (n = 2)
African American	5.4 (n = 2)
Declined to state	2.7 (n = 1)
I have personally experience a traumatic event.	
Yes	59.5 (n = 22)
No	40.5 (n = 15)
What is your medical specialty?	
Family practice	35.1 (n = 13)
Emergency medicine	13.5 (n = 5)
Internal medicine	13.5 (n = 5)
General practice	8.1 (n = 3)
Plastic surgery	5.4 (n = 2)
Orthopedics	5.4 (n = 2)
Pulmonary medicine	5.4 (n = 2)
Psychiatry	5.4 (n = 2)
Ophthalmology	2.7 (n = 1)
Pediatric orthopedics	2.7 (n = 1)
Pediatrics	2.7 (n = 1)
Do you treat trauma cases?	
Yes	78.4 (n = 29)
No	21.6 (n = 8)
Have you experienced psychological trauma indirectly through being exposed to the traumatic experience of one of your patients?	
Yes	40.5 (n = 15)
No	59.5 (n = 22)
Do you provide formal education/training to other physicians/medical students?	
Yes	40.5 (n = 15)
No	59.5 (n = 22)
Do you receive formal education/training from other physicians?	
Yes	51.4 (n = 19)
No	48.6 (n = 18)
How often do you engage in direct supervision?	
Never	24.3 (n = 9)
Seldom	43.2 (n = 16)
Often	10.8 (n = 4)
Very often	21.6 (n = 8)
How often do you have case debriefing opportunities?	
Never	37.8 (n = 14)
Seldom	32.4 (n = 12)
Often	18.9 (n = 7)
Very often	10.8 (n = 4)
How often do you have case presentation opportunities?	
Never	24.3 (n = 9)
Seldom	54.1 (n = 20)
Often	10.8 (n = 4)
Very often	10.8 (n = 4)

The multivariate data were screened to insure they met the assumptions for a multiple regression analysis. The residuals were plotted to determine if multivariate outliers were present. No outliers were identified as no scores fell outside of three standard deviations. All values were included in the analysis. Homoscedasticity was normal in that data points fell at approximately equal distances along the standardized residual line. The magnitude of the Pearson product-moment correlation coefficients among all of the predictor variables was sufficiently low indicating linearity. The correlation between the percent of trauma cases treated and vicarious exposure to patient trauma was -.530, indicating that multicollinearity and singularity were not factors.

Analyses of the Hypotheses

Hypothesis 1: PTSD Symptom Presence

This hypothesis predicted that Posttraumatic Stress Disorder symptoms would be present in the study participants. Frequency tests were conducted to determine the number and percent of participants who demonstrated PTSD symptoms on the IES-R (Table 3). Five participants (13.5%) scored above the cutoff point of 33, which is used for a probable diagnosis of PTSD. An additional two participants (5.4%) had scores that are considered to be of clinical concern (24 to 32 range). A full 29.7 percent of participants (n = 11) responded "not at all" (0) to all IES-R items.

Hypothesis 2: Vicarious Traumatization/PTSD Symptom Relationship

This hypothesis predicted that participants who reported having been exposed to trauma vicariously through the experiences of their patients would display a higher incidence of PTSD symptoms. A Pearson product moment-correlation coefficient (r) was calculated using the yes/no response to the demographic questionnaire item, "Have you

Table 3. Impact of Events Scale Revised (IES-R) Scores

Score	Frequency	Percent	Cumulative Percent
0	11	29.7	29.7
1	1	2.7	32.4
2	3	8.1	40.5
3	1	2.7	43.2
4	1	2.7	45.9
5	1	2.7	48.6
6	2	5.4	54.1
7	3	8.1	62.2
8	2	5.4	67.6
10	2	5.4	73.0
12	1	2.7	75.7
13	1	2.7	78.4
15	1	2,7	81.1
24	1	2.7	83.8
29	1	2.7	86.5
38	1	2.7	89.2
39	1	2.7	91.9
41	1	2.7	94.6
46	1	2.7	97.3
49	1	2.7	100.0
Total	37	100.0	

experienced trauma indirectly through the traumatic experience of one of your patients?" and the participant's score on the IES-R. To preserve the continuity of the demographic questionnaire items the "yes" response was listed first, thus leading to its value being coded as the lesser value than the "no" response in the statistical analysis. Therefore, the hypothesis would predict a negative correlation between reports of vicarious

traumatization and PTSD symptoms. The result was a statistically significantly negative correlation ($r = -.595$, $p < .001$), confirming the hypothesis that physicians who have been exposed to trauma through the traumatic experiences of their patients show a higher incidence of posttraumatic stress disorder symptoms.

