Stable Internal Resources, Workplace Violence, and PTSD among Nurses who work in Clients' Homes: Beyond DSM-IV-TR

Dissertation submitted in partial fulfillment of the
Doctor of Philosophy degree

Department of Psychology

University of Manitoba

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Stable Internal Resources, Work Place Violence, and PTSD among Nurses who work in Clients' Homes: Beyond DSM-IV-TR

BY

Solange T. Lavack

A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University of

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DOCTOR OF PHILOSOPHY

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Abstract

Mainstream research on Posttraumatic Stress Disorder (PTSD) has focused on the characteristics of the event and symptom formation, despite the consistent finding that when exposed to the same event only a subset of individuals go on to develop PTSD. While empirical evidence in adjacent areas of study have started to shift from a pathology focus to one that considers the influence of stable internal resources (SIRs) on mental health outcomes, very little is known about how SIRs might influence the development of PTSD. This study extended trauma research by investigating the influence of workplace violence and SIRs on PTSD among 638 nurses who work in clients' homes. A self-report methodology assessed workplace violence, SIRs, and a measure of PTSD. Other variables unique to nurses' practice environment (workplace support, safety concerns) were also examined. The incidence of workplace violence with this sample was high (mean: 27.07; SD: 12.26). The PTSD prevalence rate was 12%. Results show that, similar to previous nursing studies, nurses who work in clients' homes are at risk of being frequently exposed to workplace violence and developing PTSD symptoms. SIRs had a significant and negative relationship with PTSD, workplace support had a significant and negative association with PTSD, and threat had a significant and positive relationship with PTSD. SIR was the strongest predictor of PTSD. Implications of these findings are discussed.

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Chapter I

Stable Internal Resources, Workplace Violence, and PTSD among Nurses who Work in Clients' Homes: Beyond DSM-IV-TR

Mainstream empirical research on Posttraumatic Stress Disorder (PTSD) has traditionally focused on the psychological consequences of trauma, despite the consistent finding that only a subset of individuals exposed to the same trauma actually develop this disorder. Only recently, the field of trauma psychology has started to shift from a pathology focus to one that considers the stable internal resources (SIRs) seen in individuals who thrive in the aftermath of trauma (Ai & Park, 2005; Bonanno, 2004; Tedeschi & Calhoun, 1996). This is surprising since there is a growing body of research in other theoretical domains that links SIR variables with stress symptomatology and psychological dysfunction (Albertsen, Nielsen, & Borg, 2001; Feldt, Kinnunen, & Mauno, 2000; Levert, Lucas, & Ortlepp, 2000b; Sommer & Ehlert, 2004; Tedeschi & Calhoun, 1996). Moreover, equivocal findings suggest that traditional methods of investigating trauma responses may not reflect the experiences of emergency personnel, such as nurses where providing assistance to trauma victims and being subjected to workplace violence is expected (Duncan et al., 2001; Hesketh et al., 2002).

The purpose of this study was to investigate the associations between event and perception variables and SIRs on the development of PTSD symptoms among a sample of nurses who work in clients' homes. This explicit focus serves to

increase our understanding of trauma responses in two ways. First, recent studies among nurses who work in other practice environments have found high incidence and prevalence rates of exposure and PTSD symptoms (Anderson, 2002; Arnetz, Arnetz, & Petterson, 1996; Corneil & Kirwan, 1994; Elliott, 1997; Federation des Infirmieres du Quebec, 1995; Lavack-Pambrun, 2002; Powell, 1996; Simonowitz, Rigdon, & Mannings, 1997; Statistics Canada, Health Canada, & Canadian Institute for Health Information, 2006). Although studies indicate that nurses who work alone in clients' homes are at risk of being frequently exposed to workplace violence, no study to date has explored whether these nurses are at risk of developing PTSD symptoms (Barling, Rogers, & Kelloway, 2000; Carroll & Goldsmith, 1999; Hunter, 1997; Kelloway, Rogers, & Barling, 2000; Rodgers, 2000). Second, although research has linked the event, individual (e.g., stable internal resources, perception of competence) and practice environment factors (e.g., workplace support, perception of safety in the nursing work context) to PTSD symptoms, no studies to date have examined the simultaneous influence of these variables on PTSD symptoms (Fitzwater & Gates, 2000; Foa, 2000; Frommberger et al., 1999; Gilboa-Schectman & Foa, 2001; Hodgins, Creamer, & Bell, 2001; Lauterbach & Vrana, 2001).

After reviewing PTSD's diagnostic criteria according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000), contributions related to aspects of the qualifying trauma

(Criterion A1) and the subjective response to trauma (Criterion A2) are discussed. This is followed by a review of early and contemporary formulations relevant to the study of trauma. Then, contributions regarding the history of home healthcare, research on nursing practice environments, and studies on workplace violence in the nursing field are presented. Finally, results and implications of this study are proposed.

Diagnostic Criteria for PTSD

PTSD is defined as a debilitating, longstanding, and pervasive disorder following trauma exposure, with risks of morbidity and impairment in interpersonal and occupational functioning (Hembree & Foa, 2000). The occurrence of an external event, as stipulated in PTSD's Criterion A (DSM-IV-TR; American Psychiatric Association, 2000) involves the stimulus, as well as a subjective fear response. Criterion A1 refers to properties of the event: "The person experienced, witnessed, or has been confronted with an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity". Criterion A2 states that "the person's response to the event must involve intense fear, helplessness, or horror" (DSM-IV-TR; American Psychiatric Association, 2000, p. 467).

In addition to Criterion A, PTSD's categorization includes three symptom clusters. The first cluster (Criterion B) includes five symptoms associated with re-experiencing the event, including recurring intrusive recollections/images of the trauma, flashbacks or nightmares

associated with the trauma, or intense psychological distress following exposure to trauma-related events. It is stipulated that one (or more) of the Criterion B symptoms be met. The second cluster (Criterion C) comprises seven symptoms associated with avoidance of stimuli (e.g., places, individuals, activities, situations) reminiscent of the trauma, or numbing of general responsiveness, such as loss of interest in activities or people or psychogenic amnesia. It is required that three (or more) of the Criterion C symptoms be met. The third cluster (Criterion D) includes five hyperarousal symptoms which are difficulty sleeping, impaired concentration, irritability, exaggerated startle response, and hypervigilence. It is stipulated that two (or more) of the Criterion D symptoms be met. Notably, it is required that the symptoms in clusters B, C, and D persist for more than one month in order to meet the diagnostic criteria (Criterion E).

Criterion F, or the functional impairment criterion, not only requires that the individual experiences the traumatic event and that the symptoms stipulated in Criteria B, C, and D persist for over one month, but moreover, that the symptoms have significantly impaired the individual's capacity to work, love, and play. Lastly, the diagnostic criteria for PTSD distinguishes between acute (symptoms that persist for less than three months) and chronic (symptoms that persist for more than three months) PTSD (American Psychiatric Association, 2000).

PTSD is unique among the classification of disorders because all the criteria must be present before making a diagnosis, in contrast to most other diagnoses, whereby no symptom overlap may occur between two cases despite the fact that they both meet the requirement for diagnosis (Tucker & Trautman, 2000). In addition, PTSD is the only anxiety disorder in which an etiology (qualifying event) is specified in the nomenclature. Moreover, increasing international violence, such as war activity and terrorist attacks (e.g., World Trade Center) have led to a proliferation of empirical opportunities (Ai & Park, 2005; Miller, 2002; Schuster, Stein, & Jaycox, 2001). One of the areas that has attracted much empirical attention over the years is the quest to clarify the link between aspects of the objective qualifying event (nature of the event, event severity, number of exposures) and PTSD symptoms.

Aspects of the Qualifying Traumatic Event (Criterion A1)

There has been much debate in the empirical literature regarding the first of PTSD's DSM criteria (Criterion A1), which stipulates that the qualifying event is necessary for a diagnosis of PTSD. The consistent finding that not everyone exposed to the same trauma develops PTSD symptoms continues to bedevil researchers. As a result, there has been a dramatic surge of studies investigating links between aspects of the objective event (nature of the event, event severity, number of exposures) and PTSD symptoms.

Nature of the Event. The nature of the trauma (i.e., violent versus nonviolent; sexual versus nonsexual) has been

documented as one of the most salient predictors of chronic PTSD (Breslau, Chilcoat, Kessler, Peterson, & Lucia, 1999; Fontana, Spoonster-Schwartz, & Rosenheck, 1997; Gilboa-Schectman & Foa, 2001; Yehuda, McFarlane, & Shalev, 1998). Findings from the National Comorbidity Study (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), and from other studies (e.g., Breslau, 2001; Breslau, Kessler, & Chilcoat, 1998; Norris, 1992), found that the rate of PTSD was influenced more by violent types of assaults than any other type of trauma. Kessler et al. (1995) reported that of the individuals who had been raped, 50% developed PTSD compared to 5% of the individuals exposed to a natural disaster. Norris (1992) found that the highest prevalence rate for PTSD was associated with sexual assault (14%). Resnick et al. (1993) found that lifetime PTSD was most strongly associated with physical assault followed by rape. Other researchers argue that prolonged victimization and torture are associated with the highest estimates (approximately 50%) of chronic PTSD (Yehuda, McFarlane et al., 1998).

It is unclear whether the high rates are due to differences between event types or individual differences in how certain types of traumas are experienced. For instance, Kessler et al. (1995) and Breslau et al. (2001) found that men are physically assaulted more often than women, but are less likely to develop PTSD following this type of event, suggesting that men and women experience assaults differently. Surprisingly, Kessler et al. found that for sexual assaults, and natural disasters, PTSD prevalence

rates are similar for men and women. Adding to the complexity of determining the saliency of the event type, is the finding that PTSD is no more probable an outcome following trauma than is depression or other mood disorders (McFarlane, 1997; Shalev, Sahar, & Freedman, 1998).

Number of Exposures. Traditionally, studies have focused on a single trauma, without considering the potential effect of previous exposures (Goldberg, True, Eisen, & Henderson, 1990; Kulka et al., 1990; Weisaeth, 1989). However, the influence of previous exposures on PTSD has been reported in studies among the general population (Breslau et al., 1999; Kessler et al., 1995), rape victims and adult victims of childhood abuse (Arata, 1999; Follette, Polusny, Bechtle, & Naugle, 1996; Gilboa-Schectman & Foa, 2001; Kessler, Davis, & Kendler, 1997; Zaid & Foy, 1994), war veterans (King, King, & Foy, 1996), and refugees (Goenjian, Najarian, Pynoos, & Steinberg, 1994).

Brunet et al. (2001) examined the influence of previous exposure on PTSD among a convenience sample of bus drivers. Using DSM-III-R criteria (American Psychiatric Association, 1987), results showed that bus drivers who had high PTSD symptoms in response to an initial exposure had higher symptoms following subsequent exposure than those who had either low PTSD symptoms following the initial exposure or had no previous exposure. The 'low PTSD symptom group' and 'no previous exposure group' did not differ from each other. These researchers suggest that unless the initial exposure elicits significant PTSD symptoms, such exposure

may not be a risk factor for high PTSD symptoms following subsequent exposure.

A similar investigation was conducted by Breslau, Davis and Andreski (1995) among 1,007 members of a large health maintenance organization. At the 3-year follow-up, members with a history of exposure (at baseline) were found to be twice as likely to be exposed during the follow-up period. This effect was independent of risk factors (e.g., family history of psychiatric disorder, neuroticism, early misconduct). Breslau et al. suggest an alternative explanation for the results; that the relationship between previous and subsequent exposure may be spurious (attributed to the effects of other risk factors not accounted for), or reflect a stable personality characteristic that serves to undermine internal coping resources, which in turn increases the risk of developing PTSD.

Studies among emergency personnel have also explored this line of inquiry; however, results have been mixed. Some studies among experienced and volunteer fire fighters (Bryant & Harvey, 1996b; Corneil, 1993; Moran & Britton, 1994; Wagner, Heinrichs, Ulrike, & Ehlert, 1998) and police officers (Robinson, Sigman, & Wilson, 1997) have found an association between previous exposures and PTSD symptoms. In contrast, other studies among fire fighters (Beaton, Murphy, Johnson, Pike, & Corneil, 1999; Hytten & Hasle, 1989), experienced rescue workers (Weiss, Marmar, Metzler, & Ronfeldt, 1995), junior and experienced police officers (Carlier, Lamberts, & Gersons, 1997; Hodgins et al., 2001),

and correctional nurses (Lavack-Pambrun, 2002) did not find a significant relationship. For instance, Beaton et al. (1999) examined the potential influence of previous exposure by controlling for baseline symptoms among fire fighters and paramedics. Previous exposure was not significantly related to changes in PTSD symptoms. These researchers suggest that the effect of subsequent exposures may be more related to resilience than to history of trauma exposure.

Trauma Severity. Several studies have found trauma severity to strongly correlate with PTSD symptoms (Bryant & Harvey, 1996a; Donovan, Padin-Rivera, Dowd, & Blake, 1996; King, King, Gudanowski, & Vreven, 1995; Lauterbach & Vrana, 2001; Lee, Vaillant, Torrey, & Elder, 1995; Schnyder, Moergeli, Klaghoter, & Buddeberg, 2001; Vernberg, LaGreca, Silverman, & Prinstein, 1996). For instance, in a study among 402 undergraduate students reporting a wide range of traumatic events, trauma severity (for the most distressing event) was found to be the strongest predictor of PTSD symptoms. Trauma severity together with the number of exposures accounted for a substantial variance in PTSD scores (R^2 = .31) (Lauterbach & Vrana, 2001).

Expanding on this area of inquiry, a study by Hodgins et al. (2001) attempted to tease apart the effects of trauma severity and previous exposures on PTSD symptoms among 223 junior police officers. Trauma severity was found to be a significant predictor of PTSD symptoms. In contrast to the Lauterbach and Verna (2001) findings, the number of previous exposures as assessed during a 12 month period was not a

predictor for PTSD. It is unclear why in this sample of police officers, trauma severity emerged as a strong predictor of PSTD, whereas the number of exposures was not found to be a significant predictor. These researchers suggest that for emergency services personnel frequent exposure to workplace trauma is a predictable part of the job, and this predictability may offer protection against subsequent exposure.

This cursory look at aspects of the qualifying event (Criterion A1) has yielded equivocal and inconsistent results. Clearly, the event itself is not sufficient in explaining PTSD symptoms. The next section addresses the subjective component in response to the event (Criterion A2), with particular reference to the subjective meaning of trauma (the reconstruction or strengthening of the meaning of the trauma), which has been emphasized by Bracken (2002), who maintains that PTSD is a disorder of meaning.

Subjective Meaning of Trauma (Criterion A2)

Several authors have attempted to define the meaning of trauma in terms of the adaptation process (Janoff-Bulman, 1992; Lazarus, 1991; Patterson & Garwick, 1998; Scholtz, 2000). According to Lazarus' (1991) early formulations, the individual's perceived ability to cope with trauma involves an appraisal and re-appraisal process, which determines how negative the event is thought to be. In other words, it is the significance the individual attributes to the event (i.e., an event that can or cannot be managed) that affects the adjustment process. Janoff-Bulman (1992) maintains that

trauma shatters assumptions about life, and that successful adaptation following trauma involves a search for meaning related to the larger life context, and one's purpose in life (Janoff-Bulman & Frantz, 1997).

Other philosophical trauma theories share Janoff-Bulman's (1992) view that trauma raises questions about meaning and purpose. Bettelheim (1979) gives his philosophical account of his personal experience of Hiroshima and the Nazi camps. He clearly articulates the experience of meaninglessness and how the ability to find meaning from life buffered the horrifying experiences of the concentration camps and helped strengthen adaptive coping behaviour and self-worth.

Like Bettelheim, Frankl (1988) was a prisoner of Nazi concentration camps, and proposed a theory of trauma based on meaning systems. The first tenet of his theory, 'freedom of will', referred to independence of the mind even when faced with terrifying pain and suffering:

> In the final analysis it becomes clear that the sort of person the prisoner became was the result of an inner decision and not the result of camp influences alone. Fundamentally, therefore, any man can even under such circumstances, decide what shall become of him – mentally and spiritually. He may retain his human dignity even in a concentration camp (1988, p. 87).

Frankl (1985) described his second construct, 'the will to meaning', as a primary inner resource: "A man's search for meaning is the primary motivation in his life and not a

secondary rationalization of instinctual drives" (p. 121). 'The meaning of life' construct does not refer to vague generalities about the meaning of life, but rather the choices that are made regarding specific demands for action when faced with suffering. Active contemplation and responses to suffering are viewed as fundamental basic tenets to confronting the reality of a painful situation.

Contemporary theorists have expanded on these early theoretical propositions of meaning and adaptation, by considering the meaning attributed to the traumatic event, self-perception, and the larger context of life. According to this view, the adaptation process following trauma involves three aspects: (a) A search for the meaning of the event in relation to one's life; (b) efforts to restore self-esteem through self-enhancing evaluations; and (c) an attempt to regain mastery over the event and one's life (Patterson & Garwick, 1998). Gregory and Russell (1999) share the cancer stories of individuals, who attributed meaning to their suffering:

> Many people try to make sense of their suffering. They situate, or locate, it within the context of their lives and within the constellation of their belief systems. Understanding the reason behind such an assault makes the experience more endurable for many persons. Yet the meaning behind suffering is a uniquely personal determination of the person who suffers (pp. 180-181).

Recently, Scholtz (2000) conducted a concept analysis of threat in order to clarify the meaning of, and specify the critical attributes of threat. In this context threat is conceptualized as the negative appraisal of the event (i.e., the event is perceived as distressing), that is future-oriented (perception of threat in the future), and that involves a sense of vulnerability. That a traumatic event has the potential for continued harm in the future, as well as potential to threaten the individual's sense of vulnerability, is not disputed. The issue is that trauma research has largely neglected to consider Scholtz's (2000) operational framework of threat due to the traditional focus on the objective trauma (Criterion A1) as the variable of interest, despite the fact that the concept that is measured is threat. A better appreciation of this proposition requires a review of early and contemporary theoretical formulations of threat and psychological consequences.

Chapter II: Literature Review

Conceptualizations of Threat and PTSD

Early Theoretical Contributions

Early theories of trauma came from four psychoanalytic schools of thought, referred to as the psychologies of drive, ego, object relations, and self. Although these psychologies overlap, they are also conceptually separable. A brief overview of each perspective is offered, in order to capture key concepts relevant to this area of study.

Drive Theory. Freud (Freud, 1926a, 1926b, 1940, 1959, 1967), the founder of psychoanalysis, postulated fundamental hypotheses regarding the workings of the human mind (e.g., unconscious processes). His early ideas led to his initial anxiety theory, his first explanation for how a past trauma can cause anxiety in the present. During this time, PTSD was not yet recognized; its formal introduction in the nomenclature occurred in 1980 (DSM-III; American Psychiatric Association, 1980). Therefore, Freud's initial anxiety theory, laid the foundation for what is recognized today as PTSD (Freud, 1896a, 1896b, 1896c). Freud specifically identified childhood sexual abuse as the traumatic experience, which stirred up overwhelming feelings that were defended against (held in unconsciousness by repression) until they were expressed through hysterical symptoms after the hormonal changes of puberty. However, Freud's initial anxiety theory was eventually abandoned because it was recognized that individuals are sexual beings throughout their lifespan, and the theory could not provide

explanations for nonsexual trauma.

Freud's new theory (classical drive theory) used terms derived from his biology background (e.g., stimulus barrier) to explain the lingering effects of trauma (Breuer & Freud, 1955). According to this theory, anxiety results when the protective shield of the stimulus barrier is breached by overwhelming unconscious destructive and libidinal fantasies, which result in disrupted ego functioning. Anxiety was no longer conceptualized as transformed libido, or a discharge process, but instead as the ego's reaction to the threat of real external danger situations, which results in the activation of ego defences. Further, the ego is no longer seen as a passive agency, but rather as an executive agency, that is "endowed" with control over instinctual drives. Freud coined the term *signal anxiety* to denote the reaction to overwhelming trauma, which then leads to the mobilization of ego defences in response to danger signals. His formalization of signal anxiety laid the groundwork for later ego theories of trauma.

Ego Theory. While ego concepts originated from classical drive psychology, especially descriptions of defences against drives (e.g., repression), modifications in ego functioning have been introduced that include: (a) Capacity to delay or postpone drive discharge through defensive functioning, (b) adaptation in terms of external events, and (c) capacity to differentiate internal fantasies from external reality (reality testing). These revisions have led to important propositions about trauma processing.