Hypothesis 3: Trauma Caseload/PTSD Symptom Correlation

This hypothesis predicted that participants who reported a higher percentage of trauma cases would display a higher incidence of PTSD. A Pearson product-moment correlation coefficient (r) was conducted with the reported ratio of trauma to non-trauma patients and the IES-R. The analysis indicated a statistically significant positive correlation ($r = .645$, $p < .001$), confirming the hypothesis that physicians with a larger ratio of trauma patients to non-trauma patients showed more frequent or more intense posttraumatic stress disorder symptoms.

Hypothesis 4: Mediating Factors

This hypothesis predicted that participants who have the opportunity to debrief with colleagues, discuss cases inside or outside of supervision, or perform case presentations would have fewer incidents or intensity of PTSD symptoms, since these opportunities would mediate the effects of vicarious traumatization. A multiple regression analysis was conducted to determine if PTSD symptoms could be predicted and the analysis was inspected to see if any interactions indicating mediation were present. The data used in this analysis included the participant's trauma caseload ratio, vicarious exposure to patient trauma, and debriefing, supervision, and case presentation opportunities. Debriefing, supervision, and case presentation opportunity data were the

participants' demographic questionnaire responses to whether these opportunities are available never (0), seldom (1), often (2), or very often (3).

Although power analyses indicated that 91 participants would be needed to detect a medium effect size with an alpha level of .05, a standard entry multiple regression equation was run with the 37 participants' data. As such, caution is required in interpreting this statistic. The model was able to account for the contribution of 55% of the variance in PTSD symptoms scores on the IES-R ($R = .743$, $R^2 = .553$, *adjusted* $R^2 = .480$, $F(5,31) = 7.658$, $p < .001$). The standardized beta values are listed in Table 4. The relationship of the predictor to PTSD symptoms are in the direction expected, with PTSD symptoms increasing as the ratio of trauma cases and vicarious exposure increased, and decreasing when debriefing and case presentations increased. However, the supervision predictor was not in the direction expected. When supervision opportunities increased, so did PTSD symptoms. This apparent contradiction could be the result of the setting in which the services were provided, whereby larger organizations may have more supervision opportunities but higher trauma caseloads or those responding may have additional managerial obligations. The analysis did not support this hypothesis, although as stated above the associations of most variables were in the direction predicted, because no interaction indicating the

Table 4. Directional Relationship of Predictor Variables

	Standardized Beta	T	Significance
Ratio of trauma cases	.319	1.683	.102
Vicarious exposure	-.342	-2.318	.027
Supervision	.388	1.535	.135
Debriefing	-.258	-1.564	.128
Case presentations	-.047	-.270	.789

mediating effects of debriefing, discussion, supervision, or case presentation was present. This finding may also be a casualty of the deficiency statistical power due to the limited response rate.

Finally, because this population is relatively unstudied some additional exploratory data were examined without hypotheses being made. The data of the seven study participants whose scores on the IES-R indicated a "clinical concern" or "probable PTSD" was investigated. The following demographic information was noted: 71% were female; 86% were Caucasian; 100% reported having personally experienced a traumatic event; and 86% did not choose to endorse either an internal or external locus of control. Speculation based upon only seven participants' data will not be made; however it is noteworthy that all seven reported a personal trauma history.

CHAPTER FOUR

Discussion

It is well documented that people, particularly those whose professions put them in the position of having an empathetic relationship with traumatized individuals, often suffer Posttraumatic Stress Disorder symptoms from traumatic events they did not personally experience. It was the goal of this study to explore this phenomenon with physicians, resident physicians, and medical students as participants. The study succeeded in filling in some of the gap in the literature base, as it is the first reported study with physicians as participants.

Prior to discussing the findings of this project, three limitations must be noted. First, although a low response rate was expected, the actual response rate was much lower than anticipated and was significantly lower than that which is generally received. The 9.25% rate stated in the result section was based upon the 400 potential subjects, not the 800 actual packets mailed. The follow-up mailing yielded a return of four additional packets (approximately 9% of the response total), making the initial response rate 8.25%. Second, the sample size was much smaller than what was necessary for the proposed statistical tests. A power analysis determined that 91 participants were needed. At the 8.25% rate of response, survey packets would have needed to be sent to 1103 potential study participants, rather than the 400 sent. Third, all participants identified themselves as physicians, so no data was collected from resident physicians or medical students. Considering these limitations, caution should be exercised in generalizing the study results.

Presence of PTSD Symptoms

The results of this study provide support for the presence of PTSD symptoms in physicians. Scores on the IES-R ranged from 0 to 49. A full 29.7% rated all items "not at all" and 73% of the total participants had "not at all" responses to more than half of the items. A score of zero is substantially lower than what would be expected in any population of persons vicariously exposed to trauma, including those who do not treat trauma victims.

This trend may be the result of an unwillingness to admit to symptom presence or an inability to identify feelings as being related to patient trauma experiences. It may also stem from personality traits that attract physicians to their profession or part of the frame of reference they adopt through the process of medical training. As stated earlier, frame of reference as delineated by McCann and Pearlman (1990a) relates to predictability and control. The "hard science" teachings of medicine may lead physicians to believe that acknowledging the transmission of trauma symptoms violates the predictability of symptom origin and equates to physician loss of personal control. It can not be determined if this occurred, since salient need assessment data was not collected. If this were the case, the IES-R results would illustrate the CSDT contention that need salience directly correlates with trauma response.

Further examination of participant IES-R scores on the three subscales revealed a trend that may indicate physicians' frequent attempts to battle associating their feelings with their thoughts about patient trauma. Scores on the intrusion and avoidance subscales were similar, but hyperarousal scores were much lower. This pattern remained constant among those whose scores were of "clinical concern" or higher.

Vicarious Exposure

This project supported the research literature that contends those who have been vicariously exposed to traumatic events through contact with their patients displayed more frequent and intense PTSD symptoms. This factor was common to all of the IES-R scores in the "clinical concern" or above range. It reinforces the assertion that trauma symptoms are transmitted vicariously from victim to helping professional through learning of the patients' traumatic experience. Another factor starkly significant and consistent with the literature was indication of a history that included personally experiencing a traumatic event. Acknowledgment of these items may be due to a better understanding of one's feelings related to traumatic events, a willingness to admit the presence of such feelings, or an ability to identify the feelings as distressing.

There was no detected correlation between vicarious exposure and medical setting, physician specialty, or years of experience. It is unknown if geographic location was an issue, since the promise of anonymity precluded the researcher from tracking where packets were postmarked. However, one participant explained that she had never experienced a traumatic event, did not experience trauma indirectly through her patients, and stated that "Trauma is not a problem in my practice, I live in a very peaceful protected area – the biggest trauma is a motor vehicle accident."

Ratio of Trauma to Non-trauma Cases

Participants who had a higher ratio of trauma cases relative to non-trauma cases had a higher incidence of PTSD symptoms. In its design, this study attempted to approximate two groups by sending 200 survey packets to hospital emergency services departments and 200 survey packets to physician offices. It was believed that this

sampling would provide distinct differences in trauma to non-trauma caseload ratios. This did not occur. Although the differentiation among groups did not occur as designed, the presence of trauma symptomology related to trauma caseload ratio was maintained as expected. Forty percent of those in the "probable PTSD diagnosis" classification reported their specialty as emergency medicine, lending additional support, despite the low total number of emergency medicine physicians in this study.

Mediating the Effects of Vicarious Traumatization

Debriefing, discussion, supervision, and case presentation opportunities have been shown to mediate the effects of vicarious traumatization and protect participants from Posttraumatic Stress Disorder symptoms. The data in this project showed a predicted change in symptoms based upon exposure to three of the four of these criteria, but failed to demonstrate a mediating effect within the entire model. The model used was analyzed with vicarious exposure and trauma caseload ratio as predictors, both which have been shown to be positively correlated with IES-R scores. Debriefing, case discussion, supervision, and case presentation data were simultaneously entered into the multiple regression equation with vicarious exposure and trauma caseload ratio. The impact of these opportunities as mediation was not readily demonstrated.

There are two plausible explanations for this, each which could have operated independently or jointly. The obvious justification is the insufficient statistical power. The other possibility pertains to the unexpected finding concerning supervision, which may have occurred due to the method of inquiring about supervision opportunities. Perhaps supervision's paradoxical result corrupted the model's finding, as the directional relationship of the other predictors were as expected. Case presentation had the smallest

association, but showed that increased opportunities were linked to decreased PTSD symptoms. The same was true for debriefing opportunities. The surprise came in the direction of the relationship between supervision and IES-R scores. When participants reported more supervision opportunities, they also displayed more Posttraumatic Stress Disorder symptoms. The demographic questionnaire did not ascertain if the participant was in a rank or management position that has both the responsibility to act directly with the trauma victim and supervise others, a variable known to increase vicarious traumatization risk.