For instance, Freud's view of the stimulus barrier as a passive threshold "led to untenable conclusions" (Krystal, 1985, p. 132); trauma processing was reconceptualized in ego psychology as involving a complex ego function, which involves both the external trauma and the unconscious destructive or libidinal fantasy (e.g., Fliess, 1970; Gediman, 1971; Geleerd, Hacker, & Rapaport, 1945; Jacobson, 1959; Krystal, 1968, 1978, 1985). Stated more clearly, when the external trauma is internalized and ego functioning is disrupted, the individual experiences trauma symptoms associated with what is known today as trauma avoidance symptoms (e.g., paralysis of action, numbness of feeling) (DSM-IV-TR; American Psychiatric Association, 2000).

Krystal, one of the most well-known ego psychologists, developed a theory of trauma that integrates psychodynamic and information processing models. Specifically, Krystal asserted that early traumatic experiences determine unconscious attitudes associated with strongly experienced affects (energies that increasingly become structuralized), which were regarded primarily as ego functions (both adaptive and defensive) (Krystal, 1968, 1978, 1985).

Similarly, Horowitz's trauma model integrates psychodynamic and information-processing models (Horowitz, 1976, 1986, 1992). In contrast to Krystal (1985), however, Horowitz argued that trauma evokes heightened arousal and an initial response of denial, which then leads to alternating phases of intrusion and attempts to avoid them. Similar to Krystal, however, Horowitz emphasized perceptual processes

associated with the event but instead used the terms 'assimilation' and 'accommodation'. Horowitz maintained that trauma victims who develop PTSD have difficulty with the assimilation and accommodation of the cognitive aspects associated with the event because of individual differences in habitual defences that are associated with the fear of repetition for the original trauma.

According to ego theorists, early traumatic experiences reduce the individual's capacity to tolerate strong affects, which in turn influences both how the event is perceived and the individual's capacity to attribute meaning to the event. Thus, what makes trauma traumatic is the experience of meaninglessness. The successful recovery from a trauma experience requires the reworking of conscious memories associated to the trauma, and the reconstruction of the meaning of the trauma (Horowitz, 1986, 1992; Krystal, 1988).

Object Relations Theory. The drive theory and the ego theory emphasize drives and defences. The other two psychoanalytic schools of thought, object relations theory (e.g., Fairbairn, 1952; Winnicott, 1975) and self psychology (e.g., Kohut, 1984; Ulman & Brothers, 1988) moved away from this emphasis and instead focus on relationships. The object relations perspective emphasizes the transformation of interpersonal relationships into unconscious internalized object relations, based on events that occur during the first year of life. These internalized structures represent the experience of the self in a relationship with another. As an example, for the baby who is hungry and screaming, a

template of an unpleasant experience is laid down in memory, which involves the self as demanding and the mother (the object) as unavailable. The infant may also transform the interpersonal experience with the mother into an internalized structure representing comfort and nurturing (good object), in order to protect against the fear of losing the mother. The processes involving internalization of bad object structures is complex. In its most simplified explanation, these processes involve the infant's fantasy of controlling the mother (bad object) through repetitive trauma experiences - the unconscious fantasy being to transform the bad (mother) object into a good (mother) object, while maintaining a relationship with the bad object because it is better than having no object (mother) at all. Erikson (1963) and other theorists (e.g., Slavin & Kriegman, 1992; Wilson, 1989) referred to repetition as an adaptive process of re-enactment in order to restore the affective connectedness which was ruptured by past trauma (e.g., abuse, neglect). This line of thinking maintains that psychological reactions to trauma result from bad object self-identification (Fairbairn, 1952).

Fairbairn (1952) is well-known for his object relations studies of war-related trauma. Interestingly, Fairbairn was in accordance with Freud (1940) that the traumatic event does not in and of itself cause ongoing anxiety reactions:

> It is rare to find a case in which evidence of pre-existing psychopathological characteristics cannot be detected in the previous history. It is reasonable to

> conclude, accordingly, that a traumatic experience is one which serves to precipitate a psychopathological reaction through the activation of pre-existing, but hitherto latent, psychopathological factors (p. 257).

According to Fairbairn and others (e.g., Klein, 1975; Scharff & Scharff, 1994), adult trauma re-stimulates infantile separation anxiety. Stated more clearly, what typifies pathological reactions to trauma in adulthood, has more to do with how bad the bad objects are, the extent to which the ego identifies with the bad objects, and the strength of habitual ego defences.

Self Psychology. Similar to object relations theory, self psychology focuses on relationships; however, instead of internalized relationships between self-other representations, self psychology emphasizes the importance of actual external relationships. The concept of self offers a subjective side to the ego (Kohut, 1977). In self psychology, it is neither fantasy nor reality that causes trauma reactions; rather the unconscious meanings associated with real events cause trauma by shattering what this perspective refers to as: "illusory notions of personal grandeur or idealized merger with the omnipotent" (Ulman & Brothers, 1988, p. 15).

Similar to other perspectives, self psychology maintains that the experience of early trauma interferes with normal development, however, this tradition emphasizes the 'developmentally arrested self' as contributing to pathology (Kohut, 1966, 1984; Ulman & Brothers, 1988).

Following trauma, the unconscious representations of the self (organizing schemata) regarding subjective relationships to the self are reconstituted out of new and faulty organizing schemata, associated with high levels of pain and diminished capacity for introspection. The new and altered representations of the self are maladaptive and manifest behaviourally as lowered self worth (Kohut, 1977). In self psychology, when the individual experiences trauma damage to these unconscious representations of the self are primary determinants of pathology and changes in other psychological systems take on an important but secondary role (Garfield & Leveroni, 2000). This view is in line with PTSD's Criterion A2, which recognizes the individual's subjective responses to trauma.

Affect and Threatening Experiences. Various statements and hypotheses about how affect plays a role in explaining trauma have been offered. Theoretically, Freud came to consider affect first as a state of mind that has the power to change the meaning of stimuli and later as liberated from its unequivocal relationship with libido (Freud, 1893, 1894, 1895, 1900, 1926a). More precisely, affects were viewed as psychical trauma in the Studies (1893,1894); as the re-emergence of a painful memory in the Project (1895); as unconscious discharge processes, instead of psychic drive energy, in The Interpretation of Dreams (1900); and as ego functions and signals in Inhibitions, Symptoms, and Anxiety (1926a). Even when Freud replaced the drive-derivative conception by one of affects as adaptive responses to

external stimuli, his explanations of the subjective side of affects do not go beyond discussions of pleasure and "unpleasure". Notwithstanding Freud's theoretical problems explaining the subjective side of affects and their vicissitudes, his efforts to loosen the tie of affects to the drives provided an avenue for discussions that take into account subjectively experienced trauma situations.

Freud's successors (e.g., Applegarth, 1971; Holt, 1976; Jacobson, 1994; Lazarus, 1982; Leventhal, 1982; Leventhal, Norenz, & Steele, 1984; Lewin, 1965; Plutchik, 1980; Rapaport, 1971) have convincingly emancipated affects from their all-encompassing dependence on psychic energy, drives, and arousal. With the dismantling of these concepts as explanations of affect, theories emerged regarding the structure of affects, their modes of functioning, and the central place affects have in psychic development. For instance, the drive derivative conception of affects has been replaced by the signal theory of affect, in which 'affect signals' alter the manner in which the individual feels and behaves (Brenner, 1982; Emde, 1980, 1988; Jacobson, 1994; Krystal, 1975). Affects have also been described as indissoluble from cognitions because they deal with valuable knowledge and involve vital interpretations that influence the way in which experiences are selected and shaped (Lazarus, 1982, 1984a; Lazarus & Folkman, 1984; Lichtenberg, 1987; Mandler, 1975; Novey, 1961; Sandler & Freud, 1985; Stern, 1985; Taylor, 1985), or as having a permanent relationship with object representations (Emde,

1980, 1988; Kernberg, 1976, 1982; Sandler & Sandler, 1978), or, alternatively, as involved in the shaping of the sense of self (Emde, 1983; Kernberg, 1982; Sandler & Freud, 1985; Schwartz, 1987; Stern, 1985).

Although the basic ideas of these early four (conceptually separable but not separate) psychologies have been revised, many fundamental hypotheses have contributed to contemporary advances. These early schools of thought, however, were not burdened by having to formulate physiological and biologically based cognitive explanations of trauma. The following discussion on current psychological theories of emotion serves to explicate advances in this area in more detail. Further, contributions that have incorporated aspects of personality in trauma research have also built on the central tenets of these early theorists.

Current Theoretical Conceptualizations of Emotion

Two main psychological theories of emotion (physiological and cognitive) are being accorded increasing significance in advancing conceptions of trauma. These two theoretical orientations provide comprehensive formulations on the adaptive and subjective value of emotions, central to the trauma experience. Further, these theories are heavily imbued with hypotheses regarding physiological changes and biologically based conceptions of emotions, relevant to the etiology of PTSD. A review of these positions is useful in elucidating relative contributions and increasing our understanding of the adaptive role and subjective aspect of emotions on the development of PTSD.

Physiological Theories of Emotion. Early proponents of the physiological theories of emotion focused on the underlying biology of emotion. Theorists were split between those who regarded emotion as activated by the autonomic nervous system and those who attributed emotion to the cortex, with many changing their theoretical commitment in a number of areas (Plutchik, 1980; Pribram, 1984; Scott, 1980). The main problem with these physiological approaches to emotion is that they failed to account for the complexities of the emotional and neurological processes, and did not elaborate on the interrelations between affects and cognitions (Pribram, 1984). Nonetheless, early theories are regarded as important in setting a starting point, and prompting contemporary theorists to advance biological contributions in the area of PTSD.

Current biological formulations emphasize the interaction between the autonomic and cortical systems in the facilitation of emotions. There is ample empirical evidence supporting the view that trauma results in a fear response that involves the parallel activation of the implicit and explicit memory systems (Richter-Levin, 2004). The hippocampus has a significant role in the formation of explicit memories: the conscious recall of past events. Via its neural connections, the hippocampus enables the processing of the context of an aversive event (Maren, 2001). The amygdala specializes in implicit memory formation: the decoding of emotional memories related to fear (LeDoux, 2000; Maren, 2001). In a matter of

milliseconds, the amygdala assesses the sensory stimuli (i.e., violent situation) as threatening and then activates the fear response (biochemical and behavioural systems) to the threat (Abe, 2001; Akirav & Richter-Levin, 2002; Roozendaal, 2000; Yehuda, 2004). Some researchers (e.g., LeDoux, 1995; Nutt, 2000; Tucker & Trautman, 2000; Yehuda & Harvey, 1997) argue that at low levels of stress both the contextual features of the hippocampal system (responsible for recording autobiographical events) and the fear-evoking features of the amygdala (responsible for processing threat and emotional memory) facilitate enhanced encoding with increasing arousal, whereas with traumatic stress the hippocampal system may become dysfunctional and the amygdala becomes hyper-responsive. In other words, individuals who develop PTSD may be predisposed to biological hyper-responsiveness, with resultant disruption in neurocircuits of fear and anxiety (Yehuda, McFarlane et al., 1998).

By its very nature, a sensory stimulus signalling danger initially goes to the thalamus and then the information is routed via two parallel pathways: the thalamo-amygdala pathway (the short sub-cortical pathway) and the thalamo-cortico-amygdala pathway (the long pathway). The thalamo-amygdala route activates the amygdala which produces an emotional response prior to any cognitive integration taking place. The thalamo-cortico-amygdala route involves various levels of cortical processes (primary sensory cortex, unimodal associative cortex, polymodal associative cortex) in its communication with the amygdala

(LeDoux, 2000; McDonald, 1998; Quirk, Armony, & LeDoux, 1997). In addition to the cortex processing the information and communicating it to the amygdala, the hippocampus also comes into play (Kim & Diamond, 2002). As the hippocampus is closely connected to the amygdala and specializes in storing and retrieving explicit trauma memories, the entire context of the event can cause anxiety (Yehuda, 2000).

Empirical evidence suggests that PTSD may be facilitated by aberrations in the normal biological response to fear and that this condition represents a state of sustained fear following trauma (Yehuda, 2000; Yehuda, McFarlane et al., 1998). For instance, when danger is imminent, the autonomic bodily responses (startle response) that occur (e.g., sweaty hands, dry mouth, tense muscles, increased heart rate and blood flow, glucose availability to skeletal muscles) are triggered by the discharge patterns of the amygdala to the nuclei of the sympathetic nervous system (SNS) in the brainstem and the hypothalamus, which stimulates the adrenal gland to release cortisol. According to Yehuda and colleagues (e.g., Yehuda, 2000; Yehuda, 2004; Yehuda, McFarlane et al., 1998; Yehuda, Schmeidler, & Wainberg, 1998) and others (e.g., Cohen, Kotler, & Martar, 1997; Orr, Lasko, & Shalev, 1995), increased SNS activity disrupts normal memory processing (over-consolidated or inappropriately remembered) due to sustained emotional distress associated with re-experiencing or reprocessing the trauma. Nutt (2000) argues that disruption in the trauma processing initiates a cascade of events, which manifest as

symptoms classically found in PTSD (e.g., fear responses). Support for this conclusion was found in studies among rape victims (Resnick, Yehuda, & Foy, 1995) and motor vehicle accident victims (McFarlane, Atchison, & Yehuda, 1997).

In order to cope with the fear-provoking features of trauma, the brain triggers the autonomic nervous system (ANS), which is involved in the discharge of two hormones (cortisol, adrenalin). The adrenalin activates energy reserves and a cascade of involuntary physical responses, whereas the release of cortisol shuts down the sympathetic activation that has been initiated by the event. Some researchers (e.g., Yehuda, 2000; Yehuda, 2004; Yehuda, Resnick, Schmeidler, Yang, & Pitman, 1998) maintain that for some individuals who experience trauma the level of cortisol that is released may be insufficient to shut down the sympathetic nervous system (SNS). There is substantial empirical evidence indicating that cortisol levels are lower for PTSD sufferers than for those who do not develop this disorder (Resnick et al., 1995; Yehuda, Resnick et al., 1998). Moreover, cortisol is associated with memory consolidation, and lower cortisol levels together with elevated norepinephrine have been associated with increased subjective distress (Jeong et al., 2000).

Studies have differentiated the biological alterations that occur in the immediate aftermath of trauma, from the alterations that are present when PTSD symptoms develop. Some prospective studies have identified elevated heart rate (Shalev et al., 1998) and reduced cortisol levels

(Delahanty, Raimonde, & Spoonster, 2000; McFarlane et al., 1997) as early predictors of PTSD, whereas others have found that increased auditory startle response (e.g., Shalev, Peri, & Brandes, 2000) and intrusive symptoms (Yehuda, McFarlane et al., 1998) were not differentiated in the immediate aftermath of trauma. Further, evidence suggests that supersensitivity of the hypothalamus-pituitary-adrenal (HPA) axis, increased activation of the sympathetic nervous system, and biological dysregulation of the glutamatergic, noradrenergic, serotonergic, and neuroendocrine pathways may play a part in the pathophysiology of PTSD (Friedman, 1997; Nutt, 2000; Tucker & Trautman, 2000; Yehuda, 2000). Yehuda (2000) and colleagues (Yehuda, Siever, & Teicher, 1998) argue that unsuccessful termination of the fear response leads to PTSD; in particular, biological alterations in the HPA and SNS systems, and increased activation of the amygdala, may represent the underlying failure to effectively process the traumatic memory.

Recent biological studies among PTSD sufferers have shown that the initial response to fear is influenced by the subjective assessment of the trauma. This has prompted cognitive behavioural theorists to examine why individuals with PTSD, compared to those without PTSD, are oversensitive to safety cues, perceive events as more threatening, and have sustained fear responses (Ehlers & Clark, 2000; Foa, Davidson, & Frances, 1999; Friedman, 1997; Owens & Chard, 2001; Owens, Pike, & Chard, 2001; Wenninger & Ehlers, 1998). Exploring advances in this area contributes to a better

understanding of subjective fear responses to trauma.

Cognitive-Behavioural Theoretical Contributions. Having already mentioned the significant relevance of emotion to the study of trauma and PTSD, the groundwork is laid out to discuss the main tenets of emotion in this adjacent area of study. Early theorists of emotion have hypothesized about the underlying mechanisms of emotion that provide for the subjective component that generates emotions. However, early efforts that account for, and conceptualize, the subjective aspect of emotions, have been problematic due to the use of different terms, such as "emotional appraisal", "evaluative cognitions", "subjective aspect of affects", or "cognitive appraisal". These terms are similar on some level but vary in terms of their assumed association to the quality and intensity of emotion. For instance, Mandler (1984) refers to 'evaluative cognitions' to describe the qualitative aspect of emotion, whereas physiological arousal was viewed as playing a critical role in the intensity of emotions. In his view, the congruity/incongruity between the event and the existing schemata (inner structure of mental representations of past experience) generate the quality of the emotional experience; the interactive process was assumed to be the basis of evaluative cognitions.

Averill (1980) uses the term 'emotional appraisal' to describe the process in which the emotional rules of society are interpreted and construed in behaviour. This author maintains that it is the symbolism related to physiological arousal that determines the emotional quality. Lazarus

(1982) also emphasized the importance of the individual's interaction with the environment and uses the term 'cognitive appraisal' to refer to the individually determined comprehension and interpretative processes that shape the quality and intensity of the emotional experience. This theorist (Lazarus, 1982, 1984a, 1984b) argues that cognitive appraisals underlie coping activities, which in turn alter the quality of emotional responses due to the reinterpretation (reappraisal) of the personal significance or meaning of the earlier appraised circumstance. According to Lazarus, individuals are meaning-oriented (constantly evaluating and searching the environment for cues); meaning is viewed as belonging in the individual's personality.

Leventhal (1982) maintained that although arousal is necessary to elicit an emotional experience, the content of the cognitive experience is sufficient to cause the quality of emotion. His emotional processing model (1984) outlines the mechanisms underlying feelings, which consist of emotional representation (interpretations of stimuli and subjective emotion), coping (action plans that alter stimulus situation and emotional experience), and appraisal (evaluation of coping efforts). In a similar vein, Lang's (1979) bioinformation theory of emotion adopts the notion of fear as a cognitive structure that contains representations of, and the meaning of, stimuli.

Drawing on these early theories of emotion, the emotional processing trauma theory proposed by Foa and Kozak (1986) emphasized arousal and the content of the cognitive

experience, and also included conceptualizations regarding the absorption and extinction (or habituation) of negative affect associated with the information contained in the fear memory. This line of reasoning bears some resemblance to the psychoanalytic theory of unconscious meaning structures:

> The attitude toward one's affects, which results from the nature and extent of infantile, or later massive, traumatic experiences becomes a determinant of perceptual and cognitive styles, which in turn significantly determine the nature of those defences employed to prevent trauma (Foa & Kozak, 1986, p. 142).

Foa and Kozak's emotional processing theory of fear structures, which is probably the most sophisticated cognitive-behavioural theory of trauma, bears resemblance to Krystal's (1985) ego psychological theory of trauma which argued that the individual's capacity to endure strong affects gates perception and cognitions instead of the other way around. Also similar to Krystal's view, treatment focuses on helping individuals tolerate a greater intensity of emotions, with the aim of preventing automatic activation of unconscious memories of the traumatic event. This process is in contrast to the view proposed by others (e.g., Horowitz, 1986; Janoff-Bulman, 1992), who theorized that preoccupations with trauma lead to the automatic activation of conscious memories. The essence of Foa and Kozak's theory is that symptom reduction occurs when the fear structure is activated through the presentation of the feared stimuli (e.g., imaginal, in vivo exposure) and then corrective

material (incongruent with the pathological information contained in the fear structure) is incorporated in memory.

The emotional processing trauma theory described by Foa and colleagues (e.g., Foa, 2000; Foa, Davidson et al., 1999; Foa & Meadow, 1997) provides a good theoretical framework for understanding how both cognitive and affective processes operate following trauma. Foa and colleagues (Foa, 1997, 2000; Foa, Riggs, Massie, & Yarczower, 1995; Gilboa-Schectman & Foa, 2001) argue that activation of the trauma fear structure (emotional processing) and reconstruction of distorted cognitions (cognitive processing) are both required for successful recovery following trauma, whereas disrupted activation of these processes leads to the development of PTSD. Specifically, this theory maintains that three factors are important for successfully processing the traumatic event: emotional engagement of the event, organization of the trauma narrative, and reconstruction of dysfunctional cognitions (Hembree & Foa, 2000).