Trauma Research Literature

The trauma research literature is replete with studies of variables that contribute to vicarious traumatization symptoms. The data from this project nearly parallel the previous findings, although they were collected from physicians who were a previously unstudied population. Some similarities are the increased traumatic stress symptoms where a history of a direct experience of a traumatic event, a high trauma to non-trauma caseload, or a large number of trauma patients exists. Also similar is the relationship between engaging in debriefing, case presentation, and consultation with decreased symptomology. What differed between this study's findings and the body of literature was the lack of buffering from supervision activities and an association between trauma symptoms and an external locus of control. The two inconsistent findings may have occurred as a result of the method of inquiry. Supervision was somewhat exclusive as it only asked how often supervision occurred and it referred only to direct supervision. Locus of control may have been too inclusive, since it was not dichotomized into internal or external, so respondents could select both or neither. Physician supervision may also

differ qualitatively from supervision opportunities in other professions in ways that were not addressed in this study.

Constructivist Self-development Theory

Constructivist self-development theory offers a framework for predicting, identifying, and interpreting trauma response, which can help to prevent, assess, and treat vicarious traumatization. It was the guiding principle in this research. Other vicarious traumatization models have attempted to explain the transmission of symptoms from trauma victim to helping professional, but they fall short in circumstances in which the relationship is not one where psychotherapy occurs. Role replacement or reenactment on the part of the professional is a requirement for vicarious traumatization in these models. This does not sufficiently account for vicarious traumatization symptoms in physicians. Often the patient's traumatic event is not detailed to the physician except in the context of how the injury occurred. Therefore, the physician's focus is on healing the injury and not the patient's experience of the trauma. This does not allow for any opportunity for the physician to fill a perceived role related to the original traumatic event.

Instead traumatic response symptoms result as detailed in constructivist self-development theory. The symptoms in the physician happen due to the interaction between the physician's salient psychological needs and the meaning he/she ascribes to the patient's traumatic event. The model illustrated how the response to the event was dictated by the salience of the psychological need involved. Two specific examples of this are from the study data. First was the physician who showed little symptomology because her existing schema was such that she believed trauma was not a problem, since she lived in a very peaceful protected area. Her psychological need for safety was not a

salient one. In direct opposition to this was the second physician who gave up her life long passion and sold her horses, because she was sure she would suffer a spinal cord injury as a consequence of riding as her patient did.

Additional Exploration

The survey instruments used in this research provided the following additional information. Age appears to have had a somewhat restricted range, as no participant was younger than 47 years. It is not known if this was a function of who opens or distributes the mail or if it represents a response bias. Ethnicity consisted of an overwhelming majority of Caucasians (n = 27, 73%). Participants who reported having personally experienced a traumatic event equaled 59%, as the trauma research literature estimates that approximately 50% have. (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). More detailed scrutiny of the work environment variables shows the following. There was a 40/60 (yes/no) split of those who provide training to others. An equal number of participants did and did not receive supervision from others. Approximately sixty-nine percent of responses indicated that supervision and debriefing opportunities were available seldom or never. Case presentation opportunities were even less frequent. However, chances to discuss cases with colleagues were accessible to 90% of participants.

Space was provided where participants could write in "any additional information" they wanted to provide to the researcher. Within the group whose IES-R scores did not reach the "clinical concern" cutoff, only two provided narrative information. One stated that he had lost his wife to cancer a few years earlier and the other stated her practice was in a "protected and peaceful area." Among those whose IES-

R scores were above the cutoff, 6 of the 7 filled in a narrative. These are listed with the total IES-R score on Table 5.

Table 5. Narrative Responses by IES-R Score

IES-R Score	Narrative Response to "Please list any additional information you wish to provide to the researcher
49	I was a nurse.
46	
41	Patient had a spinal cord injury after horse riding accident. I sold my horses and stopped riding, even though it was a lifelong passion. I have become convinced that if I keep riding it will happen to me.
39	More formal [case discussion] sessions are needed for the [emergency department] cases – not just as they happen.
38	My 0-4 responses on page 2 are lower than they would have been 25 years ago [when an older trauma occurred.]
29	[I] discuss [cases] with a mental health counselor.
24	In a two physician practice so always bouncing cases back and forth with each other.

Conclusion

Perhaps a better way to conduct this type of research would be to get permission from the American Medical Association to access their physician and hospital directories and potentially provide the survey instruments electronically. This would allow for an increased pool of potential participants, but does not necessarily guarantee a larger response rate. The lack of physician data in the literature led to the assumption that response rate would be low. However, it was not certain if the lack of physician information was the result of few studies requesting physician data or a reluctance of physicians to participate.

Data gleaned from the frequency percentages in this study can be used to speculate trends in physician response. It appears that physicians may be more closed to disclosure in terms of the impact that exposure to patient trauma has on them. However, there was evidence that physicians experience vicarious traumatization in a similar manner to the other professions studied by trauma researchers. The information obtained

from this project illustrates the need for physicians to be aware of the concept of vicarious traumatization, its transmission, and correlates that serve to increase or decrease risk. This knowledge could be incorporated into physician training and education.

All helping professions would benefit from the knowledge trauma research has gathered on vicarious transmission. A salient needs and schema belief assessment conducted before seeing patients would help practitioners be aware of what potential client material may increase their risk of traumatization. Supervisors could ask informed questions, which may help to circumvent potential problems. If treatment were necessary for the practitioner, the assessment would help to guide focus areas.

Implications for Future Study

Because little information has been gathered from physicians in the context of trauma research, this study collected demographic data not included in the stated hypotheses. The exploratory design was intended to collect information that would generate questions for future research. Some future studies may consider: assessing personality characteristics such as emotion regulation and psychopathy among physicians; investigating salient needs related to trauma exposure; exploring training programs to determine if teaching methods cause an unwillingness to admit to or identify PTSD symptoms, or if such training protects physicians from trauma exposure impact; and calculating statistics on the demographic data sought in this sample.

References

Adler, H. M. (1997). Toward a multimodal communication theory of psychotherapy: The vicarious coprocessing of experience. *American Journal of Psychotherapy, 51*(1), 54-66.

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders (3rd ed.)*. Washington, D. C.: Author.

American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders (3rd ed., revised)*. Washington, D. C.: Author.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders (4th ed.)*. Washington, D. C.: Author.

Astin, M. C. (1997). Traumatic therapy: How helping rape victims affects me as a therapist. *Women and Therapy, 20*(1), 101-109.

Berger, H. (2001). Trauma and the therapist. In T. Spiers (Ed.) *Trauma: A practitioner's guide to counseling* pp. (189-212). New York: Brunner-Routledge.

Blair, D. T. & Ramones, V. A. (1996). Understanding vicarious traumatization. *Journal of Psychosocial Nursing, 34*(11), 24-30.

Briere, J. (1995). *Trauma Symptom Inventory Professional Manual*. Odessa, FL: Psychological Assessment Resources.

Briere, J. (1997). Psychological assessment of adult posttraumatic states. Washington D.C.: American Psychological Association.

Brown, J. M. & Campbell, E. A. (1990). Sources of occupation stress in the police. *Work & Stress, 4,* 305-318.

Bryant, R. A. & Harvey, A. G. (1996). Posttraumatic stress reactions in volunteer firefighters. *Journal of Traumatic Stress, 9*(1), 51-62.

Charney, A. E. & Pearlman, L. A. (1998). The ecstasy and the agony: The impact of disaster and trauma work on the self of the clinician. In P. Kleespies (Ed.) *Emergencies in mental health practice: Evaluation and management* (pp. 418-435). New York: Guilford Press.

Chestman, K. R. (1999). Secondary exposure to trauma and self-reported distress among therapists. In B. Hudnall Stamm (Ed.) *Secondary Traumatic Stress* (pp. 29-36). Baltimore: Sidran Press.

Clark, M. L. & Gioro, S. (1998). Nurses, indirect trauma, and prevention. *Image:*

Journal of Nursing Scholarship, 30, 85-87.

Cramer, M. A. (2002). Under the influence of unconscious process: Countertransference in the treatment of PTSD and substance abuse in women. *American Journal of Psychotherapy, 56,* 194-210.

Crothers, D. (1995). Vicarious traumatization in the work with survivors of childhood trauma. *Journal of Psychosocial Nursing, 33*(4), 9-13.

Dunning, C. (1994). Trauma and countertransference in the workplace. In J. P. Wilson & J. D. Lindy (Eds.) *Countertransference in the treatment of PTSD* (pp. 351-367). New York: Guilford Press.

Eisenberg, N. (1989). Empathy and related vicarious emotional responses. *New Directions for Child Development, 44,* 1-7.

Everly, G. S., Boyle, S. H., & Lating, J. M. (1999). The effectiveness of psychological debriefing with vicarious trauma: A meta-analysis. *Stress Medicine, 15,* 229-233.

Figley, C. R. (1988). Toward a field of traumatic stress. *Journal of Traumatic Stress, 1,* 3-16.

Figley, C. R. (1993). Coping with stressors on the home front. *Journal of Social Issues, 49*(4), 51-71.

Figley, C. R. (1995). Compassion fatigue as secondary traumatic stress disorder: An overview. In C. R. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp. 1-20). New York: Brunner/Mazel.

Figley, C. R. (1999). Compassion fatigue: Toward a new understanding of the costs of caring. In B. Hudnall Stamm (Ed.) *Secondary Traumatic Stress* (pp. 3-28). Baltimore: Sidran Press.

Foa, E. B. & Rothbaum, B. O. (1989). Behavioral-cognitive conceptualizations of posttraumatic stress disorder. *Behavior Therapy, 20,* 155-176.