To date, few studies have explored the association between emotional engagement and trauma recovery (Foa, 2000). This is surprising since many theorists from the distant past (e.g., Fenichel, 1945; Freud, 1940) emphasized the importance of extracting pathological memories in their therapies. More importantly, commonly experienced PTSD symptoms, such as emotional numbing and avoidance, support the importance of emotional engagement for recovery (Jaycox, Foa, & Morral, 1998). Recently, retrospective studies among Vietnam veterans (Bremner, Southwick, & Brett, 1992; Marmar,

Weiss, & Schlenger, 1994), as well as other studies among firestorm victims, female assault victims, and chronic PTSD sufferers (Gilboa-Schectman & Foa, 2001; Jaycox et al., 1998; Koopman, Classen, & Spiegel, 1994) have found that individuals who report high distress (emotional engagement) during or shortly after the trauma show better recovery than individuals who report low distress (absence of emotional engagement) after the trauma.

The second important factor implicated in the successful processing of the trauma has to do with the individual's ability to organize the trauma narrative (verbalize details of the traumatic event). According to this view, the trauma narratives of victims are characterized as unorganized (e.g., repetitions, fragmented sentences), and an important aim of cognitive behaviour therapy is to assist victims provide a narrative of their trauma experience. This may include asking the trauma victim to speak in the present tense, in the first person, or to write down details of their trauma (Foa, Ehlers, & Clark, 1999; Foa & Rothbaum, 1997; Hembree & Foa, 2000). Support for this position comes from a study in which PTSD symptom severity three months after the trauma was predicted by the degree of trauma narrative articulation shortly after the trauma (Amir, Stafford, & Freshman, 1998). Gregory and Russell (1999) also emphasize the importance of the construction of narratives in overcoming human suffering, "meanings are conveyed in how people talk about what is happening to them" (p. 22).

Last, this theory of fear maintains that two cognitive distortions characterize PTSD sufferers. First, the trauma memory has a number of stimulus elements associated with danger, with the resultant perception of the world as unsafe (i.e., The world is dangerous; There is no safe place). According to this view (e.g., Ehlers & Clark, 2000; Foa, Dancu, & Hembree, 1999; Foa, Ehlers et al., 1999), individuals who perceive their environment as unsafe are more at risk for developing chronic PTSD. This is in line with PTSD's Criterion A2 (DSM-IV-TR; American Psychiatric Association, 2000): the subjective response of intense fear. Second, the associations between response elements and self-evaluations regarding competency also characterize the chronic PTSD sufferer (i.e., PTSD symptoms are a sign of weakness and incompetence) (Foa, Dancu et al., 1999; Foa, Ehlers et al., 1999; Hembree & Foa, 2000). Regrettably, few studies have provided for the potential link between self-evaluations of competency and PTSD symptoms.

Similar to the emotional processing theory, other contemporary models of PTSD have also emphasized the role of distorted cognitions in the maintenance of PTSD symptoms (Ehlers & Clark, 2000). An important element of Ehlers and Clark's cognitive model of PTSD is that individuals with chronic PTSD experience persistent cognitive distortions in the areas of safety and vulnerability. Other authors (e.g., Holeva, Terrier, & Wells, 2001; Papageorgious & Wells, 2001; Purdon, 2001; Rachman, 1998, 2001; Rachman & Shafran, 1999; Wells & Carter, 2001) have argued that dysfunctional

cognitions interrupt the emotional processing of the event, which in turn makes the individual more vulnerable and at risk for developing PTSD. Similarly, Purdon (2001) and others (e.g., Holeva et al., 2001; Papageorgious & Wells, 2001; Wells & Carter, 2001) maintain that distorted cognitions about one's negative self and expectancy that future threat will occur, will likely result in anxiety.

Support for these hypotheses was found in studies among women with histories of sexual abuse (Foa, Dancu et al., 1999; Owens et al., 2001; Wenninger & Ehlers, 1998). Results show that PTSD sufferers report significantly more distorted cognitions about the dangerousness of the world and about themselves, compared to women who were assaulted but did not develop PTSD and those who were not assaulted. Treatment that focused on altering cognitive distortions contained in the fear structure (dangerous to safe) and self-perceptions (incompetent to competent) proved effective.

To summarize, the early and contemporary theories discussed thus far provide a good framework for the direction of current trauma research. Freud's psychodynamic explanations of trauma were embedded in affect terms. His successors advanced his theoretical explanations by promoting the subjective side of affects. Contemporary trauma research has continued this line of thinking, and explanations in terms of the subjective side of affects and cognitions figure prominently today. Only recently has trauma research considered the potential influence of personality on PTSD symptoms, which is surprising given the

surge of studies in other domains that have linked personality with health outcomes.

Personality Theories and Individual Differences

Traditional trauma research has focused on the psychological consequences of trauma exposure (e.g., Goldberg et al., 1990; Green & Grace, 1998; Kulka et al., 1990; Weisaeth, 1989). This practice was consistent with DSM-III's (American Psychiatric Association, 1980) categorization of PTSD at the time, which focused on the dose-response relationship: higher levels of exposure are related to greater severity of PTSD symptoms. As a result of the consistent finding that PTSD does not develop in all individuals who are exposed, or among all those who show acute stress reactions, opponents of DSM's categorization started investigating risk factors related to the occurrence of this disorder. Some of the contenders that have been implicated as risk factors for PTSD include trauma severity, lack of social support, failed coping behaviours, family psychiatric history, and differences in personality characteristics (Breslau et al., 1999; Brewin, Andrews, & Valentine, 2000; Bromet, Sonnega, & Kessler, 1998; Hildalgo & Davidson, 2000; Norris et al., 2002; Shalev, Tuval-Mashiach, & Hadar, 2004; Silver, Holman, & McIntosh, 2002).

Much of the trauma work to date that has studied personality has emphasized vulnerable type of personality characteristics (King, King, Foy, Keane, & Fairbank, 1999; Lauterbach & Vrana, 2001; Lee et al., 1995; Regehr & Marziali, 1999; Roemer, Litz, Orsillo, Ehlich, & Friedman,

1998; Schnurr & Vielhauer, 2000; Shalev et al., 1998). Personality vulnerability (e.g., paranoia, neuroticism, antisocial, borderline traits) has been related to increased risk of exposure, and directly linked with higher levels of PTSD symptomatology (Forbes, Creamer, & McHugh, 1999; Lauterbach & Vrana, 2001; Lee et al., 1995). Personality vulnerability (e.g., negativism, psychopathology, psychopathic deviate, neuroticism) has also been implicated as exerting its effect together with aspects of the traumatic event (e.g., number of exposures, severity) on PTSD (Bramsen, Dirkzwager, & van der Ploeg, 2000; Lauterbach & Vrana, 2001; Schnurr, Friedman, & Rosenberg, 1993).

For instance, in the study conducted by Lauterbach and Vrana (2001), neuroticism and trauma severity were found to be strong predictors of PTSD symptomatology, accounting for 43% of the variance. These researchers and others (e.g., Bramsen et al., 2000; King et al., 1995; Schnurr & Vielhauer, 2000; Vernberg et al., 1996) maintain that individuals with pre-existing vulnerability may be prone to cognitive distortions, a negative view of the world, and heightened affect, all of which may lead to difficulty processing the emotional meaning of the event.

It is reasonable to assume that individual differences in personality may be implicated, directly or indirectly, in the complex pathways by which trauma gives rise to PTSD symptoms. The relevance of personality in explaining how environmental stressors influence detrimental outcomes has been recognized by personality theorists (Revelle, 1993).

Personality theories focus on individual behaviour. The approach adopted by different disciplines in relation to the role of personality can be classified in terms of levels of generality (i.e., individual differences in behaviour, similarities in behaviour) and levels of explanation (Revelle, 1993). In terms of levels of generality, evolutionary, psychoanalytic, behaviour, and sociology theorists focus on similarities in behaviour (Buss, 1991; Pervin, 1990; Revelle, 1993), whereas trait theorists emphasize differences and similarities among individuals (Carey & DiLalla, 1994; Hofstee, 1991).

Explanations of individual differences have ranged from analyses of particular genetic sequences associated with behaviour, developmental processes, cognitive structures and affective reactions, to how self-descriptions and beliefs combine to affect behaviour. Although emphasizing general laws, evolutionary psychologists study the origins of species-typical challenges and behaviours to explain why genetically-based individual differences exist (Buss, 1991; Tooby & Cosmides, 1990). Explanations of what constitutes human nature are adopted by theorists who examine individual differences with respect to cognitive, affective, and behavioural processes (Frijda, 1993; Watts, 1993). Philosophical theorists examine how recurrent life themes affect dimensions of self-description and questions of meaning. Behaviour geneticists study the genetic architecture of specific traits and how genes affect dimensions of individual differences by modifying biological

systems and regulating processes (Bates & Wachs, 1994; Wiggins & Pincus, 1992).

Traits. Traits are not behaviour per se but rather summary statements representing the probability of being in a particular state, or latency of being in a state regarding a new stimulus. According to trait theorists, individual differences in the functioning of biological systems (stable predispositions) result in both different sensitivities to novel stimuli and different response biases. Temporary cognitive and affective states are viewed as intervening between traits, the stimulus situation, and responses (Eysenck, 1991, 1993; Gray, 1994). The trait-state relationship is seen as complex and dynamic, and affects the encoding, storage, retrieval, and integration of information (Anderson & Revelle, 1994; Christianson, 1993; Revelle, 1993; Revelle & Loftus, 1993). Eysenck and Mogg (1993) argue that the relationship between anxiety and the attention given to threat-related cues varies as a function of trait and state anxiety. Theoretically-driven trait theorists have gone beyond the simple assertion that interactions between traits and situations produce consistent patterns of behaviour and instead argue that stable individual differences result in different patterns of behaviour across situations (Revelle, 1993). In other words, failure to alter responses in different situations represents pathology rather than adaptive functioning.

Temperament. Parallel to the work on trait models of personality, is the work on temperament and development. For

the most part, discussions of adult personality and temperament have been isolated from each other; however, some researchers have integrated biological traits and temperamental dimensions of personality development into their theories. For instance, links between temperamental differences in reactivity to novel stimuli and hemispheric activation (Calkins & Fox, 1994; Davidson, 1993), between approach and avoidance processes and the neural structure of temperament (Nelson, 1994; Strelau, 1994), temperament and attachment (Goldsmith & Harman, 1994), temperament and long-term consistencies in behaviour (Caspi & Bem, 1990), and delinquency with ego-resiliency (Robins, John, & Caspi, 1994) figure prominently in the literature.

In a thoughtful review (Revelle, 1995), unique patterns of behaviour have been described as the focus of social-cognitive theorists. Although dispositional structures are acknowledged, these theorists have been more concerned with unique individual differences in cognitive structures and processes following novel stimuli, such as the dynamic and flexible manner in which new information is processed differently depending on prior beliefs. This is similar to the dispositional approach that recognizes the effect of existing structures on different cognitive processes, however, the difference between these two theoretical approaches lies in the emphasis given to the adaptive use of schemas instead of the causal determination for differences. Social-cognitive theorists' view individuals as active information processors who act on hypotheses about their own

selves: "the working self-concept is influential in the shaping and controlling of intrapersonal behaviour (self-relevant information processing, affect regulation, and motivational processes)" (Markus & Cross, 1990, p. 578).

That the proposed conceptualization of personality differs from theorist to theorist is not to be taken as an indication of theoretical weakness, but rather as an indication of the complexity in the manner in which personality differences affect health outcomes. Further, the focus adopted by various theorists to explain individual behaviour reflects approaches unique to the relevant position. Despite widespread agreement that differences in personality shape mental health outcomes, this area is sorely neglected in trauma research. Recently, links have been found between PTSD and personality vulnerability factors, such as neuroticism, antisocial personality, and borderline personality (Lauterbach & Vrana, 2001; Lee et al., 1995; Schnurr & Vielhauer, 2000). The opposite of personality vulnerability is referred to as stable internal resources (SIRs). SIRs (inherited or acquired resistance to adversity) offer an alternative explanation for the personality-PTSD relationship. Exploring both personality vulnerability and SIRs is beyond the scope of this discussion. Given that studying SIRs will identify those with both weak and strong SIRs, the following discussion will be limited to existing knowledge in this area.

Stable Internal Resources (SIRs)

Some individuals have the capacity to emerge relatively

unscathed from the most catastrophic of situations, which would cause PTSD symptoms in other individuals. Individuals with the capacity to tolerate adversity are known to have strong SIRs, which typically involve generalized beliefs about the world. Although the terms 'generalized beliefs' and 'perceptual processes' are often confused and used interchangeably in research, these two domains are conceptually different. 'Generalized beliefs' refer to the individual's orientation, which is stable and antecedent to perceptual processes, whereas 'perceptual processes' tend to be situation specific (Frommberger et al., 1999).

Candidates for this kind of generalized orientation include: (a) Locus of control (LOC; Rotter, 1966, 1975), (b) self-efficacy (SE; Bandura, 1977, 1986), (c) hardiness (HARD; Kobasa, 1979, 1982a; Kobasa, Maddi, & Puccetti, 1982), (d) sense of coherence (SOC; Antonovsky, 1993, 1998), and (e) resilience (Beardsley, 1989). There is an *a priori* assumption that being high on these generalized orientations facilitates successful resolution of negative events and maintenance of or return to health. Being high on LOC is characterized by internal control, high SE by mastery of experience, and high HARD by a sense of one's ability to respond appropriately to presented challenges on one's own. However, given that it is not possible to neither control nor predict traumatic events, it is unreasonable to assume that having internal control, mastery of experience, or being able to act on one's own would predict successful adaptation following trauma exposure. Further, these

constructs rest on the assumption that the individual has resources to deal with a challenging situation, without providing a framework for understanding whether the resources (at one's disposal) are perceived by the individual as adequate enough for managing it. Both the sense of coherence (SOC) and resilience constructs capture the subjective perception of the threatening event and the individual's awareness of their own internal resources to manage the event, which are relevant to the study of trauma.

Sense of Coherence (SOC). Antonovsky's (1993) SOC construct holds promise for understanding the psychological outcomes following trauma. Antonovsky defines SOC as:

> . . . a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that the stimuli deriving from one's internal and external environments are structured, predictable, and explicable (comprehensibility); resources are available to meet the demands posed by these stimuli (manageability); and these demands are challenges, worthy of investment and engagement (meaningfulness) (1987, p. 19).

Antonovsky maintains that individuals develop a generalized way of perceiving the world as more or less coherent and predictable by age 30. According to this framework, when exposed to a threatening event, it is the strength of the individual's SOC that determines whether the outcome will be detrimental. It is assumed that individuals with an established and healthy SOC are better able to rise above

the challenge presented by the trauma. In other words, those with a strong SOC attain orderliness from the environment, whereas those with a weak SOC may continue to be subjected to debilitating experiences. This does not mean that an individual with strong SOC is untouched by trauma, but when faced with such an event it will be perceived in a clear manner (comprehensibility), resources to cope with the event will be mobilized (manageability), and the event will be perceived as a challenge worthy of emotional investment (meaningfulness). Given that personality appears to have a unique role for understanding mental health outcomes, the potential usefulness of a personality measure of coping ability will be of interest to trauma researchers.

Empirical studies of SOC. The concept of SOC has been well studied in health psychology (e.g., Larsson, Michel, & Lundin, 2000; Schnyder et al., 2001; Sommer & Ehlert, 2004), as well as in work psychology (e.g., Albertsen et al., 2001; Feldt, 1997; Feldt et al., 2000; Soderfeldt, Soderfeldt, Ohlson, Theorell, & Jones, 2000). Despite widespread agreement in the empirical literature that emergency professionals, including nurses, are frequently exposed to workplace violence, resulting in personal and work consequences (Barling et al., 2000), studies exploring the relationship between SOC and PTSD symptoms among these high risk professionals have only recently appeared in the literature. Nursing studies have identified links between SOC and occupational stress (Tak-Ying Shiu, 1998), strain (Hogue & Bussing, 2004), burnout (e.g., Heyns, Venter,

Esterhuyse, Bam, & Odendaal, 2003; Levert, Lucas, & Ortlepp, 2000a; Tselebis, Moulou, & Ilias, 2001), and anxiety measures (Langius, Bjorvell, & Antonovsky, 1992; Palsson, Hallberg, Norberg, & Bjorvell, 1996), but no studies to date have investigated the relationship between SOC and PTSD among nursing groups.

Two studies (Langius et al., 1992; Palsson et al., 1996) have explored the relationship between SOC and anxiety among nursing groups and seem most relevant to the study of PTSD. Palsson, Hallberg, Norberg, and Bjorvell (1996) investigated the relationships between SOC, empathy, burnout, and various personality and anxiety measures among 39 Swedish primary health care nurses providing care to women with breast cancer. The effect of clinical supervision (provided by the first author of the study and a research assistant) on these variables was also explored. Results indicated that lower scores on both SOC and empathy and higher scores on burnout, correlated with higher scores on personality subscales, as well as somatic and psychic anxiety. This finding is consistent with those reported by McCubbin and colleagues (1998) and by Kalimo and Vuori (1990). Socialization, however, showed an opposite pattern; that is, the higher the SOC and empathy scores, the higher the socialization scores (positive outlook toward social interactions). Clinical supervision did not have a significant effect on burnout, empathy, or SOC. However, the nurses' clinical supervisors were not known to them, supervision was conducted in a group format, and perceptions

of work support from co-workers and managers was not queried in any standardized manner. Thus, the findings in this study cannot be interpreted as suggesting that SOC is not related to workplace support per se.

Langius, Bjorvell, and Antonovsky (1992) found similar relationships between SOC, motivation, and the somatic/psychic anxiety scores among registered nurses involved in an in-house training program. Overall, these researchers found a negative relationship between SOC and anxiety scores, and a positive relationship between SOC and positive attitude toward involvement and interactions with patients. Conversely, low SOC scores and a negative attitude toward involvement and interaction with patients both contributed to anxiety symptoms. Arguably, nurses with a strong SOC may already be motivated and have a positive outlook on life (meaningfulness dimension). In contrast, having a negative attitude may be more indicative of not having the necessary resources to manage stressful situations, which may explain why these nurses experienced more anxiety symptoms.

Non-nursing studies have examined links between SOC, trauma and PTSD. Wolff and Ratner (1999) investigated the relationship between SOC and chronic stress, childhood trauma, adult trauma, and social support, using data from the National Population Health Survey (N = 14,626; Statistics Canada, 1995). Chronic stress was significantly related to SOC, explaining 13% of the variance. Childhood trauma and adult trauma were related to SOC, but childhood

trauma had stronger explanatory power. Perceived social support also correlated positively with SOC. In line with Antonovsky's claims (1987) that social support while growing up strengthens SOC, findings showed an interaction effect between social support and childhood trauma on SOC, meaning that the effects of childhood trauma on SOC were minimized with greater social support.

More directly related to the current study, Frommberger et al. (1999) investigated the relationship between SOC and PTSD among 51 severely injured traffic accident victims. The results showed that individuals who met criteria for PTSD or subsyndromal PTSD after the trauma had a significantly lower SOC total score compared to individuals without any psychiatric diagnoses. Severity of injury did not have a significant relationship with SOC total score. Distorted cognitions, however, measured as expectation of negative sequelae ($r = .0.29$, $p \leq 0.05$) and expectation of life change due to the accident ($r = -0.24$, $p \leq 0.05$), correlated negatively with the SOC total score, and this relationship was independent of severity of injury.

Two studies have explored the relationship between SOC, trauma, and PTSD among groups (mountain guides, Swedish battalion soldiers) who are in professions that place them at risk of being exposed to repeated traumas, as do nurses. Sommer and Ehlert (2004) investigated the relationship between SOC and PTSD among mountain guides exposed to life threatening search and rescue operations. The PTSD prevalence rate was very low (2.7%) and SOC scores were

high. SOC was significantly and negatively correlated with PTSD; however, search and rescue operations were not significantly correlated with PTSD symptoms. These researchers propose that detrimental outcome (e.g., PTSD symptomatology) may have more to do with pre-event mental health than with exposure to trauma per se, and suggest that SOC may be a marker for well-being. Similarly, a study conducted by Larsson, Michel, and Lundin (2000) among a Swedish battalion in Bosnia found that poor mental health post-service was related more to pre-service mental health and SOC than to tour-related traumatic events and post-trauma support. Like the respondents in the two studies mentioned above, nurses may be frequently exposed to workplace traumas due to the nature of their work. It is reasonable to assume that high SOC scores among nurses would also be negatively related to PTSD independent of exposures. Support for this assumption is found in studies among other groups that have found a negative relationship between high SOC scores and PTSD symptoms (Jonsson, Segesten, & Mattsson, 2003; Schnyder et al., 2001; Schnyder et al., 2000).