Follette, V. M., Polusny, M. M., & Milbeck, K. (1994). Mental health and law enforcement professionals: Trauma history, psychological symptoms, and impact of providing services to child sexual abuse survivors. *Professional Psychology: Research and Practice, 25,* 275-282.

Foy, D. W., Osato, S. S., Houskamp, B. M., & Neumann, D. A. (1992). Etiology of posttraumatic stress disorder. In P. A. Saigh (Ed.) *Posttraumatic stress disorder: A behavioral approach to assessment and treatment.* Needham Heights, MA: Allyn and Bacon.

Hartsough, D. & Myers, D. (1985). *Disaster work and mental health: Prevention and control of stress among workers.* Washington, D.C.: National Institute of Mental Health, Center for Mental Health Studies of Emergencies.

Herman, J. L. (1992). *Trauma and recovery.* New York: Basic Books.

Johnson, C. N. & Hunter, M. (1997). Vicarious traumatization in counsellors working in the New South Wales sexual assault service: An exploratory study. *Work & Stress, 11,* 319-328.

Jones, D. R. (1985). Secondary disaster victims: The emotional effects of recovering and identifying human remains. *American Journal of Psychiatry, 142,* 303-307.

Jones, K. D. (2001). Counselor reactions to clients traumatized by violence. In D. S. Sandu (Ed.) *Faces of violence: Psychological correlates, concepts, and intervention strategies* (pp. 379-388). Huntington, NY: Nova Science Publishers.

Kassam-Adams, N. (1999). The risks of treating sexual trauma: Stress and secondary trauma in psychotherapists. In B. Hudnall Stamm (Ed.) *Secondary Traumatic Stress* (pp. 37-50). Baltimore: Sidran Press.

Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic stress disorder in the national comorbidity survey. *Archives of General Psychiatry, 52,* 1048-1060.

Krystal, H. (1978). Trauma and affects. *Psychoanalytic Study of the Child, 33,* 81-117.

Lansen, J. (2001). What does this work do to us? In S. Graessner & N. Gurris (Eds.) *At the side of torture survivors: Treating a terrible assault on human dignity* (pp. 198-211). Baltimore: Johns Hopkins University Press.

Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal and coping.* New York: Springer.

Lindy, J. D. & Wilson, J. P. (1994). Empathic strain and countertransference roles: Case illustrations. In J. P. Wilson & J. D. Lindy (Eds.), *Countertransference in the treatment of PTSD* (62-85). New York: Guilford Press.

Marmar, C. R., Weiss, D. S., Metzler, T. J., Deucchi, K. L., Best, S. R., & Wentworth, K. A. (1999). Longitudinal course and predictors of continuing distress following critical incident exposure in emergency services personnel. *The Journal of Nervous and Mental Disease, 187,* 15-22.

Maslach, C, & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Occupational Behavior, 2,* 99-113.

McCann, I. L. & Pearlman, L. A. (1990a). *Psychological trauma and the adult survivor: Theory, therapy, and transformation.* Philadelphia: Brunner/Mazel.

McCann, I. L. & Pearlman, L. A. (1990b). Vicarious traumatization: A framework for understanding the psychological effects of working with victims. *Journal of Traumatic Stress, 3,* 131-148.

McCann, L. & Pearlman, L. A. (1991). Vicarious traumatization: The emotional costs of working with survivors. *Treating abuse today, 3*(5), 28-31.

McFarlane, A. C. (1988). The longitudinal course of posttraumatic morbidity: The range of outcomes and their predictors. *The Journal of Nervous and Mental Disease, 176,* 30-40.0

Miller, K. I., Stiff, J. B., & Ellis, B. H. (1988). Communication and empathy as precursors to burnout among human service workers. *Communication Monographs, 55*(9), 11-13.

Motta, R. W., Suozzi, J. M., & Joseph, J. M. (1994). Assessment of secondary traumatization with an emotional Stroop task. *Perceptual and Motor Skills, 78, 1274.*

Munroe, J. F., Shay, J., Fisher, L., Makary, C., Rapperport, K., & Zimering, R. (1995). Preventing compassion fatigue: A team treatment model. In C. R. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp. 209-231). New York: Brunner/Mazel.

Neuman, D. A. & Gamble, S. J. (1995). Issues in the professional development of psychotherapists: Countertransference and vicarious traumatization in the new trauma therapist. *Psychotherapy, 32,* 341-347.

Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin, 129,* 52-73.

Ozer, E. J. & Weiss, D. S. (2004). Who develops posttraumatic stress disorder? *Current Directions in Psychological Science, 13,* 169-172.

Pearlman, L. A. (1998). Trauma and the self: A theoretical and clinical perspective. *Journal of Emotional Abuse, 1*(1), 7-25.

Pearlman, L. A. (1999). Self-care for trauma therapists: Ameliorating vicarious traumatization. In B. Hudnall Stamm (Ed.) *Secondary Traumatic Stress* (pp. 51-64). Baltimore: Sidran Press.

Pearlman, L. A. & Mac Ian, P. S. (1995). Vicarious traumatization: An empirical study of the effects of trauma work on trauma therapists. *Professional Psychology:*

Research and Practice, 26, 558-565.

Pearlman, L. A. & Saakvitne, K. W. (1995). *Trauma and the therapist: Countertransference and vicarious traumatization in psychotherapy with incest survivors.* New York: W. W. Norton.

Pines, A. M. & Arnson, E. (1988). *Career burnout: Causes and cures.* New York: Free Press.

Regehr, C., Hill, J., & Glancy, G. D. (2000). Individual predictors of traumatic reactions in firefighters. *The Journal of Nervous and Mental Disease, 188,* 333-339.

Remer, R. & Elliot, J. (1988). Characteristics of secondary victims of sexual assault. *International Journal of Family Psychiatry, 9,* 389-401.

Saakvitne, K. W. (2002). Shared trauma: The therapist's increased vulnerability. *Psychoanalytic Dialogues, 12,* 443-449.

Salston, M. D. & Figley, C. R. (2003). Secondary traumatic stress effects of working with survivors of criminal victimization. *Journal of Traumatic Stress, 16,* 167-174.

Sexton, L. (1999). Vicarious traumatisation of counsellors and effects on their workplaces. *British Journal of Guidance & Counselling, 27,* 393-404.

Sprang, G. (2001). Vicarious stress: Patterns of disturbance and use of mental health services by those indirectly affected by the Oklahoma City bombing. *Psychological Reports, 89,* 331-338.

Wastell, C. A. (2002). Exposure to trauma: The long-term effects of suppressing emotional reactions. *The Journal of Nervous and Mental Disease, 190,* 839-845.

Weiss, D. & Marmar, C. (1997). The Impact of Event Scale -Revised. In J. Wilson & T. Keane (Eds), Assessing psychological trauma and PTSD. New York: Guildford.

Weiss, D. S., Marmar, C. R., Metzler, T. J., & Ronfeldt, H. M. (1995). Predicting symptomatic distress in emergency services personnel. *Journal of Consulting and Clinical Psychology, 63,* 361-368.

Wilson, J. P. & Lindy, J. D. (1994). *Countertransference in the treatment of PTSD.* New York: Guilford Press.

Yehuda, R. (2000). Biology of posttraumatic stress disorder. *Journal of Clinical Psychiatry, 61(7),* 15-21.

APPENDIX A

Recruitment Letter

Dear Physician, Resident, or Medical Student:

My name is Jan McNamara and I am a doctoral candidate in the department of psychology at Loma Linda University. I am conducting a study to investigate physicians' responses to treating patients who have experienced psychologically traumatic events. The physician is an integral part of a patient's experience when the patient has been exposed to a traumatic event. It is my goal to further understand the relationship between the physician and the patient experiencing trauma. The questions on the enclosed survey will cover topics of physician exposure to patients who have experienced a traumatic event, physicians' feelings about those events, the environment in which the physician works, and some demographic data about the physician.

Little data exists on physicians as a population regarding reactions to traumatic exposure. Some of the questions will ask for personal reactions, but I can assure you that all information will be anonymous. At no time will your name be linked with your responses. If you decide to participate, complete the survey and return it to me in the enclosed self-addressed stamped envelope. You should not include your name anywhere. If you do not wish to participate, but another physician, resident physician, or medical student is willing to participate, I would appreciate it if you would forward this packet to the interested party. If additional persons would like to participate, please feel free to make additional copies and enclose them in the return envelope. Participation in this study will involve the completion of a survey that takes approximately seven to ten minutes of your time.

Please understand that your participation in this study is completely voluntary. You do not have to participate if you do not want to. There are no risks associated with participation beyond those you already face in daily life.

All information you provide will be held in strict confidence by my supervisor Paul Haerich, Ph.D. and me. No identifying information will be placed on your responses. All presentations or publications will report only in aggregate data.

If you have any questions, please feel free to contact me at jmcnamara05g@llu.edu or 626-967-3069. You may also contact my research supervisor, Dr. Paul Haerich, Department of Psychology, School of Science & Technology, Loma Linda University, at phaerich@llu.edu or 909-558-8707. If you wish to contact a third party not connected to this study regarding complaints you may contact the Office of Patient Relations at Loma Linda University Medical Center at 909-558-4647.

Thank you in advance for your time and assistance.