Resilience. Similar to Antonovsky's (1993) SOC construct is the concept of resilience, which is broadly defined as the individual's functional capacity to thrive in the face of trauma (McFarlane & Yehuda, 1996). Some authors emphasize the individual's ability to problem-solve and overcome adversity with no apparent disruption in functioning (Bonanno, 2004), some emphasize the emotional factor (Bonanno, Noll, Putnam, O'Neill, & Trickett, 2003;

Bonanno, Papa, & O'Neill, 2001; Connor & Davidson, 2003; Fredrickson, Tugade, Waugh, & Larkin, 2003), and others emphasize self-understanding as a central aspect of resilience (Beardslee, 1989). Beardslee (1989) views self-understanding as stable, and "among the higher level, complex, integrative ego functions" (p. 274). According to this author, self-understanding involves: (a) An adequate appraisal of negative events over time, (b) realistic appraisal of the capacity for and likely consequences of one's action, and (c) commitment to engage in actions in the face of adversity. As an example, individuals who are committed have a generalized sense of purpose and are emotionally invested to find meaning in the traumatic event, whereas for those who are not resilient this same event would be debilitating.

A differentiation is frequently made between resilience developed among children exposed to aversive life conditions, and adult resilience to trauma. Developmental psychologists use the term resilience to denote genetic (e.g., dispositional), personal, and environmental protective psychological factors that nurture favourable outcomes among children growing up in aversive conditions (Luthar, Cicchetti, & Becker, 2000; Masten, 2001; Rutter, 1999; Werner, 1995). Adult resilience bears some semblance to the concept as described in the developmental literature (i.e., capacity to thrive when exposed to an unfavourable event), but differs in that, unlike the children referenced in the developmental literature who endure highly

unfavourable living conditions, the resilient adult, as intended here, comes from otherwise normal living conditions, but is exposed to a highly aversive event.

Until recently, few theorists have hypothesized about whether resilient individuals respond in the same manner to trauma as individuals who show subthreshold symptoms in the immediate aftermath of trauma but do not go on to develop PTSD (Bonanno, 2004). Although research has not traditionally differentiated subgroups of individuals who have been exposed to trauma but do not show any PTSD symptoms (King, Foy, Keane, & Fairbank, 1999; McFarlane & Yehuda, 1996), failure to do so assumes that resilient and recovering individuals cope in similar ways (Bonanno, 2004). According to Bonanno, recovery relates to a trajectory in which individuals experience a brief period of subthreshold symptoms, and then return to pre-trauma functioning. In contrast, resilient individuals may experience mild upsets in daily functioning for a brief period early after the trauma, but show an incredible capacity to maintain a healthy and stable equilibrium across time, including the capacity to enjoy positive emotions (Bonanno et al., 2001).

Trauma researchers have often depicted individuals who show resiliency after trauma as having rare emotional strength. For instance, Tucker et al. (2002) and North et al. (2002) describe the body handlers and firefighters of the Oklahoma City bombing as having unexpected resilience. Notably, however, the consistent finding that the majority of individuals exposed to trauma do not develop PTSD lends

support to the notion that resilience may be more common than otherwise assumed. This was evidenced in a meta-analysis conducted by Ozer et al. (2003). These researchers concluded that: "Roughly 50% - 60% of the U.S. population is exposed to traumatic stress but only 5% - 10% develop PTSD" (p.54). Results from a recent population-based survey (Galea et al., 2002) conducted one month after 9/11 arrived at a similar conclusion. Researchers estimated that 7.5% and 17.4% of the residents would meet criteria for PTSD and subclinical PTSD symptoms, respectively. However, PTSD prevalence rates decreased to 1.7% and 0.6% at four and six months respectively; whereas, rates for subclinical PTSD decreased to 4.0% and 4.7% during this same period. Further, evidence among the majority (79%) of hospitalized motor vehicle accident victims (Bryant, Harvey, Guthrie, & Moulds, 2000), the majority (78.2%) exposed to the 1992 Los Angeles riots (Hanson, Kilpatrick, Freedy, & Saunders, 1995), the majority (62.5%) of Gulf War veterans (Sutker, Davis, Uddo, & Ditta, 1995), and over 40% of residents of the 9/11 survey (Galea et al., 2002), suggests that few exposed individuals show PTSD symptoms, and that resilience is common.

Some researchers (e.g., McFarlane & Yehuda, 1996; Regehr & Marziali, 1999; Rutter, 1999) argue that resilience may play an important role in explaining why some individuals have the capacity to utilize positive resources, execute effective responses with apparent ease, and thrive when faced with trauma, whereas others go on to develop PTSD symptoms. The fact that some individuals appear to be

resilient to the effects of serious trauma has bedevilled theorists. Certainly, empirical research in the resilience domain has the potential to inform a better understanding of what works for individuals who successfully overcome trauma (Ai & Park, 2005). For the most part, trauma research has given scant attention to the potential influence of resilience on health outcomes, except when referring to the absence of symptoms (North, Tivis, McMillen, Pfefferbaum, Spitznagel, & Cox, 2002; Tucker et al., 2002).

The central defining features of resilience and SOC capture the overall quality of the individual's behaviour, and offer an explanatory and organizing framework that prompts researchers to think about why some individuals who are exposed to trauma go on to develop psychological dysfunction and PTSD symptoms, whereas others exposed to the same trauma appear unscathed and grow after experiencing trauma. This is in line with the literature that has linked personal growth to enhanced social support satisfaction, enhanced self-concept, increased coping ability (e.g., acceptance coping), positive reinterpretation of the event, personality (e.g., temperament, traits), and severe life events and trauma (Hobfoll & Lilly, 1993; Moran & Colless, 1995; Park, Cohen, & Murch, 1996; Schaefer & Moos, 1992; Schussler, 1992; Tedeschi, Calhoun, & Gross, 1993).

Given that emergency personnel, including nurses, may expect to be faced with repeated work-related traumas, it is reasonable to assume that SIRs are implicated (directly or indirectly) in the complex pathways by which work traumas

give rise to PTSD symptoms for some individuals, but not for others. This proposition is in line with studies that have found that the majority of emergency personnel reported positive outcomes following rescue operations (Hytten & Hasle, 1989; Moran & Colless, 1995). Contributions in this area are presented next.

Emergency Professionals

According to Bowman (1997), emergency personnel and helping professionals are exposed to the trauma of others due to the very nature of their work. Emergency personnel are exposed to the traumas of the victims on-scene and to incidents involving threats to their own safety, whereas helping professionals may be exposed off-scene by listening to victims' traumatic experiences. Although both of these groups provide for interesting areas of study, the former group has attracted recent empirical interest, arguably because one wonders what drives these individuals to be in a profession where repeated exposure to human suffering and maimed bodies is part of a day's work.

Empirical Research among Emergency Professionals

Recently, empirical interest on the work-related trauma experiences of emergency personnel has proliferated. Wagner, Heinrichs, and Ehlert (1998) reported a PTSD prevalence rate of 18.2% among experienced firefighters exposed to regular occupational missions. In a landmark study among volunteer firefighters exposed to an Australian bushfire (McFarlane, 2000) PTSD prevalence rates of 32%, 27%, and 30% were reported at 4, 11, and 29 months. In a similar vein, studies

among nurses, and police officers, have reported high incident rates and support the view that professionals whose work requires them to be exposed to traumatic events are at risk of developing PTSD. Nonetheless, findings are not straightforward (Carlier et al., 1997; Corneil & Kirwan, 1994; Gersons & Carlier, 1995; Robinson et al., 1997).

For instance, in a longitudinal study of the Piper Alpha oil rig disaster (Alexander, 1993), none of the nurses (tasked with providing medical assistance to the burn victims) nor police officers (tasked with recovering bodies) reported long-term symptoms. However, nurses reported difficulty unwinding, feeling guilty for not doing enough, and negative attitudes toward patients. Police officers' anxiety scores fell below pre-event baseline levels at three months and most reported that they were proud to be part of the team. Alexander suggests that results may have been due to role differences; police officers may have been treated as rescuers, whereas nurses may have been targeted by burn victims who were having difficulty coping with injuries.

In contrast to the Alexander (1993) study, a study among firefighters exposed to an Australian bushfire (McFarlane, 1988) found that 30% had trauma symptoms four months after the fire. According to McFarlane, almost 20% of the firefighters could be classified as undergoing delayed onset of post-trauma symptoms, and some who reported such a pattern of symptoms could not recall their acute symptoms. The overall pattern suggested significant intrusion symptoms at onset; over time, however, disordered arousal was the

most prominent clinical feature.

Results from other studies lend support to the notion that emergency personnel are at high risk of developing PTSD symptoms (Bryant & Harvey, 1995, 1996b; Carlier et al., 1997; Corneil, 1993; Corneil & Kirwan, 1994; Hodgins et al., 2001; Lavack-Pambrun, 2002). Comparisons across studies are hazardous, however, due to the use of different methodological approaches and inconsistent measurement instruments. Clearly, exposure to workplace trauma is a critical issue facing front line service industries, and one that merits considerable empirical attention.

Studies have reported high incident and prevalence rates of violence in healthcare environments (e.g., Arnetz et al., 1996; Carroll, 1999; Duncan et al., 2001; Federation des Infirmieres du Quebec, 1995; Kelloway et al., 2000; Liss & McCaskell, 1994; Poster, 1996; Whittington, Shuttleworth, & Hill, 1996). Given that nursing represents the largest segment of the healthcare system (Elliott, 1997; McKoy & Smith, 2001), and that nurses are assaulted at work more often than other workers (Bureau of Labor Statistics, 1994; Hewitt & Levin, 1997), it is reasonable to assume that nurses are at high risk of experiencing personal consequences following workplace violence. Many researchers (e.g., Barling et al., 2000; Duncan et al., 2001; McKoy & Smith, 2001) argue that practice environments may implicitly or explicitly condone violence against nurses, placing them at higher risk of experiencing detrimental outcomes.

Nursing Practice Environments

With the advent of managed care, and the rapid shift from hospital to home healthcare, nurses have had to provide care to sicker patients and face increased challenges (O'Brien-Pallas & Baumann, 1992). As a result of these organizational realities, studies have investigated the impact of nurses' practice environments on nurses' well-being (Estabrooks, Midodzi, Cummings, Ricker, & Giovannetti, 2005; Hesketh et al., 2002).

According to Estabrooks (2003), it is vital that research investigate the impact of the practice environment on both patient and nurse outcomes. Estabrooks et al. maintain that "the successful growth of the clinical environment depends on the transfer of research knowledge into practice" (2004, p. 301), and that this theory-guided transfer of knowledge will benefit patients, nurses, and system outcomes (Estabrooks, 1999a, 1999b, 1999c, 1999d; Estabrooks, Thompson, Lovely, & Hofmeyer, 2006). Sadly, a review of the literature (Ehrenberg & Estabrooks, 2004; Estabrooks, 2003, 2004; Estabrooks, Midodzi et al., 2005; Estabrooks, Rutakumwa et al., 2005; O'Neill & Duffey, 2000) suggests that nurses do not often base their clinical practice decisions on research journals. In a study conducted by Estabrooks and colleagues (2005), nurses were found to rely more heavily on experience and social interactions with nurse peers as sources of practice knowledge than on other sources (e.g., research journals). Support for this result was found in other studies (e.g.,

Estabrooks, 1998; Gerrish & Clayton, 2004). The transfer of research knowledge into practice is relevant to the study of PTSD because nurses may not access services made available by their employer for various reasons.

Numerous studies have investigated the relationship between individual, organizational, and contextual determinants and research utilization; however, results in review studies are mixed (Profetto-McGrath, Hesketh, Lang, & Estabrooks, 2003). Further, research agendas have generally not incorporated mixed levels of analysis of individual, unit, and work environment (Estabrooks, Floyd, Scott-Findlay, O'Leary, & Gushta, 2003). According to some researchers (e.g., Estabrooks, Floyd et al., 2003; Estabrooks, Wallin, & Milner, 2003; Estabrooks, Winther, & Katz, 2002; O'Brien-Pallas, Murray, Pringle, & Lemieux-Charles, 1990) failure to attend to these levels, and to the interactions between them, undermines research utilization.

In order to advance research on clinical practice, this study considered the relationship between individual nurses and the management/practice environment. Specifically, the relationship between individual factors (e.g., stable internal resources) and organizational factors (e.g., workplace support and safety concerns) was addressed. A discussion on workplace support and safety will follow in a later section.

Empirical Research among Nurses

According to many researchers, the practice environment may contribute to the reduced quality of nurses' work

experiences, and ultimately threaten their well-being (Baumann et al., 2001a; O'Brien-Pallas, Baumann, & Villeneuve, 1994). Studies have investigated factors that impact on the quality of nurses' work life, such as autonomy and job satisfaction (Attridge, 1996; Blegen, 1993), areas related to interpersonal interactions with patients and enhancing relational care (McGilton et al., 2003), and various other areas impacting on nurses' well-being, such as work measurement, increased workload, measurement of and satisfaction with workload, measurement systems, long hours, low professional status, difficult professional responsibilities, unsafe work environments, and staff retention problems and shortages (Baumann et al., 2001a; Cummings, Hayduk, & Estabrooks, 2006; Estabrooks, Tourangeau et al., 2002; Greenglass & Burke, 2001; Hernandez & O'Brien-Pallas, 1996; McNiven, O'Brien-Pallas, & Hodnett, 1993; O'Brien-Pallas et al., 1998a; O'Brien-Pallas, Baumann, Donner et al., 1998; O'Brien-Pallas & Cockerill, 1990; O'Brien-Pallas et al., 1999; O'Brien-Pallas, Irvine, Peereboom, & Murray, 1997; O'Brien-Pallas et al., 1990). Nurses also report role ambiguity, lack of trust and commitment to the organization, lack of support and leadership, job dissatisfaction, lowered morale, and emotional exhaustion (Baumann et al., 2001b; Blyth, Baumann, & Giovannetti, 2001; Denton, Zeytinoglu, Davies, & Lian, 2002; O'Brien-Pallas, 2002; O'Brien-Pallas & Baumann, 1997; O'Brien-Pallas et al., 2002). Clearly, the importance of addressing nurses' work life has been increasingly

recognized as a critical area of study.

O'Brien-Pallas et al. (1997) criticize traditional methods for measuring nursing work as unidimensional, unreliable, and non-comparable, and argue for a model that captures the relationships among factors that influence variability of nursing work. According to O'Brien-Pallas (2002), it is critical that researchers, policy planners, and decision makers address nurses' work concerns, within a health human resource planning (HHRP) framework. Sadly, many decisions regarding the deployment and use of nursing personnel (forecasting for health human resources) do not consider the implications for clients and nurses (O'Brien-Pallas, 2002; O'Brien-Pallas, Baumann et al., 2001), nor do they consider that management decisions regarding HHRP influence nurse outcomes (O'Brien-Pallas & Baumann, 1997; O'Brien-Pallas, Baumann, Birch, & Tomblin-Murphy, 2000; O'Brien-Pallas et al., 1998a; O'Brien-Pallas et al., 1994; O'Brien-Pallas, Thomson, Alksnis, & Bruce, 2001). For instance, Peter et al. (2004) found that work environments were overwhelmingly characterized as oppressive, exploitive, and physically and interpersonally violent.

Workplace Violence

The majority of nonfatal incidents occur in the health service industry (National Institute for Occupational Safety and Health, 1996, 1997; Stultz, 1993). According to the Bureau of Labour Statistics (1994), healthcare providers are 16 times at greater risk for being assaulted in the workplace than any other worker. Given that nurses make up

the largest segment of the healthcare industry (McKoy & Smith, 2001), it is not surprising that studies have consistently found that nurses experience high incidences of workplace violence (Corneil & Kirwan, 1994; Hesketh et al., 2002; Poster, 1996; Registered Nurses' Association of Ontario (RNAO), 1992; Simonowitz et al., 1997; Statistics Canada et al., 2006).

Obtaining exact prevalence estimates for nurses exposed to workplace violence has been complicated, due to the use of varied definitions (physical versus non-physical events), methodologies (i.e., number of participants who experience violence compared to the number of violent incidents), and questionnaires across studies. For instance, career prevalence rates of 80% for workplace violence have been reported (Federation des Infirmieres du Quebec, 1995), and career prevalence rates for types of violence (29% for violence, 35% for threats of violence) have been reported (Arnetz et al., 1996). Other studies report incidence rates over different time frames, such as in the last five shifts worked (Duncan et al., 2001; Gray, 1994; Hesketh et al., 2002), and over a 1-year period (Carroll, 1999; Liss & McCaskell, 1994; Whittington et al., 1996).

Traditionally, workplace violence was defined as those incidences pertaining to physical acts, however, there is a trend toward including the whole gamut of possible unacceptable violent behaviours, such as verbal or sexual harassment (Canadian Nurses Association, 1996; Hewitt & Levin, 1997). The more familiar definition of violence is

exemplified by Harper-Jacques and Reimer (1992): "a physical act of force intended to cause harm to a person or an object and to convey the message that the perpetrator's point of view is correct and not the victim's" (p. 312). Other definitions of violence capture the subjective perceptual experience and abuses of authority, and do not require physical contact or injury. For instance, Elliott (1997) views violence as particular to the subjective perceptual experience, which varies in degrees of intensity (i.e., from verbal abuse to murder). Foege, Rosenberg, and Mercy (1995) relate violence to power, "violence is the threatened or actual use of physical force or power against another person, against oneself, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, or deprivation" (p. 2).

Definitions of workplace violence have also been plagued by inconsistencies. Elliott (1997) defines workplace violence as "any incident in which employers, self-employed people, and employees are abused, threatened, or assaulted in circumstances arising out of, or in the course of, the work undertaken" (p. 40). Similarly, Gates (1995) relates violence to "violent acts, including physical assaults and threats of assault directed towards persons at work or on duty owing to harassment, threats, and physical assaults" (p. 540). Others (e.g., Barling et al., 2000; Fitzgerald, Drasgow, Hulin, Gelfand, & Magley, 1997) include sexual harassment as a form of workplace violence.

According to Smith-Pittman and McKoy (1999), studies on the incidence and prevalence of workplace violence that restrict the definition to physical acts, do not capture the extent of violence in the workplace. For instance, Bensimon (1997) reported that out of the 25 million people in the United States that experienced workplace violence, approximately two million are for physical acts, approximately six million pertain to threats to harm, and the majority, 16 million, are related to non-physical incidences such as unwelcome comments and verbal abuse. According to Hesketh et al. (2002), verbal abuse may be an important marker of the extent that more violent acts are tolerated in the practice environment. Many (e.g., Campbell & Landenburger, 1996; Smith-Pittman & McKoy, 1999) argue that the best definition of workplace violence for nursing is one that captures the scope of the problem and the extent of its effects on nurses' well-being.

Clearly, definitions of violence that are too narrow give rise to conservative estimates of rates of violence. Another explanation for why statistics do not show the magnitude of the problem is because many incidents go unreported. Reasons for underreporting workplace violence include fear of repercussions if legal action against an assaultive client is pursued, the perpetrators are psychiatric patients who have a diminished capacity to comprehend or control their aggressive behaviours, a tolerance for workplace violence in practice environments, the perception that "it's part of the job", dissuasive

comments from co-workers and managers, lack of co-worker and manager support, perceptions of incompetence for being unable to manage a combative client, and fear that some events may be perceived by managers as the result of negligence (Appleton, 1994; Bureau of Labor Statistics, 1994; Duncan, Estabrooks, & Reimer, 2000; Duncan et al., 2001; Elliott, 1997; Henry & Henry, 1997; Lanza, 1992; Najera & Heavey, 1997; Poster, 1996; Sanchez-Gallegos & Viens, 1995; Sheridan, White, & Fairchild, 1992; Smith-Pittman & McKoy, 1999).

Poster (1996) conducted a multinational study to explore psychiatric nurses' (N = 999) views on pursuing legal action against patients. Although 58% acknowledged having the right to pursue legal action against a patient who assaults, 30% did not respond to this question and 8% feared that they would lose their jobs if they took legal action against a combative patient. Similarly, a recent large scale survey (Duncan et al., 2001) found that among the 8,780 registered nurses studied, 46% had experienced one or more serious workplace events *'during the past 5 shifts'* but that 70% of them did not report the incident. According to the findings of Hesketh et al. (2002), nurses were more likely not to report workplace violence if the perpetrator was a co-worker, and this was especially the case for verbal abuse and verbal sexual harassment.

Although there has been a surge of studies on the high prevalence and incidence rates of workplace violence, investigation of the organizational and individual factors

that affect nurses' trauma experiences are relatively new.

Effects of Workplace Violence among Nurses

During the last few years, there has been a surge of government discussion papers addressing the effects of the health service industry on nurses' well-being (Human Resources Development Canada, 2003; Romanow Commission, 2002). Studies on the influence of the practice environment on workplace violence show that organizational characteristics (e.g., low staffing, budgetary restrictions, early discharge of psychiatric patients due to budget cuts, decrease in community resources for psychiatric patients due to budget cuts) increase the likelihood of workplace violence against nurses. Patient characteristics (e.g., history of violence, substance abusing, chronic mental illness) have also been linked with workplace violence (Elliott, 1997; Lewis & Dehn, 1999; McKoy & Smith, 2001).

Workplace violence has also been linked with organizational outcomes, such as low job satisfaction, absenteeism, decreased commitment to the organization, low job performance, violence prevention measures, and turnover intentions (Barling, 1996; Barling et al., 2000; Duncan et al., 2001; Hesketh et al., 2002; Manderino & Berkey, 1997; Registered Nurses' Association of Ontario (RNAO), 1992). In terms of personal consequences, studies have linked workplace violence to poor relationships among staff; depression, sleep problems, fear of recurrence, psychosomatic complaints, PTSD symptoms, and high PTSD prevalence rates (Barling, 1996; Barling et al., 2000;

Cooper, Saxe-Braithwaite, & Anthony, 1996; Corneil & Kirwan, 1994; Duncan et al., 2001; Lavack-Pambrun, 2002; Powell, 1996; Rogers & Kelloway, 1997; Schat & Kelloway, 2000).

Clearly, violence in the nursing profession is increasing (Anderson, 2002; Elliott, 1997; Littrell & Littrell, 1998). In particular, the incidence of workplace violence is growing at a fast rate in home healthcare (Kelloway et al., 2000). This is due, in large part, to the advent of managed care, which has made home healthcare the fastest growing segment of the healthcare industry (Freeman, 1995; O'Brien-Pallas, Baumann, & Lochhaas-Gerlach, 1998; O'Brien-Pallas, Doran et al., 2001; O'Brien-Pallas et al., 2002). As a result of the rapid decrease in hospital stays, the chronically and mentally ill, violent, and substance abuse patients are discharged from hospitals to their homes earlier (Brennan & Cochran, 1998). These changes have left nurses who work in clients' homes more vulnerable to violence with no, or very limited, safety back-up (Nader, 1996; Reinhardt, 1996).

Home Healthcare

Attempts to define the provision of nursing care in the client's home have been complicated by the use of many different terms, such as 'visiting nurse', 'public health nurse', 'healthcare worker', 'home care nurse', or simply 'nurse who provides care in clients' homes'. The terms vary as to their historical context and trends spurred by increasing healthcare costs. For instance, the term 'visiting nurse' captures the benevolent nature of the

nurse's role during the mid-1800's, which was undertaken by religious orders. The nurse would visit the homes of the poor, with services paid for by charities and social welfare agencies (Brennan & Cochran, 1998; Rodgers, 2000). In 1893, Lillian Wald coined the term public health nurse to reflect the nurse's role, which consisted of providing both home health to the sick and prevention services related to widespread infection in the community during this period (Grindel-Waggoner, 1999; Kirkis, 1993). In 1909, the Metropolitan Life Insurance Company began offering home care benefits to its elderly policy holders in the United States and Canada, and nurses were interchangeably referred to as public health nurses or healthcare workers (Horn & Horn, 1993; McClain, 1993; McKoy & Smith, 2001).

Since the influence of managed care in the mid-1900's, a marked distinction grew between nurses who provided a service in the community and those who provided nursing care in the client's home (Schoen & Koenig, 1997). Public health nursing focuses on health promotion and illness prevention, and integrates learning principles from nursing, social work, and public health sciences (Brennan & Cochran, 1998). In contrast, the modern nurse who provides care to clients in their homes is one who offers services to acute and chronically ill individuals of all ages, and integrates community health nursing principles that focus on the promotion and maintenance of health status (Humphrey & Milone-Nuzzo, 1996). Today, these nurses provide medical assistance to their clients, and education to both the

clients and their family members on how to manage such things as ambulatory dialysis, ventilators, and continuous infusion of medications. Further, many agencies who offer services to clients in their homes have also developed specialized programs, such as crisis intervention for psychiatric patients, cardiac recovery, and occupational and speech therapies (Schoen & Koenig, 1997). For the purpose of this study, the reference 'nurses who work in clients' homes' is used to represent both the nurses who provide medical care to clients and those who provide mental health services to psychiatric clients.

Although the increasing incidence of workplace traumas in healthcare institutions has been reported in the literature for over a decade (Bureau of Labor Statistics, 1994; Littrell & Littrell, 1998; Mason, 1993; Vincent & White, 1994), concern about the increasing incidence of such events in home healthcare has only recently been documented (Barling et al., 2000; Calabro, Mackey, & Williams, 2002; Carroll & Goldsmith, 1999; Findorff-Dennis, McGovern, Bull, & Hung, 1999; Henry & Henry, 1997; Hunter, 1997; Kelloway et al., 2000; Rodgers, 2000; Williams, 1996). Given that home healthcare represents the largest segment of the healthcare industry, it is reasonable to assume that the incidence of workplace violence and the resultant personal consequences (e.g., PTSD) will be higher for nurses who work in clients' homes than for nurses who work in traditional healthcare institutions (Fitzwater & Gates, 2000).

Empirical Studies Among Nurses Working In Clients' Homes. Workplace violence in the home healthcare industry is increasing. In a survey conducted by Schulte et al. (1998), over a third of the nurses studied (n = 364) reported experiencing verbal or physical violent assaults while providing care to clients in their homes. Other studies have reported similar results (e.g., Carroll & Goldsmith, 1999; Fitzwater & Gates, 2000; Kendra, 1996).

Fitzwater and Gates (2000) investigated the perception of violent assaults among four home care nurses' focus groups and also two nursing manager focus groups. These groups were found to have similar perceptions of the seriousness and frequency of violent incidents. Similar results on perception of seriousness were reported in Kendra's (1996) large scale survey among 93 home healthcare managers and 705 nurses who provide care in clients' homes. However, in contrast to the Fitzwater and Gates (2000) study, Kendra (1996) found that nurses' perception of frequency of violent events was higher than what the managers perceived them to experience. This is not surprising given that nurses tend to under-report workplace violence (Duncan et al., 2001).

Although research in home healthcare is in its infancy, recent studies have linked workplace violence to personal and organizational consequences among this nursing group (e.g., Barling et al., 2000; Kendra, 1996; Schulte et al., 1998). Barling et al. (2000) investigated the personal and organizational outcomes of workplace violence and sexual

harassment among a sample of health care professions who work in clients' homes. Results showed that fear of recurrence mediated the associations of these types of events with personal and organizational consequences. Fear of a recurrence of these incidences was associated with consequences such as perceptions of injustice, lower commitment to the organization, withdrawal intentions, greater neglect, and cognitive difficulties. According to Barling et al. (2000), nurses who work alone in clients' homes have to rely on their own resources because they do not have the same protection afforded to nurses working in other types of practice environments. As a result, they have an increased sense of vulnerability when continuing to provide care for clients (i.e., fear of recurrence), which is exacerbated by perceptions of unfairness when their safety concerns are not addressed and they are not provided with appropriate assistance. Empirical support for these findings has been reported by Rogers and Kelloway (1997).

Safety and Support in Practice Environments

Safety Concerns. There is growing concern about the incidence of workplace violence experienced by nurses (Carroll & Goldsmith, 1999; Durkin & Wilson, 1998; Najera & Heavey, 1997; Sanchez-Gallegos & Viens, 1995). This concern reflects the position taken by the National Institute for Occupational Safety and Health Association (NIOSHA; 1997), the Joint Commission on Accreditation of Healthcare Organizations (JCAHO; 1995), and other sources (e.g., Braverman, 1999; Gates, 1995; Umiker, 1997) that maintain

that employers are held legally accountable for providing a safe work environment, and are negligent if they do not take corrective action to address workplace violence.

Although the implementation of safety programs is relatively new to home healthcare, specific program components that have been documented include: (a) Zero-tolerance for violence policy (Henry & Henry, 1997; Smith-Pittman & McKoy, 1999),(b) implementation of a violence prevention policy (Hunter, 1997; Najera & Heavey, 1997), (c) training and evaluation of violence prevention procedures (Doyle & Klein, 1998; Elliott, 1997; Hunter, 1997; Najera & Heavey, 1997; Sitzman, 2001; Vandergaer & Sud, 1997), (d) violence assessment strategies during the previsit, home visit, and the continuing visits phases (Fitzwater & Gates, 2000; Hunter, 1997; Nadwairski, 1992), (e) escort and security programs (Nadwairski, 1992), (f) self-defense training (Brown-Morrison, 1995; Sitzman, 2001), (g) incident reporting protocol (Benson-Flynn, 2001; Fitzwater & Gates, 2000), and (h) implementation of counselling services such as post-incident debriefings (Lewis & Dehn, 1999).

Failure to implement safety prevention programs may have organizational and personal consequences. In terms of organizational consequences, studies have linked workplace violence to poor employee morale, decreased productivity, poor job performance, and low commitment (Barling et al., 2000; Braverman, 1999; Lanza, 1992; Meeuwsen & Pool, 1996; Murray & Synder, 1999; Rogers & Kelloway, 1997; Schat & Kelloway, 2000); withdrawal behaviours such as increased

absenteeism, increase in sick-leave, and intention to leave (Barling et al., 2000; Henry & Henry, 1997); workers' compensation claims, litigation, and work-safety concerns (Henry & Henry, 1997; Jossi, 1999).

In terms of personal consequences, studies have found that nurses who have experienced workplace violence while providing care in clients' homes may develop anxiety, depression, PTSD symptoms, sleep problems, psychosomatic problems, fear of recurrence, fear of being unsupported by supervisors, a negative self-perception, and a diminished sense of competence (Barling, 1996; Barling et al., 2000; Findorff-Dennis et al., 1999; Palsson, Isovaara, & Norberg, 1995; Williams, 1996). Support for these findings has been found in studies among nurses from other practice environments (e.g., Corneil & Kirwan, 1994; Registered Nurses' Association of Ontario (RNAO), 1992).

Therefore, from a humanitarian and organizational perspective, researchers in the area have suggested that it is incumbent that home healthcare organizations address the incidence of workplace violence (Canavan, 1996; Smith-Pittman & McKoy, 1999). Given the high incident and prevalence rates of workplace violence and the risks of developing personal consequences, such as PTSD symptoms (Barling et al., 2000; Carroll, 1999; Carroll & Goldsmith, 1999; Duncan et al., 2001; Poster, 1996; Whittington et al., 1996), it is not surprising that there has been an increase in surveys generated by nursing associations and unions that address the problem of workplace violence and that urge

nursing organizations to implement policies and safety procedures that address workplace violence (Canadian Nurses Association, 1996; Federation des Infirmieres du Quebec, 1995; Registered Nurses' Association of Ontario (RNAO), 1992; Statistics Canada et al., 2006).

Workplace Support. Previous research has identified the following types of support that nurses value and that are relevant to their well-being: co-worker support (Corrigan et al., 1994; Fong, 1993; Schaufeli & Buunk, 1996); manager/supervisor support (Hatcher & Tranmer, 1997); support from physicians (Lacey, 1996); supportive nursing research infrastructure (Estabrooks, Midodzi et al., 2005; Rizzuto, Bostrom, Newton-Suter, & Chenitz, 1994); and administrative support (Nelson, 1995). The nursing literature is replete with findings lending support to the importance of workplace support. For instance, Estabrooks et al. (2005) found that social interactions with peers was an important source of practice knowledge. "Nurses rely more on social interactions with their peers because of the unique support they get from this group, support that is not usually available from other sources" (p. 464). Similarly, Close et al. (1994) maintain that managers and supervisors who are genuinely supportive and concerned for the well-being of nurses foster an organizational climate in which nurses feel more comfortable both with reporting workplace violence and seeking support. Estabrooks (2004) maintains that this is as important as the preparatory education provided. According to this view, manager support, praise

for a job well done, and having management address safety concerns is vital to the well-being of nurses and the establishment and maintenance of quality nursing practice (Barling et al., 2000; Estabrooks, Midodzi et al., 2005). Barling et al. (2000) maintain that management support is especially important for nurses who work alone in clients' homes because they do not have the same protection afforded to nurses who work in hospital practice environments.

Two stances have been adopted in the study of social support. The first approach maintains that social support buffers the negative effects of stress on psychological dysfunction (Roy & Steptoe, 1994). The second approach claims that the apparent buffering effect of support may be confounded with personality or prior mental health.

Nursing research that has focused on the buffering or moderating effects of social support on psychological dysfunction has linked social support to fear of a recurrence of workplace violence, fear reactions, safety concerns, appraisal of occupational stress, mental health outcomes, health complaints, and risk of developing PTSD symptoms (Barling et al., 2000; Corneil & Kirwan, 1994; De Jonge, Janssen, & Van Breukelen, 1996; Fitzwater & Gates, 2000; Kendra, 1996; Leiter, 1993; Registered Nurses' Association of Ontario (RNAO), 1992; Schaufeli & Buunk, 1996; Schaufeli, van Dierendonck, & van Gorp, 1996; Statistics Canada et al., 2006). In a study conducted by Barling et al. (2000) among in-home health care providers, personal and organizational outcomes were influenced by

perceptions of fairness regarding the manner in which safety concerns were dealt with, and whether appropriate assistance (i.e., debriefing) was available following workplace trauma. Agreement on the buffering effects of support was also found among other emergency groups (Adams-Roy & Barling, 1998; Beaton, Murphy, Pike, & Corneil, 1997; Rogers & Kelloway, 1997; Roy & Steptoe, 1994; Schat & Kelloway, 2000).

The second line of investigation claims that the buffering effects of social support are confounded with personality and prior mental health (Bolger & Eckenrode, 1991; Thoits, 1982). Although social support has been operationalized in structural terms (i.e., number of social contacts, frequency of contacts) and functional terms (i.e., perceived social supports), research in this area has focused on the buffering effects of perceived support.

According to Bolger and Eckenrode (1991), if the effects of social support are spurious reflections of personality three conditions must be met: (a) Personality is related to perceived support, (b) personality modifies the negative effects of stress on psychological functioning, and (c) when personality is statistically controlled, the effects of perceived support on psychological dysfunction disappear. These researchers investigated this notion in a prospective study among a sample of students preparing for a medical school examination. Results showed that when personality (extraversion/neuroticism) was statistically controlled there were no buffering effects of social support. There is evidence that the sense of coherence (SOC)

construct meets the conditions posited by Bolger and Eckenrode (1991). SOC is associated with perceived support (Antonovsky, 1993; Wolff & Ratner, 1999), it modifies the negative effects of trauma situations on psychological functioning (Frommberger et al., 1999; Langius et al., 1992), and when SOC is statistically controlled, one study did not find that perceived support had a stress-buffering effect on psychological functioning (Hart, Hittner, & Paras, 1991). This view assumes that individuals with strong SOC likely perceive their supports as adequate, whereas those with weak SOC would perceive their supports as inadequate.

Wolff and Ratner (1999) investigated the effects of social support, stress, and traumatic events on SOC. These researchers used the data (n = 14,626) collected from the 1994 National Population Survey of Canada (Statistics Canada, 1995) to investigate the relationship between SOC and several variables including social support and traumatic events. Findings showed that perceived social support was positively related to SOC and that childhood trauma was negatively related to SOC. Traumatic events experienced during adulthood only accounted for 1% of the cumulative explained variance ($B = -0.11$, $p < .001$). These researchers argue that the residual effects of traumatic events that were experienced in childhood may be minimized by having social support, but that SOC is a major determinant in the maintenance of health. This is in line with Antonovsky's (1993) theory that maintains that the individual's SOC is relatively stable by age 30 and that it is the strength of

the SOC, rather than exposure per se, that determines whether the outcome of trauma exposure will be detrimental.

Although workplace support has been linked with social exchange relationships (i.e., how much nurses invest in the organization and how much support they receive in return), which in turn influences mental health outcomes, this influence disappears when personality is studied (Rousseau & Parkes, 1993; Schaufeli, 1995; Schaufeli et al., 1996). For instance, Van Yperen's, Buunk, and Schaufeli (1992) found that for nurses with a strong communal orientation (defined as personality predisposition) reciprocity did not matter, whereas for nurses with low levels of communal orientation a lack of reciprocity was associated with psychological stress symptoms. Support for the moderating effects of personality was also found in a study among students preparing for a medical school entrance exam (Bolger & Eckenrode, 1991). The empirical evidence indicating that the effects of supports may be confounded with personality presents a serious threat to the validity of research in this domain. This area warrants further investigation.

Summary of the Empirical PTSD/Trauma Literature

Drawing from the multifaceted contributions discussed thus far, the seemingly disparate streams of thought converge that make it possible for us to draw a general picture representing advancements in the study of trauma today. Traditionally, trauma research has investigated the impact of Criterion A1, the qualifying event, on PTSD symptomatology, with studies exploring the effects of

previous exposures (Breslau et al., 1999; Brunet et al., 2001; Hodgins et al., 2001), type of trauma (Foa & Rothbaum, 1997; Gilboa-Schectman & Foa, 2001) and trauma severity. Due to the consistent finding that not all individuals exposed to the same trauma develop PTSD symptoms, research has investigated individual risk factors, including personality vulnerability characteristics. Although work psychology and health psychology have extensively studied the effects of stable internal resources (SIRs) on health outcomes, this line of investigation is relatively new to trauma research.

Research among emergency personnel has focused on investigating the impact of exposure(s) and correlates of PTSD. Findings have yielded mixed results, with some studies reporting no association between the number or severity of work-related traumas and PTSD symptoms (Beaton et al., 1999), and other studies (e.g., Corneil, 1993; Hodgins et al., 2001; Robinson et al., 1997; Wagner et al., 1998) reporting an association. Some explanations for the inconsistencies have been proposed. One position maintains that psychological dysfunction and the development of PTSD symptoms result from an interaction between Criterion A1 events, trauma intensity, and individual characteristics, such as neuroticism and psychiatric history (Carlier et al., 1997; Lauterbach & Vrana, 2001; Lee et al., 1995; McFarlane, 1988). Research on personality factors among emergency personnel have yielded consistent results, with personality vulnerability being linked with detrimental outcomes and positive personality characteristics linked with adaptation.

Post-trauma support has also been implicated as an important factor in influencing the development of PTSD (Carlier et al., 1997; Weiss et al., 1995). This study attempts to reconcile different points of contention regarding the buffering effects of workplace support versus spurious effects of perceived workplace support by examining the impact of workplace support and personality on PTSD. Also of significant importance in the present study is a test of the relative impact of threat on PTSD compared to the impact of stable internal resources (SIRs) on PTSD.

Theorists and researchers have sadly given scant attention to the possibility that traditional methods of investigating trauma responses may not be appropriate for, or relevant to, emergency personnel, including nurses. Arguably, there are fundamental differences between trauma victims who are exposed to unexpected externally imposed trauma and emergency professionals who end up working in occupations in which exposure to trauma is expected. It is certainly possible that many individuals who go into nursing do not know what nursing work is all about. However, it is reasonable to assume that upon completion of formal training those who gravitate towards (and end up working in) areas where exposure to work-related traumas becomes part of a day's work represent a unique group of individuals. For instance, Grevin's (1996b) study among paramedics and paramedic students found that ego defenses were adaptive mechanisms for the stresses inherent in the profession. "It appears that a characteristic predisposition (in this case

the utilization of particular defensive strategies) may attract individuals to a profession that others would avoid" (p. 491). Trauma research has neglected to investigate those positive personality traits that may offer information about how the emergency professional copes when frequent exposures to the human suffering of others and threats to their own safety become part of a day's work.

Interestingly, lines of investigation among these groups also appear gender biased. The nursing profession is largely represented by women, whereas fire fighters, police officers and paramedics are largely represented by men. The nursing profession is actively involved in research and adopts a holistic/systemic approach, which considers the impact of the practice environment on patient and nurse outcomes (Estabrooks, Floyd et al., 2003; Estabrooks, Midodzi et al., 2005; Hesketh et al., 2002). Studies have emphasized the high incidence of workplace violence, fear of recurrence, the impact of organizational factors (e.g., lack of manager support, unsafe work environments) on patient outcomes and nurses' well-being, and the employer's responsibility to address violence and safety concerns (Barling et al., 2000; Calabro et al., 2002; Duncan et al., 2001; Hesketh et al., 2002; Registered Nurses' Association of Ontario (RNAO), 1992).