Sincerely,

Jan McNamara, Doctoral Candidate

Paul Haerich, Ph.D., Research Supervisor
Loma Linda University
11130 Anderson St
Loma Linda, CA 92350

APPENDIX B

Follow-up Letter

Follow-up / Reminder

Dear Physician, Resident, or Medical Student:

My name is Jan McNamara and I am a doctoral candidate in the department of psychology at Loma Linda University. I recently sent you a request for participation in the study I am conducting to investigate physicians' responses to treating patients who have experienced psychologically traumatic events. As I indicated previously, the physician is an integral part of a patient's experience when the patient has been exposed to a traumatic event and little data exists on physicians as a population. It is for these reasons that I am sending you this letter as a follow up request to participate in this study. I am again enclosing the survey information in case you have misplaced it. If you have already returned the survey, thank you, and it is not necessary that you return it again. However, if you have not done so, please take this time to fill out the materials and return them in the postage paid envelope provided.

If you have any questions, please feel free to contact me at 626-967-3069 or jmcnamara05g@llu.edu. You may also contact the research supervisor, Dr. Paul Haerich, Department of Science & Technology, Loma Linda University Graduate School, at phaerich@llu.edu or 909-558-8707. If you wish to contact a third party not connected to this study regarding complaints you may contact the Office of Patient Relations at Loma Linda University Medical Center at 909-558-4647.

Thank you in advance for your time and cooperation.

Jan McNamara, Doctoral Candidate

Paul Haerich, Ph.D., Research Supervisor

Loma Linda University
11130 Anderson St
Loma Linda, CA 92350

APPENDIX C

Demographic Questionnaire

For purposes of this survey, a traumatic event includes an event that involved actual or threatened death or serious injury and the person's response to the event involved intense fear, helplessness, or horror.

Please provide the following information:

About you:

Age _____ Gender _____ Ethic Background _____

I have personally experienced a psychologically traumatic event. yes no

I believe I have total control over what happens to me. yes no

I believe external factors control what happens to me. yes no

About your work:

I am a: physician resident physician medical student

Years of experience providing medical care _____

In what type of medical setting do you work? hospital ___% clinic ___% private office ___% other _____ ___%

What is your medical specialty? _____

Do you treat trauma cases? yes no

What percent of your total caseload are trauma cases? _____

Have you experienced psychological trauma indirectly through being exposed to the traumatic experience of one of your patients? yes no

Do you provide formal education/training to other physicians/medical students? yes no

Do you receive formal education/training from other physicians? yes no

How often do you engage in direct supervision? never seldom often very often

How often do you have case debriefing opportunities? never seldom often very often

How often do you have case presentation opportunities? never seldom often very often

Do you have other opportunities to discuss cases? yes no

With whom? _____ How often? seldom often very often

Please list any additional information you wish to provide to the researcher. _____

_____

_____

_____

APPENDIX D

Impact of Events Scale – Revised

Below is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty has been for you during the past seven days with respect to a traumatic event you learned about from the experience of one of your patients in the last 6 months, how much were you distressed or bothered by these difficulties?
Not at all = 0 A little bit = 1 Moderately = 2 Quite a bit = 3 Extremely = 4

1. Any reminder brought back feelings about it.
   0 1 2 3 4
2. I had trouble staying asleep.
   0 1 2 3 4
3. Other things kept making me think about it.
   0 1 2 3 4
4. I felt irritable and angry.
   0 1 2 3 4
5. I avoided letting myself get upset when I thought about it or was reminded of it.
   0 1 2 3 4
6. I thought about it when I didn't mean to.
   0 1 2 3 4
7. I felt as if it hadn't happened or wasn't real.
   0 1 2 3 4
8. I stayed away from reminders about it.
   0 1 2 3 4
9. Pictures about it popped into my mind.
   0 1 2 3 4
10. I was jumpy and easily startled.
    0 1 2 3 4
11. I tried not to think about it.
    0 1 2 3 4
12. I was aware that I still had a lot of feelings about it, but I didn't deal with them.
    0 1 2 3 4
13. My feelings were kind of numb.
    0 1 2 3 4
14. I found myself acting or feeling as though I was back at that time.
    0 1 2 3 4
15. I had trouble falling asleep.
    0 1 2 3 4
16. I had waves of strong feelings about it.
    0 1 2 3 4
17. I tried to remove it from my memory.
    0 1 2 3 4
18. I had trouble concentrating.
    0 1 2 3 4
19. Reminders of it caused me to have physical reactions,
    such as sweating, trouble breathing, nausea, or a pounding heart.
    0 1 2 3 4
20. I had dreams about it.
    0 1 2 3 4
21. I felt watchful or on guard.
    0 1 2 3 4
22. I tried not to talk about it.
    0 1 2 3 4