In contrast, the other emergency groups are not directly involved in conducting research. The unit of analysis is the individual member who works within an organizational culture where the reporting of psychological

symptoms, and the seeking of support, are discouraged. Studies focus on duty-related trauma, the relationship between coping skills and PTSD, and the development of other conditions, especially somatization, physical complaints, and alcohol problems (Bryant & Harvey, 1996a; Carlier et al., 1997; North, Tivis, McMillen, Pfefferbaum, Spitznagel, & Cox, 2002; Robinson et al., 1997). Further investigation of this line of investigation is warranted.

With the aim of advancing research, the present study considers the potential influence of aspects of the event (perception of threat, number of exposures), individual (stable internal resources (SIRs), perception of competence) and practice environment factors (workplace support, perception of safety in the nursing work context) on threat and PTSD. Two structural equation models were developed. The first model considered perception of threat (Criterion A2) as the only hypothesized correlate with PTSD (clinical impact). This model recognizes the pivotal role assigned to Criterion A in the etiology of PTSD as defined by the DSM-IV-TR (American Psychiatric Association, 2000). The impact of other variables (number of exposures, SIRs, competence, safety, work support) on PTSD could only happen as a result of an influence on the subjective perception of threat of the event. In the second model, a direct path from SIRs to PTSD and a direct path from workplace support to PTSD were added. This model takes into account evidence that the impact of trauma on the development of PTSD may be more a result of personality factors than that of any specific

event, particularly for individuals with repeated trauma exposures, such as is the case for nurses who work in clients' homes. Together, these two models will contribute to a better understanding of nurses' experiences with workplace violence.

The Present Study

Building on notable contributions, several themes have emerged that offer a better understanding of trauma responses. Theoretical and empirical efforts have primarily focused on areas such as the traumatic event (Criterion A1) as the variable of interest (Budd, Arvey, & Lawless, 1996; Fitzgerald et al., 1997), vulnerability/risk factors, and the development and maintenance of PTSD symptoms. However, there is now ample empirical evidence to suggest that threat is an important construct that warrants further empirical investigation (Scholtz, 2000), that perception of threat (Criterion A2) is an important predictor of PTSD (Sommer & Ehlert, 2004), and that the onset and maintenance of PTSD symptoms is not inevitable after trauma exposure (Shalev et al., 2004; Yehuda, 2004). This latter observation has led to a shift in theory from the predominant pathology orientation to a focus on stable internal personality resources (SIRs) (Ai & Park, 2005; Peterson & Seligman, 2003; Seligman & Csikszentmihalyi, 2000). Providing for the inclusion of SIRs, such as sense of coherence (SOC) and resilience, in trauma research paradigms will contribute to a better understanding of what has gone right for individuals who appear unscathed following exposure to trauma.

The general goal of this study was the investigation of the variability in PTSD symptoms. Other important goals of this study included: (a) The examination of the influence of perception of threat on PTSD, (b) the examination of important referents to threat, such as SIRs (e.g., SOC, resilience) and perceptions of competence, safety, and support, and (c) the investigation of the direct influences of SIRs and workplace support on PTSD. What will be presented next is a series of hypotheses culled from the discussion thus far, that highlight the central formulations of this study.

Hypotheses

1. Perception of threat would have a direct and positive relationship with PTSD symptoms.
2. Stable internal resources would have a direct negative relationship with PTSD, and workplace support would have a direct negative relationship with PTSD.
3. Competence would have a direct negative relationship with perception of threat, and safety would have a direct negative relationship with perception of threat.
4. Stable internal resources would have an effect on perception of threat, and number of exposures would have an effect on perception of threat.
5. Workplace support would be positively related to perception of safety.
6. Stable internal resources would emerge as a significant, although indirect, predictor of perception of threat through three paths: One path through

competence, another pathway through perception of safety, and an indirect path on safety through support.

Two hypotheses assessed the influences on PTSD. The first hypothesis maintained that subjective perception of threat (PTSD's Criterion A2) would have a direct and positive relationship with PTSD symptoms. The rationale for predicting this association comes from the evidence-based rhetoric that links the qualifying event (Criterion A) with PTSD symptoms (Hodgins et al., 2001; King et al., 1995; Lauterbach & Vrana, 2001; Lee et al., 1995; Schnyder et al., 2001). Criterion A involves two parts; A1 pertains to the objective aspects of trauma (type of event, number of exposures, trauma severity) and A2 refers to the individual's subjective emotional response to trauma (i.e., how threatening was the event). There is increasing evidence in the literature that PTSD symptoms develop only when Criterion A2 (subjective response to trauma) is met (Ballenger et al., 2000; Brewin, Andrews, & Rose, 2000; Gershon, Lin, & Li, 2002; Sommer & Ehlert, 2004). For instance, Sommer and Ehlert (2004) found that 78% of the mountain guides met Criterion A1 (the objective event) but only a small portion (3.5%) met Criterion A2 (subjective emotional response to the event). These researchers argue that the low proportion of guides who met Criterion A2 may partially explain the low current prevalence rate of PTSD (2.7%) for this group. Unfortunately, many studies either do not report on, nor investigate, the relationship between Criterion A2 and PTSD symptoms, making comparative work

across studies tenuous (e.g., Brunet et al., 2001; Hodgins et al., 2001). A further problem pertains to the use of different terms to describe the objective event (A1) and the subjective response to the event (A2), and how some variables (i.e., trauma severity; one aspect of A1) are operationalized in both objective and subjective terms, 'blurring' the distinction between criterion A1 and A2.

For instance, Yehuda (2002) refers to 'severity of the trauma' and 'intensity of the trauma response' interchangeably, and lists 'perception of threat' as being one of the factors predicting intensity of the trauma response. Lauterbach & Vrana (2001) operationalized 'trauma intensity' by including several measures: 'The severity of injuries', 'if they felt their life was in danger', 'how traumatic the event was at the time', and 'how traumatic the event is currently'. Brunet et al. (2001) measured trauma severity in descriptive terms (i.e., 'did the event involve interpersonal violence', 'were there any weapons involved', 'were you wounded as a result'). Scholtz (2000) conducted a concept analysis of threat (perception of the event as distressing), and maintained that many researchers study the objective event as the variable of interest when in fact the concept that is measured is threat. In line with Scholtz's recommendation, this study examined the association between perception of threat and PTSD. According to this position, individuals who perceive the event as highly threatening are at increased risk of developing PTSD symptoms. In this study, perception of threat is viewed as mediating the

relationship between trauma exposure and PTSD, rather than any 'objective' measure of event severity.

The second hypothesis assumed a direct negative relationship between stable internal resources (SIRs) and PTSD, and a direct negative relationship between workplace support and PTSD. Health psychology and work psychology have provided overwhelming evidence for the link between SIRs and mental health outcomes (e.g., Levert et al., 2000b; Park et al., 1996). Support for these findings have been reported in nursing and non-nursing research (Frommberger et al., 1999; Langius et al., 1992; Palsson et al., 1995; Wolff & Ratner, 1999). Further, evidence that SIRs have a direct negative relationship with PTSD, when controlling for exposure, was found in studies among mountain guides and Swedish battalion soldiers (Larsson et al., 2000; Sommer & Ehlert, 2004). Similar to these two groups, nurses are at high risk of being frequently exposed to trauma due to the very nature of their work (Duncan et al., 2001; Hesketh et al., 2002). The second part of this hypothesis proposed a direct influence of workplace support on PTSD. Although the role of social support has been extensively investigated in adjacent areas of study as buffering the effect of stressors on detrimental outcomes, trauma research has only recently started investigating the support buffering hypothesis (Beaton et al., 1997; Roy & Steptoe, 1994; Vilhjalmsson, 1993).

The third hypothesis assumed that competence would have a direct negative relationship with perception of threat, and that safety would have a direct negative relationship

with perception of threat. Perception of competency is related to the individual's generalized self-assessment about their ability to effectively accomplish things. As it relates to this hypothesis, competence refers to nurses' self-assessment regarding their ability to effectively manage their most distressing event during the past year. The rationale for predicting that competence has a direct negative effect on threat is based on an extensive body of research that suggest that negative self-evaluations about competency characterize chronic PTSD sufferers (Foa, Dancu et al., 1999; Foa, Ehlers et al., 1999; Hembree & Foa, 2000). The expectation that perception of safety has an influence on threat makes sense given that 'intense fear' to the qualifying event is stipulated in PTSD's Criterion A2. Support for this assumption was found in nursing surveys (Corneil & Kirwan, 1994; Manitoba Association of Registered Nurses, 1989; Powell, 1996; Registered Nurses' Association of Ontario (RNAO), 1992) and studies in other areas (e.g., Gilboa-Schectman & Foa, 2001; Hembree & Foa, 2000), that have found that perceptions of dangerousness and safety characterize PTSD sufferers. In addition, studies on the biology of PTSD have provided overwhelming evidence that suggests that the trauma memory of PTSD sufferers contains a number of stimulus elements associated with danger (de Kloet, Oitzl, & Joels, 1993; LeDoux, 1995; Yehuda, 2004).

The fourth hypothesis assumed that stable internal resources (SIRs) would have an effect on perception of threat and that number of exposures would have an effect on

perception of threat. Support for this hypothesis was found in studies investigating the potential role of personality vulnerability (e.g., borderline traits, neuroticism, psychopathic deviate, antisocial) on PTSD symptoms. Although some studies have found a direct relationship between personality vulnerability and PTSD, others have suggested that vulnerability together with exposure account for a large portion of the variance (Bramsen et al., 2000; Forbes et al., 1999; Lauterbach & Vrana, 2001; Lee et al., 1995).

The fifth and sixth hypotheses of this study examined the causal ordering of variables. In the fifth hypothesis, it was expected that workplace support would be positively related to perception of safety. In a meta-analysis conducted by Brewin et al. (2000) trauma severity and lack of support were found to have the largest effect size for PTSD. Further, there is a large body of evidence linking workplace support with how safety concerns are dealt with by nurse managers (e.g., Barling et al., 2000; Fitzwater & Gates, 2000; Kendra, 1996). Arguably, when safety concerns are not dealt with nurses are likely to continue to feel unsafe, and to fear a recurrence of the event.

The sixth hypothesis also examined the causal ordering of variables, but was concerned mainly with the effect of stable internal resources (SIRs). It is actually a set of three hypotheses, and maintains that SIRs would emerge as a significant, although indirect, predictor of perception of threat through three paths: One path through competence, another pathway through perception of safety, and an

indirect path on safety through support. If stable internal resources (SIRs) are to have a role in the etiology of PTSD, at least one researcher suggests that this is the area in which they would show their influence (McFarlane, 2000). Another line of inquiry (Barling et al., 2000; Findorff-Dennis et al., 1999; Palsson et al., 1995) maintains that recognizing one's capability for endurance when faced with trauma is important for the competent management of it, and for the accurate appraisal of the threat. According to Ryan and Deci (2000), individuals with strong SIRs have confidence in their abilities and maintain good self-evaluations of competency even when faced with external pressures that appear to deny it.

Given that nurses who work in clients' homes often work alone and may be faced with repeated threatening situations, it would be reasonable to assume that SIRs would influence perceptions of competence, safety, and support. Nurses with weak SIRs would likely perceive themselves as less competent in handling the event, would perceive events as more unsafe, and perceive their work environment as less supportive than their counterparts with strong SIRs. All of the hypotheses described in this section are presented in Figure 1.

A cross-sectional survey design was used to examine the relationships among the measured variables. Two structural equation models (SEMs) were developed to investigate this line of scientific inquiry. The general goal was to investigate and account for the variability in PTSD symptoms (clinical impact). There were three additional goals. The

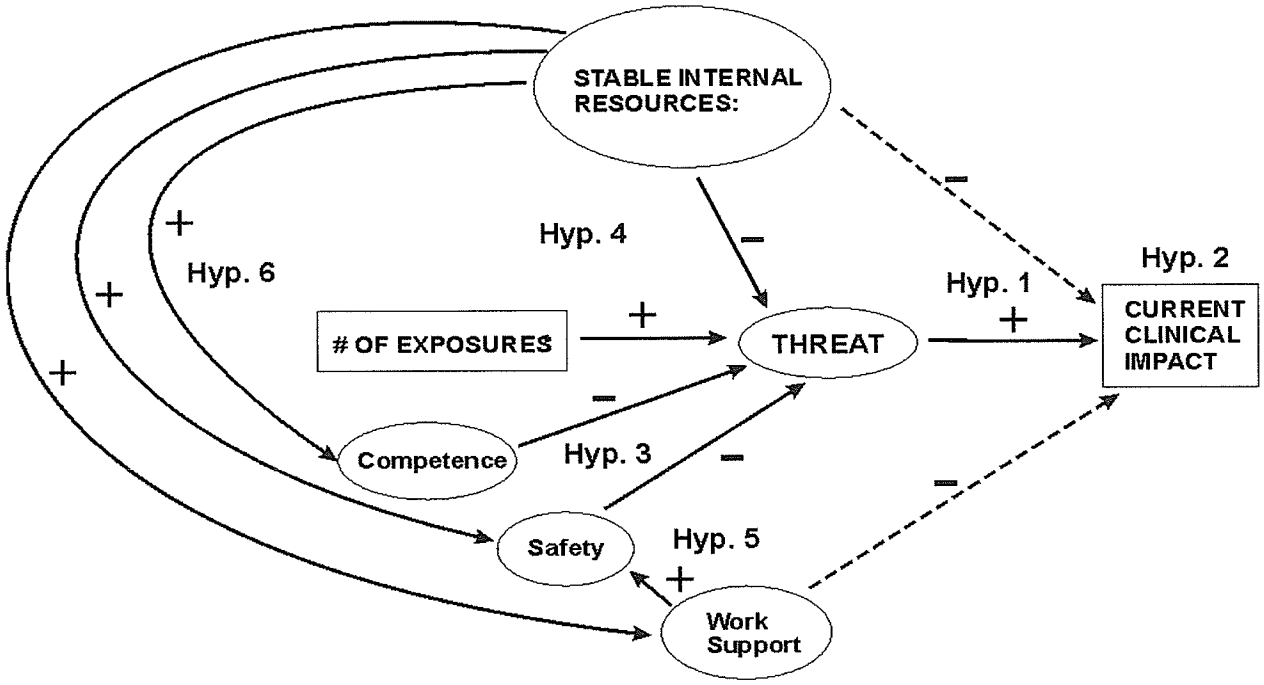

Figure 1. Hypothesized correlates of threat and PTSD

first was to investigate the influence of perception of threat on PTSD symptoms. The second goal was to investigate correlates of perception of threat. The third was to explore the direct influence of stable internal resources (SIRs) and workplace support on PTSD symptoms. Causal priority was decided in terms of the proximal ordering of the variables: (1) threat, (2) perceptual processes, and (3) pre-trauma SIRs. A description of the measurement of PTSD (clinical impact), threat, and the other variables included in this research paradigm is presented in the methods section.

Chapter III: Method

Participants

Eligible population (N = 1,910) in this study were nurses who work in clients' homes in the provinces of Manitoba and Alberta who indicated on their respective licensure application that they were currently providing in-home direct care to clients. All nurses who participated in this study belonged to their respective regulating authority (College of Registered Nurses of Manitoba, College of Licensed Practical Nurses of Manitoba, College of Registered Psychiatric Nurses of Manitoba, College and Association of Registered Nurses of Alberta, College of Licensed Practical Nurses of Alberta, and Registered Psychiatric Nurses Association of Alberta).

Questionnaires

The questionnaire package (see Appendices A - I) contained the following items: (a) A declaration of consent form, (b) questionnaire instructions, (c) demographics, (d) exposure scale (Lavack-Pambrun, 2002), (e) My Life Scale (MLS; Brodsky & Lavitch, 1999), (f) Orientation to Life Questionnaire (OLQ-13; Antonovsky, 1987), and (g) the PTSD Checklist (PCL-C) (PCL-C; Weathers, Litz, Herman, Huska, & Keane, 1993). Also included in the questionnaire package was a cover letter inviting nurses to participate in the study, and a list of phone numbers for counselling services to be accessed if required.

Demographic and Workplace Experiences. The items included in this section of the questionnaire package were

selected from previous nursing studies (Corneil & Kirwan, 1994; Lavack-Pambrun, 2002; Powell, 1996; Registered Nurses' Association of Ontario (RNAO), 1992), the nursing practice environment literature (Barling et al., 2000; Findorff-Dennis et al., 1999), and in consultation with three nurse coordinators of a national Critical Incident Stress Management Services program (CISMS, Health Canada) that have extensive education and field experience (Appendix C). Feedback for the appropriateness of the items was obtained from the six regulating authorities (College of Registered Nurses of Manitoba, College of Licensed Practical Nurses of Manitoba, College of Registered Psychiatric Nurses of Manitoba, College and Association of Registered Nurses of Alberta, College of Licensed Practical Nurses of Alberta, and Registered Psychiatric Nurses Association of Alberta). The final selection of items yielded 22 questions. Ten items are related to background information (e.g., nursing experience, academic achievement, job status, nursing work classification). Six items are related to experiences concerning safety, injuries, and the reporting of violence/abuse incidents to management. Five items are related to services made available by the home healthcare employer to assist with workplace violence, services accessed (including services not provided by the employer), and employer initiatives to address workplace violence. One question consisted of 24 Likert scale items (1 = strongly agree, 7 = strongly disagree) related to nurses' perceptions of support, safety, and competence.

Exposure Scale. This scale measures exposure to traumatic events, perception of threat for the most distressing event (MDE), and perception of competency for the MDE. Regrettably, the development of trauma exposure measures has lagged behind PTSD measures. One explanation for this lag is that exposure measures are challenged by the use of different definitions (i.e., violent events may or may not include abusive/threatening remarks), methodological approaches (i.e., past year, past 6 months, last shift), and measuring instruments, making any comparisons across studies difficult at best. A particular list is determined to be useful on the basis of common sense, that is, the assumption is made that experts that are consulted would agree that the events chosen are traumatic for the sample under study.

The items included in the exposure measure for this study were selected from a series of nursing surveys (Corneil & Kirwan, 1994; Lavack-Pambrun, 2002; Manitoba Association of Registered Nurses, 1989; Powell, 1996; Registered Nurses' Association of Ontario (RNAO), 1992). The final Exposure Scale (Lavack-Pambrun, 2002) comprised a list of 35 items. Content validity for the items was judged *a priori* by a small focus group composed of three nurse coordinators of a national Critical Incident Stress Management Services program (CISMS, Health Canada) and six administrators, each representing their respective regulating authority in the provinces of Manitoba and Alberta (Appendix D). In addition, an open-ended item was included for events not listed. Nurses were asked to

indicate if they had experienced any of the listed traumatic events during the past 12 months, including how many times they experienced each event in each category. If the nurses had previous exposures for the same event, they were asked to choose their most distressing event (MDE) in rating their threat and competency. To obtain a trauma exposure score, the number of exposures were summed.

The nurses were asked to rate their perception of threat (A2) for each event (if the event was experienced more than once, the MDE was chosen) according to (1) how threatening the event was at the time and (2) how threatening the event is currently. Each item was measured on a 7-point Likert scale (1 = not at all threatening, 7 = very threatening). The two threat items were summed for the MDE to produce a trauma threat score ranging from two to fourteen. Nurses were then asked to select their overall MDE, which they referred to in additional measures. In a previous study (Lavack-Pambrun, 2002) among nurses working in correctional institutions, the most recent event was used, however, the practice of asking for the MDE rather than the most recent event is consistent with recent recommendations (e.g., Breslau et al., 1999; Hodgins et al., 2001; Lauterbach & Vrana, 2001) for the measurement of criterion A2.

Nurses' perception of competence for the MDE was also measured by the Exposure Scale. This construct is operationalized as nurses' perceived ability to deal with their MDE. The nurses were asked to rate their perception of

competence at the time the event occurred (then) and currently (now), on a 7-point Likert scale (1 = felt very incompetent, 7 = felt very competent). High scores indicate high competence.

My Life Scale. This is a 30-item scale (MLS; Brodsky & Lavitch, 1999) that measures resilience (Appendix E). The nurses were asked to indicate how much each item applies to them (A = Very much not true about me ... E = Very much true about me). Thirteen items are reversed scored. High scores indicate high resiliency. The scale has good internal consistency (average Cronbach's alpha = .82 and test-retest reliability of .73 - .84). A factor analysis yielded three main factors: (a) Cognitive/problem-solving factor, which accounted for 22.7% of the variance, (b) interpersonal/ emotional factor, which accounted for 8.4% of the variance, and (c) competency/ability factor, which accounted for 7.5% of the variance.

Orientation to Life Questionnaire (OLQ-13). Although the literature in this section appears a bit dated, it represents the most current research to date. The original Orientation to Life Questionnaire (OLQ-29) is a 29-item self-report measure (eleven comprehensibility, ten manageability, and eight meaningfulness) that assesses sense of coherence (SOC), a global orientation toward coping (OLQ; Antonovsky, 1987). Thirteen of the 29 items are formulated negatively and are reversed scored; in other words, a high score represents a strong SOC. This study used the 13-item short version (OLQ-13) of the Orientation to Life

Questionnaire (Appendix F). Nurses were instructed to select an answer on a 7-point Likert scale with anchors, such as: "How often do you have the feeling that you don't really care about what goes on around you?" (1 = very seldom or never, 7 = very often); "How often have people you counted on disappointed you?" (1 = never happened, 7 = always happened). Completion of the OLQ-13 takes approximately 10 minutes, about 5 minutes less than the OLQ-29. The OLQ has been used in a variety of populations, in 14 different languages, and across all social classes and adult age groups (Frommberger et al., 1999). Both the long and short forms have demonstrated reliability and validity. For instance, in a study among patients of a Department of Veterans Affairs medical center (Coe, Romeis, & Hall, 1998) the means and standard deviations of the OLQ-13 and the OLQ-29 differed, as predicted; however, item means, inter-item correlations, and measures of internal consistency were found to have similar scale statistics.

As measured by Cronbach's Alpha, the OLQ-29 demonstrates a high level of internal consistency reliability, ranging from .84 to .95 (Antonovsky, 1987; Coe, Romeis, Tang, & Wolinsky, 1990; Frenz, Carey, & Jorgensen, 1990; Hittner, Paras, Stahl, & Gresham, 1990; Langius et al., 1992). Given the fewer items on the OLQ-13, studies using this scale report lower, but nonetheless acceptable, Cronbach's Alpha, ranging from .78 to .84 in four theses/ dissertations, and from .74 to .84 in seven unpublished studies (Antonovsky, 1998). Similar to studies among other

populations, a Finnish national study (Kalimo & Vuori, 1990) and a study among foreign MBA students (Ryland, Tegarden, & King, 1998) reported reliability coefficients of .93 and .80, respectively. According to Antonovsky's (1993) methodological review of the OLQ, the three components of the scale do not lower internal consistency. Of the few test-retest documented reports, a study among Israeli retirees and a kibbutz control group (Sagy & Antonovsky, 1990a) reported correlations of 0.52 and 0.54 after one year and two years, respectively, for the retires, and 0.56 and 0.55 for the kibbutz control group. A study among veterans reported six-month test-retest correlations of 0.80 for the OLQ-29, and .77 for the OLQ-13 (Coe et al., 1990). In a study among Israeli medical students (Carmel & Bernstein, 1990) correlations were 0.76 at one year and 0.41 at two years. Further reports include a one-year test-retest correlation of 0.78 among factory workers (Fiorentino, 1986), and a two-week test-retest correlation of 0.91 among college students (Radmacher & Sheridan, 1989).

In terms of convergent validity, Antonovsky (1993) reported a significant correlation of 0.64 between the OLQ-29 and a 22 item scale designed by Rumbaut and colleagues at the University of California, to measure the Sense of Coherence construct. Dana, Hoffman, Armstrong, and Wilson (1985) reported a correlation of 0.72 between these two scales, and a correlation of 0.39 between the OLQ-29 and a 40-item scale developed by Payne (1982). In addition, a correlation of 0.80 was reported between the OLQ-29 and a

104-item scale developed to measure adaptive potential (Mishra, Colby, Milanesi, & Kennedy, 1990).

Preliminary evidence suggests that the OLQ has discriminant validity. The scale has been found to be unrelated to intellectual functioning (Frenz et al., 1990), stressful life events (Hart & Bliok, 1990; Mishra et al., 1990), optimism (Hart & Bliok, 1990), and perceived availability of interpersonal support (Hart et al., 1991).

In terms of criterion validity, studies have found correlations between OLQ scales (OLQ-29 and OLQ-13) and theoretically similar constructs. The OLQ-29 was found to be significantly related to perception of competence (Mishra et al., 1990), self-reported health status (Mishra et al., 1990), psychological general well-being (Hart & Bliok, 1990), hardiness (Williams, 1990), ability to control anger (Hart & Bliok, 1990), internal locus of control (Dahlin, Cederblad, Antonovsky, & Hagnell, 1990), and self-esteem (Petrie & Azariah, 1990), with the highest and lowest correlations ranging from .59 and .28 for ability to control anger and perception of competence respectively. The OLQ-13 was found to be significantly related to self-esteem (Nyamathi, 1991), extraversion (Margalit & Eysenck, 1990), and personal growth (Margalit & Eysenck, 1990), with the highest and lowest correlations ranging from .63 and .22 for self-esteem and personal growth respectively.

Studies have found correlations between the OLQ scales and measures of well-being and negative well-being, such as global health evaluation (Dahlin et al., 1990), global

health index (Sagy & Antonovsky, 1990a), universal self care (Baker, 1998), mental health and psychological well-being (Carmel, Anson, Levenson, Bonneh, & Maoz, 1991; Coe et al., 1990), subjective well-being and general well-being (Ryland & Greenfeld, 1990), quality of life (Dahlin et al., 1990; Post-White, 1998), life satisfaction (Brooks, 1998; Sagy, Antonovsky, & Adler, 1990b), physical well-being (Carmel et al., 1991), trait anxiety (Carmel & Bernstein, 1990; Frenz et al., 1990; Hart et al., 1991; Hittner et al., 1990; Mishra et al., 1990), depression (Frenz et al., 1990; Hart & Bliok, 1990; Hittner et al., 1990; Mishra et al., 1990), loneliness (Mishra et al., 1990), cynical hostility (Hart & Bliok, 1990), trait anger (Hart & Bliok, 1990), anger-in and anger-expression (Hart & Bliok, 1990), and sickness impact (Brooks, 1998). For measures of well-being, the highest and lowest correlations ranged from .76 to .21 for quality of life and physical well-being respectively. For negative well-being, studies have reported a range of correlations from -.59 to -.85 for trait anxiety to -.29 for trait anger.

PTSD Checklist (PCL-C). The PTSD Checklist (PCL-C; Weathers et al., 1993) includes 17 items that are directly adapted from the DSM-IV PTSD Criteria B - D (Appendix G). Nurses were asked to rate on a 5-point scale (with anchors ranging from 1 = not at all, 5 = extremely) how much they had been bothered by a particular symptom in the past month. There are four versions of the PTSD checklist. Versions are identical except for: (a) target population specified (PCL-M = 'veterans'; PCL-C and PCL-S = 'people'; PCL-PR =

'children'), (b) type of stressor (PCL-M = 'stressful military experiences'; PCL-S = a specified 'stressful life experience'; PCL-C and PCL-PR = any (unspecified) 'stressful life experiences').

Weathers et al. (1993) report a test-retest reliability for the PCL-M of 0.96 from a study of 123 male Vietnam theatre veterans and validity as demonstrated by a kappa of 0.64 for PTSD diagnosis from the Structured Clinical Interview (SCID; Spitzer, Williams, Gibbon, & First, 1990). These researchers also report data on the three symptom clusters, based on the DSM-III-R, leading to a diagnosis of PTSD, including internal consistency (alpha coefficients). Coefficient alphas ranged from .89 to .97 for criteria B - D symptoms, and for the total score. The PCL-M also correlates highly with other measures of PTSD (r = .85 with the Mississippi Scale, r = .90 with the Impact of Events Scale, and r = .77 with the MMPI PK scale). Finally, PTSD diagnoses using SCID were predicted with optimal efficiency with a cut-off score of 50 on the DSM-III-R, PCL-M (sensitivity of .82; specificity of .84; Kappa = .64). Mean PCL-M total scores were 63.6 (SD = 14.1) for PTSD participants and 34.3 (SD = 14.1) for those not diagnosed with PTSD.

Weathers et al. (1993) do not report data on the individual items. In a study of motor vehicle accident victims and sexual abuse victims, Blanchard, Jones-Alexander, Buckley, and Forneris (1996) used diagnoses and scores from the Clinician Administered PTSD Scale (CAPS; Blake et al., 1990) to assess the psychometric properties of

the 17 individual items of the DSM-III-R, PCL-M. PCL scores varied from 17 to 74 with a mean of 45.8 (SD = 16.1), whereas the CAPS scores ranged from 0 to 119, with a mean of 45.9 (SD = 29.1). The overall correlation with the PCL total score and the CAPS total score was $r(38) = 0.929$, $p < .0001$. Using the recommended PCL cut-off score of 50 yielded a sensitivity of 0.778, a specificity of 0.864, as well as diagnostic efficiency of 0.825. Cronbach's alpha was 0.939, 0.935, 0.820, and 0.839 for the total scale and for items in criteria B, C, and D respectively.

Procedure

The purpose of the study was discussed with representatives of the six regulating authorities to elicit their support. Following ethical approval of the study by the department of psychology, its human ethical review committee, and the nurses' regulating authorities, the eligible population (N = 1,910) of nurses who work in clients' homes were solicited through their respective regulating authority to participate in the study. In order to maintain anonymity, each regulating authority designated a staff member to mail out the package of questionnaires to the nurses. To assure that no information would be used for performance evaluation purposes, the nurses' employers and regulating authorities do not have access to the nurses' individual data.

A cover letter describing the aims and purpose of the study, and emphasizing the importance of the subject of the study, its benefit to the membership, and the personal

importance of the nurses' participation to the study's success was mailed to eligible nurses. Nurses were also sent a declaration of informed consent that guaranteed confidentiality. Anonymity was also maintained by requesting that the nurses not indicate their name anywhere on the questionnaire booklet, nor on the return self-addressed envelope. Based on the response rate (33.30%), no additional mailings of the questionnaire were required. This approach meets the requirements for statistical design because a power analysis on the proposed study and expected effects required approximately 220 completed surveys.

Data Analysis

Descriptive data was obtained for each instrument. Simple correlations between various predictor and outcome variables were computed. Two structural equation models (SEMs) were conducted. This approach made it possible to assess both the direct and indirect relationships between the variables, and provide a test of the overall fit to the obtained data.

Two latent variables, which are in essence summary measures of several manifest variables, are proposed in the model (Figure 2). A latent variable is defined as "a hypothetical construct that is not directly observed, but whose existence is inferred from the way that it influences manifest variables [i.e., measured variables]" (Hatcher, 1994, p. 254). The common variance among the manifest variables is the true measure of the latent construct. The first latent variable is the stable internal resource (SIR)

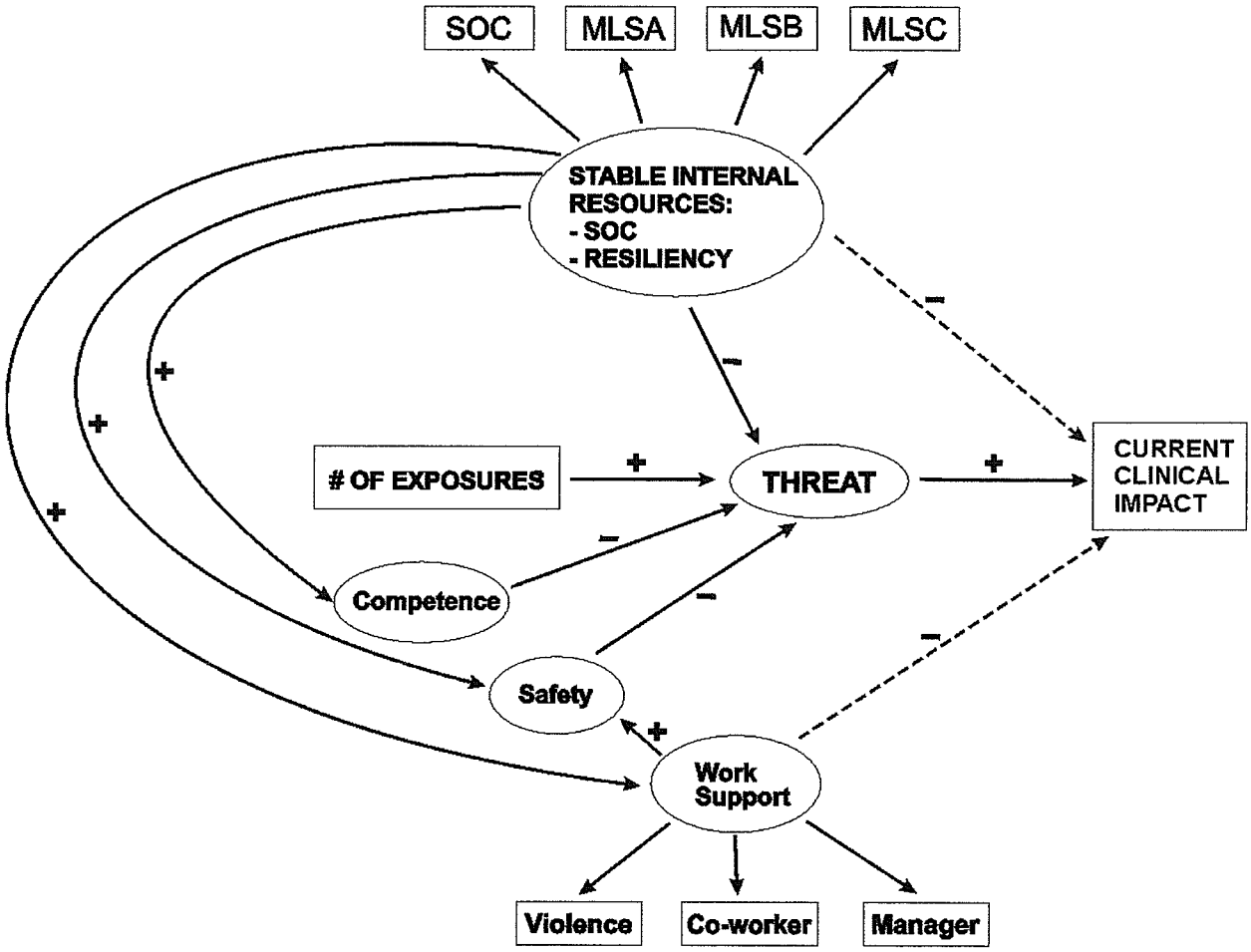

Figure 2. Manifest and Latent Variables in the Structural Equation Models

variable, which was obtained by combining the Sense of Coherence (SOC) scale and resilience subscales. There are theoretically similar components that make up the SOC and resilience constructs. Antonovsky (1987) emphasized the comprehensibility, manageability, and meaningfulness components of SOC to capture the individual's global orientation to coping with adversity. According to Antonovsky (1993): "The SOC is a way of seeing the world which facilitates successful coping with the complex stressors confronting us in the course of living" (p. 725).

In a similar vein, theory and empirical efforts to define resilience have emphasized three key underlining components: the ability to problem-solve and overcome adversity with no apparent disruption in functioning (Blum, 1998; Bonanno, 2004), an emotional factor (Bonanno et al., 2003; Bonanno et al., 2001; Fredrickson et al., 2003), and self-understanding (Beardslee, 1989). Taking things a step further, Beardslee operationalized self-understanding as involving: (a) Adequate appraisal of negative events over time (meaningfulness component of SOC construct), (b) realistic appraisal of the capacity for and likely consequences of one's action (comprehensibility component of SOC), and (c) commitment to engage in actions in the face of adversity (manageability component of SOC). Both the SOC and resiliency constructs capture the subjective perception of trauma (Criterion A2); the individual's commitment to engage in actions in the face of adversity; the individual's appraisal of the capacity for and likely consequences of

one's actions; and the capacity to utilize coping resources to manage the event.

The second latent variable is the work support variable, which was obtained by combining three manifest variables. These three manifest variables consisted of lack of support as it relates to reasons for under-reporting workplace violence (e.g., "lack of support by my supervisor/manager"; 8 items), co-worker support (e.g., "overall I am satisfied with the support I receive from my co-workers after I experience workplace violence/abuse"; 4 items), and manager/supervisor support (e.g., "Overall, my supervisor/manager gives me recognition and supportive praise for how I manage workplace violence/abuse situations"; 10 items). These three categories of support items were combined to make up the latent variable work support, to represent overall workplace support.

The under-reporting of workplace violence, co-worker support, and manager/supervisor support have been empirically linked to employment dissatisfaction, mental health, PTSD, depression, sleep problems, poor general health, sick days taken, and psychosomatic problems (Barling, 1996; Barling et al., 2000; Findorff-Dennis et al., 1999; Palsson et al., 1995; Registered Nurses' Association of Ontario (RNAO), 1992; Statistics Canada et al., 2006; Williams, 1996). Further, Barling and colleagues (2000) maintain that when nurses do not have their safety concerns addressed and when there is a lack of appropriate workplace support, fear of recurrence may be exacerbated.

Prior to conducting the analyses, the assumptions for structural equation modeling were examined. Appropriate transformations were performed on variables if they were highly skewed or not normally distributed. In addition, some variables were scaled to make the standard deviations of the set of manifest variables (i.e., measured variables) approximately equal. Simple regressions were also conducted to determine if there were non-linear relationships (i.e., quadratic, cubic) in the proposed paths. None of these tests indicated a non-linear relationship.

Chapter IV: Results

Of the 1910 mailed surveys, a total of 636 were returned, for a response rate of 33.30%. This response rate is similar to the rate reported in a study among emergency and intensive care registered nurses (35.5%; Powell, 1996), is lower than the rates reported among registered nurses working in northern communities (63%; Corneil & Kirwan, 1994) registered nurses working in correctional institutions (44%; Lavack-Pambrun, 2002) and a national survey (80%; Statistics Canada et al., 2006), but is higher than the rate reported in a nurse assault survey (27%; Registered Nurses' Association of Ontario (RNAO), 1992).

PTSD Outcome

Of the 636 nurses who responded to the survey, 507 provided a complete set of responses on the PCL Checklist. Results indicated that 109 (21.5%) reported no PTSD symptoms. Using the recommended cut-off score of 44 (Blanchard, Hickling, & Barton, 1996) for identifying PTSD cases, 61 of the respondents (12%) were identified as having met criteria for PTSD. This is similar to the prevalence rate of 13% reported among police officers (Robinson et al., 1997), lower than the rates of 16.5% and 18.2% reported among firefighters (Corneil, 1993; Wagner et al., 1998), and the reported rates of 20.0% and 21.9% among experienced paramedics and paramedic students (Grevin, 1996a).

Although numerous studies have found that nurses are at risk of developing detrimental outcomes due to frequent exposures to workplace violence (Barling et al., 2000;

Duncan et al., 2001; Hesketh et al., 2002; Kelloway et al., 2000; McKoy & Smith, 2001; National Institute for Occupational Safety and Health, 1996, 1997; Statistics Canada et al., 2006), studies have only recently started to report PTSD prevalence rates among nurses. The PTSD prevalence rate in this study is much lower than the reported rates of 33.0% among northern nurses (Corneil & Kirwan, 1994), 34.9% among correctional nurses (Lavack-Pambrun, 2002), and 42.1% among emergency room and intensive care nurses (Powell, 1996).

It is conceivable that the discrepancy in PTSD prevalence rates (between the one in this study and those from the other nursing groups) may be due to differences in methodologies and outcome measures across studies. Different from the methodology used in this study, Corneil and Kirwan (1994), Lavack-Pambrun (2002), and Powell (1996) computed their prevalence rates based on Burge's (1988) methodology that links items from the Brief Symptom Inventory (BSI; Derogatis & Spencer, 1982) and the Impact of Events scale (IES; Horowitz, Wilner, & Alverez, 1979) with PTSD's diagnostic criteria. Given the high incidence of workplace violence among nurses, it is surprising that few studies report PTSD prevalence rates among nurses. This area merits future empirical attention.

Demographics

As expected, almost all of the nurses who participated in this study were women (n = 604, 94.7%). In terms of age distribution, 57% were 46 years of age or older (n = 178),

28% were 36 to 46 years of age, and 14% were less than 36 years of age (n = 91).

Overall, the nurses who participated in this study were very similar to their counterparts in a recent large scale survey among Canadian nurses (Statistics Canada et al., 2006), which yielded an average age of 44.3 years, and with women accounting for 94.5% of the survey's sample. The nurses in this study were represented by the following nursing practice groups; 437 (69.5%) registered nurses (RNs), 127 (20.2%) licensed/registered practical nurses (LPNs), and 57 (9.1%) registered psychiatric nurses (RPNs).

The overwhelming majority of nurses worked for a single home healthcare employer (n = 602). Most were permanent employees (246 full-time; 264 part-time); sixteen were term employees, 85 were casual employees, (79 part-time), two were contract employees, and 10 worked for an agency. Job status was also examined by practice groups. Over three-quarters of registered psychiatric nurses were employed full-time (76.8%), compared to approximately one third of registered nurses (37.5%) and about one quarter of licensed/registered practical nurses (28%). For both registered nurses and licensed/registered practical nurses approximately 45% were employed part-time, compared to only 18% of the registered psychiatric nurses who were part-time.

Nurses were asked about their work experience in the nursing field, and their experience in the home healthcare field. Only five nurses had less than one year total nursing experience, while 154 had over 10 years of nursing

experience, and 358 had over 20 years nursing experience. Only 22 nurses had been working in the home healthcare field for less than a year. One hundred and eighty had been working between one and four years, 118 from five to seven years, 85 between eight and 10 years, and 225 for over 10 years. Percentages for these demographics are presented in Table 1.

Most of the nurses had initially graduated with a diploma (n = 425). A cross-tabulated table of initial education and additional nursing education (based on the most common initial education) and by nursing group (licensed/registered practical nurse, registered nurse, registered psychiatric nurse) is presented in Table 2. For licensed/registered practical nurses the majority (55.1%) started with certificates, whereas 39.4% started with a diploma. Of those with a certificate, 55 obtained additional nursing education, 40 obtained a post licensed/registered practical nurse certificate, and six obtained a diploma. In contrast, almost three quarters of registered nurses (72.1%) started with a diploma, while the remainder (26.3%) had a baccalaureate. Of those who started with a diploma, 76 went on to obtain a baccalaureate degree. Ninety-three percent of registered psychiatric nurses started with a diploma, and four of them went on to obtain a baccalaureate degree, three of which were in mental health.

Safety Concerns and Sustained Injuries

Sixty three percent of the nurses (n = 397) reported carrying a cell phone, beeper, or two-way radio with them

Table 1

Demographics of Nurses who work in Clients' Homes

	N	Percentage
Sex		
Male	25	3.9
Female	604	95.4
Age		
Less than 25 years	4	0.6
25-35 years	87	13.7
36-46 years	178	28.1
More than 46 years	363	57.4
Nursing group		
Licensed/registered practical nurse	127	20.2
Registered nurse	437	69.5
Registered psychiatric nurse	57	9.1
Job status		
Permanent (full-time)	246	39.2
Permanent (part-time)	264	42.1
Term position	16	2.6
Casual position	85	13.6
Contract position	2	0.3
Agency	10	1.6

Table 1

Demographics of Nurses who work in Clients' Homes, Cont.

	N	Percentage
Years working in home care field		
Less than 1 year	22	3.5
1-4 years	180	28.5
5-7 years	118	18.7
8-10 years	85	13.5
More than 10 years	225	35.6
Years working in nursing		
Less than 1 year	5	0.8
1-5 years	32	5.1
6-10 years	83	13.1
11-15 years	80	12.6
16-20 years	74	11.7
More than 20 years	358	56.6

Table 2

Initial and Additional Nursing Education by Nursing Groups

	LPN		RN		RPN	
	N	%	N	%	N	%
Initial Education						
Certificate	70	55.1	4	0.9	2	3.5
Diploma	50	39.4	315	72.1	53	93.0
Baccalaureate	1	0.8	115	26.3	2	3.5
Other	5	3.9	1	0.2	---	---
Additional Education*						
Certificate	28	40.0	46	14.6	5	9.4
Post Lic/Regis. Prac/Cert.	40	57.1	4	1.3	1	1.9
Reg,Psychia. Diploma	---	---	3	1.0	---	---
Post Lic/Regis. Prac/Diploma	6	8.6	---	---	---	---
Post Regis. Nurse Diploma	---	---	16	5.1	1	1.9
Adv. Diploma/ Psychi.Nursing	---	---	2	0.6	---	---
Nurse Practitioner	---	---	1	0.3	---	---
Bac. in Nursing	---	---	76	24.1	---	---
Bac. of Sci./ Mental Health	---	---	2	0.6	3	5.7
Masters in Nursing	---	---	6	1.9	---	---
PhD in Nursing	---	---	1	0.3	---	---

Licensed/registered practical nurses who started with a certificate, Registered nurses who started with a diploma, and Registered psychiatric nurses who started with a diploma

for protection. Four hundred sixty-six (76.5%) indicated that they would not go in to a client's home alone if they perceived safety concerns. Although only 16 nurses reported that they had sustained an injury due to workplace violence in the past year, 24 answered Question Six which asked what type of injury they had sustained (four reported cuts not requiring stitches, 10 reported bruises, 11 reported neck/back pain, 10 reported strained muscles, and nine "other"). Two additional nurses (n = 26) indicated that they had taken some action as a result of sustained injury. The most frequently reported help-seeking actions were seeking support from their supervisor/manager (n = 14) and documenting the event in the client's chart (n = 15). One can speculate that with each subsequent question about their injury experience, they more likely were to respond positively, or recognize that they had been injured at work. These findings are presented in Table 3.

Question 10 asked the nurses what services their employer made available to its employees. Six hundred nine nurses responded to this question. Thirty-nine reported that none of the services listed were made available by their employer, and 21 indicated that they had accessed services provided by the employer. Question 12 asked nurses what services they had accessed, including services not provided by their employer. Fifty of the nurses indicated that they had accessed services. The most accessed service was the EAP (n = 24), and the least accessed service was traditional healer (n = 1). Services provided and services accessed are

Table 3

Safety Concerns and Sustained Injuries

	N	Percentage
Carry a cell phone/beeper/ or two-way		
Radio for protection	397	63.2
Sustained injuries		
Cuts not requiring stitches	4	0.6
Bruises	10	1.6
Pain (neck/back)	11	1.8
Strained muscles	10	1.6
Other	9	1.4
Actions taken due to sustained injuries		
Ignored it	6	1.0
Took it out on others	2	0.3
Sought support from supervisor/manager	14	2.2
Sought support from co-workers	9	1.4
Put in a grievance	3	0.5
Documented the event in client's chart	15	2.4
Wrote up a formal incident report	11	1.8
Took time off as sick time	4	0.6
Took time off as vacation time	---	---
Took time off as unpaid leave	1	0.2
Took time off as long-term disability	1	0.2

Table 3

Safety Concerns and Sustained Injuries, Cont.

	N	Percentage
Filled out a Workers' Compensation claim	8	1.3
Took time off due to Workers' Compensation leave	1	0.2
Reported incident to police (laid charges)	---	---
Reported incident to police (no charges laid)	3	0.5
Reported incident to supervisor/manager	11	1.8
Sought medical assistance and treatment	6	1.0
Quit job	1	0.2
Requested a new assignment	4	0.6
Obtained outside counselling	1	0.2

reported in Table 4. For the most part, the programs that were accessed (93.2%) were also recommended by them. Question 13 asked the nurses what their employer had done to address workplace violence. The most widely reported initiative was the provision of education on workplace violence/abuse, and implementation of a policy that states that nurses are not required to provide care to clients when their personal safety is at risk (71.8% for both). The least reported initiative was the provision of training on managing high risk situations. These results are reported in Table 5.

Question 14 asked the nurses if they had participated in critical incident stress management services at work. Twenty nurses reported that they had attended a pre-incident workshop and 12 indicated that they had attended a post incident intervention such as a group debriefing or individual critical incident stress counselling.

Survey Measures

PTSD Checklist. The 17 items that comprise the PTSD checklist were included in a factor analysis using principal components to verify that responses were all driven by a single underlying factor. A single factor emerged, accounting for 60.9% of the variance in the items on the checklist. A reliability analysis on the 17 items indicated that the checklist was an extremely reliable measure, with a Cronbach's alpha of .96. This is even better than the Cronbach's alpha reported in the literature, which range

Table 4

Services Made Available by Home Healthcare Employers

	Available (N = 609)	Accessed (N = 50)
CISMS	197	6
EAP	515	24
Extended Health Services	277	8
Non-Insured Health Benefits	37	---
Workers' Compensation	296	6
Other	20	---
Family Physician		22
Walk-In Clinic, Emergency, other Health Care professional		13
Minister, Priest, or Rabbi		7
Traditional Healer		1
Services not covered in my workplace (i.e., social worker)		8

Table 5

Home Healthcare Employer Initiatives and Workplace Violence

	N	%
Education on workplace violence/abuse	409	71.8
Developed/implemented a practice protocol for dealing with workplace violence	319	56.0
Established a reporting system for tracking workplace violence/abuse	255	44.7
Evaluated its safety procedures	251	44.0
Provided education and training for dealing with workplace violence at orientation	252	44.2
Invited professionals who are trained to teach safety prevention at education sessions	213	37.4
Provided specialized security escort/police protection when working in an unsafe home/area	161	28.2
Provided training on managing high risk situations	139	24.4
Implemented a policy that states that nurses are not required to provide care to clients when their personal safety is at risk	409	71.8

from .89 to .94 (Blanchard, Jones-Alexander et al., 1996; Weathers et al., 1993).

My Life Scale. The 30 items in the My Life Scale were submitted to a factor analysis using principal components with a varimax rotation. Using a cut off point of 0.30, the factor loadings of this scale are presented in Table 6. Three factors emerged from the analysis, accounting for a total of 31.5% of the variance in the scale. Four items were not accounted for by the factor analysis (items: 1, 5, 12, 15). The first factor had high loadings (> .40) on items 2, 3, 4, 6, 8, 9, 10, 11, and 28. These items primarily pertain to problem solving/competency. The second factor received high loadings on items 17, 22, 23, 24, and 25, and moderately high loadings (> .35) on items 18 and 19. These items relate to interpersonal relationships, or dealing with emotions. The third factor received high loadings on items 14, 16, 20, 21, 26, 27, and 29, and moderately high loadings on items 7, 13, and 30. These items pertain to negative self perceptions. When these three factors were treated as subscales, the Cronbach's alphas were .76, .72 and .60 respectively.

Orientation to Life Questionnaire (OLQ-13). The OLQ-13 is a short version of the original Orientation to Life Questionnaire, OLQ-29 (OLQ; Antonovsky, 1987). This scale has five comprehensibility, four manageability, and four meaningfulness items that measure global orientation to

Table 6

Factor Loadings on the My Life Scale

	Factors		
	1	2	3
I like to solve problems of all kinds	.723		
If I have a problem I try to focus on solving it	.663		
I feel that I can do whatever I set out to do	.611		
If I have a problem I look at it as an opportunity to learn something new	.609		
If life presents me with a lemon I think about making lemonade	.576		
I am the sort of person who prefers to light a candle instead of cursing the darkness	.560		
I can usually laugh at myself	.437		
I consider myself competent	.437		
If someone is angry at me I try to talk it out with them	.395		
Other people often turn to me to help them when they have a problem	.370	.345	
I am usually able to express love and affection to others		.775	
I am good at comforting other people		.682	
I feel comfortable with my feelings and emotions		.655	
At times I touch others when showing emotional support		.587	
My relationships with others tend to be very close		.495	

Table 6

Factor Loadings on the My Life Scale, Cont.

	Factors		
	1	2	3
I feel tense in personally intimate situations		-.425	.414
I find it easy to trust other people		.364	
I am very sensitive about being rejected			.683
When someone is mean to me I take it personally			.638
I sometimes find myself in relationships which are not satisfying to me but I stay in them anyway			.583
At times I have been in a really tough situation and I didn't know how to get out of it			.543
I feel awkward around others		-.331	.532
I try to avoid confrontations with other people			.401
When I get overwhelmed with stress I tend to give up			.378
When I have a problem I focus on doing something else to avoid thinking about it			.355
I am often prone to brooding and sulking			.346
I sometimes like to be alone and amuse myself			
If I get a flat tire I wait for someone to help me			
I prefer other people to take control over my life			
When I have a problem I unwind by drinking			

coping. The first three questions as well as question eight and question 13 were reverse coded for the analysis; therefore, a high score represents a strong SOC. A principal components factor analysis conducted on the 13 items indicated that the items loaded on one primary factor, which accounted for 38.8% of the variance in the scale. In other words, this analysis suggests that the scale has one global factor that measures SOC, and that comprehensibility, manageability, and meaningfulness are captured in each item, rather than in three distinguishable independent factors. This is comparable to results of factor analyses reported in the literature (e.g., Coe et al., 1998; Coe et al., 1990; Flannery & Flannery, 1990). These results are reasonable considering that Antonovsky (1987) developed the OLQ to measure the SOC construct as a global orientation to coping.

A reliability analysis on the 13 items found that the OLQ was very reliable, with a Cronbach's alpha of .87. This is comparable to the Cronbach's alpha reported in the literature for the OLQ-29, which ranges from .84 to .95 (Antonovsky, 1987; Coe et al., 1990; Frenz et al., 1990; Hittner et al., 1990; Langius et al., 1992), and somewhat better than the Cronbach's alpha reported for the OLQ-13 (Antonovsky, 1998), which ranges from .78 to .84.

Additional Measures. Both question nine and question 15 included items related to perception of safety and support. These items were used to create measures of perception of safety and perception of workplace support (managers, co-workers). All of these measures were included in the

structural equation analysis. Perception of safety is a composite of items 1, 6, 21 and 22 from question 15 (Cronbach's alpha = 0.70). Perception of workplace support as it relates to the reporting of workplace violence/abuse was a composite of items 3, 5, 6, 8, 9, 10, 11 and 13 from question nine, Cronbach's alpha = 0.71. Two additional measures of workplace support were derived from items on Question 15. A measure of co-worker support included items 4, 11, 18, and 20 (Cronbach's alpha = 0.87). A measure of manager support included items 2, 3, 5, 7, 8, 13, 15, 16, 17, and 23 (Cronbach's alpha = 0.90). The nursing groups did not show any significant differences on perception of support or safety. The means and other distributional statistics for these variables are presented in Table 7.

Exposure Scale. Two primary measures were calculated from this scale, one assessing perception of threat related to the most distressing event and one assessing perception of competence for the most distressing event. These were simply the averages of the 'threat then' and 'threat now' components of the scale, and the 'competency then' and 'competency now' components of the scale. Means and distributional statistics for these variables are presented in Table 8. There were no significant differences between the nursing groups on the threat and competency components. Workplace violence (n = 35) was categorized into different types of events (sexual assault, physical assault, verbal assault/abuse, and other). These were simply the sums of the number of times that the different types of events occurred,

Table 7

Nurses' Perceptions of Competence, Safety, Support, and Threat

	n	Mean	SD
Perception of safety	633	5.4	1.19
Perception of workplace support as it relates to reporting of violence	638	0.6	1.05
Perception of manager support	633	3.3	1.57
Perception of co-worker support	633	2.9	1.93
Self perception of competence	633	12.2	4.03
Others perception of respondent's competence	638	19.7	3.50
Competence (for MDE)			
Then	319	4.6	1.98
Now	319	5.0	2.01
Perception of threat (for MDE)			
Then	328	4.7	1.89
Now	323	3.3	2.08

Significance level: $p < .01$

Table 8

Perceptions of Threat and Competence for the Most Distressing Event by Nursing Groups

	Most Distressing Event								
	LPN			RN			RPN		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Perception of:									
Threat Then	63	4.69	1.97	224	4.69	1.85	30	4.16	2.03
Threat Now	58	3.38	2.23	221	3.32	2.05	30	2.61	2.03
Perception of:									
Competence Then	59	4.53	2.12	221	4.57	1.96	30	4.87	1.85
Competence Now	59	4.53	2.25	220	5.18	1.90	30	5.00	2.08

Significance level: $p < .05$

with any single type of event capped at thirty. Frequencies and percentages of reported events are presented in Table 9.

One-quarter (24.9%) of the nurses in this study indicated that they had experienced physical threat, nearly half (42.0%) indicated that they had experienced verbal abuse/threat, and approximately one quarter (29.9%) reported experiencing sexual assault, with sexual harassment by client or family member/visitor accounting for 19.9%. These results are similar to the physical assault (29%) and verbal assault (44%) findings reported in the 2005 National Survey among all types of nurses (Statistics Canada et al., 2006). Although clients/family members were the perpetrators of the majority of workplace incidences, co-workers were also responsible for some incidences, especially verbal abuse/threat and verbal sexual harassment. This finding is similar to results reported in other studies (Hesketh et al., 2002; Statistics Canada et al., 2006). For the most distressing event, nurses were also asked if they had reported the event to their supervisor. Only 433 completed 1this question, with 101 answering that they had reported the event to their supervisor.

Having reviewed the measures that will be included, we can place these variables into the context of the structural equation model (SEM). Sense of Coherence and the My Life Scale factors are treated as aspects of stable internal resources (SIRs). Three different but similar measures of support are included in the latent construct of workplace support (support for the reporting of workplace violence,

Table 9

Workplace Violence/Abuse/Other Traumatic Events among Nurses (Criterion A1) (n = 633)

	Reported		MDE*	
	n	%	freq.	%
Being raped by client or family member/visitor	1	0.2	0	---
Being raped by a co-worker	0	---	0	---
Being sexually assaulted, other than raped by client or family member/visitor	45	7.1	11	1.7
Being sexually assaulted, other than raped by co-worker	1	0.2	0	---
Being sexually harassed (e.g., unwanted sexual remarks) by client or family member/visitor	126	19.9	19	3.0
Being sexually harassed (e.g., unwanted sexual remarks) by co-worker	16	2.5	0	---
Attacked with a weapon by client or family member/visitor	5	0.8	6	0.9
Attacked with a weapon by coworker	0	---	0	---

* Most Distressing Event

Table 9

Workplace Violence/Abuse/Other Traumatic Events among Nurses (Criterion A1), Cont. (n = 633)

	Reported		MDE	
	n	%	freq.	%
Witnessed another person being attacked with a weapon by client or family member/visitor	4	0.6	1	0.2
Witnessed another person being attacked with a weapon by coworker	0	---	0	---
Physically attacked without a weapon by client or family member/visitor	52	8.2	15	---
Physically attacked without a weapon by co-worker	8	1.3	1	0.2
Attacked by a dog belonging to client or neighbour	87	13.7	19	3.0
Witnessed another person being physically attacked without a weapon by client or family member/visitor	17	2.7	2	0.3
Witnessed another person being physically attacked without a weapon by co-worker	3	0.5	0	---
Attempted physical assault by client or family member/ visitor (i.e., threw an object but missed me)	10	1.6	1	0.2

Table 9

Workplace violence/Abuse/Other Traumatic Events among Nurses (Criterion A1), Cont. (n = 633)

	Reported		MDE	
	n	%	freq.	%
Attempted physical assault by a co-worker (i.e., threw an object but missed me/I got away)	1	0.2	0	---
Verbal abuse/threat by client or family member/visitor intending harm (e.g., name calling, yelled at)	266	42.0	106	16.7
Verbal abuse/threat by co-worker intending harm (e.g., name calling)	57	9.0	34	5.4
Telephone threats, abusive letters, unjustified complaints to managers by client/family members	110	17.4	40	6.3
Telephone threats, abusive letters, unjustified complaints to managers by co-workers	33	5.2	7	1.1
Received telephone threats or abusive letters by client or family member	41	6.5	3	0.5
Received telephone threats or abusive letters by co-workers	4	0.6	0	---
Work related death of a well known colleague	27	4.3	11	1.7

Table 9

Workplace Violence/Abuse/Other Traumatic Events among Nurses (Criterion A1), Cont. (n = 633)

	Reported		MDE	
	n	%	freq.	%
Hearing about the attempted suicide of a co-worker	21	3.3	4	0.6
Prolonged resuscitation of client	14	2.2	6	0.9
Overdose of client	42	6.6	7	1.1
Possible/actual contact with infectious body fluids	63	10.0	13	2.1
Alone with a known dangerous client or family member	76	12.0	19	3.0
Serious injury or death of a client due to violent causes	20	3.2	0	---
You witnessed the completed suicide of a client or family member/visitor	4	0.6	6	0.9
Exposed to the attempted suicide of a client or family member/visitor	20	3.2	3	0.5
Unexpected death of a client	121	19.1	29	4.6
Witnessed a seriously disfigured person, strong smells/ odours coming from the body of a client	170	26.9	20	3.2
Other	35	5.5	12	1.9

co-worker support, manager support).

Initial Structural Equation Model (SEM)

The results of the initial SEM, with the manifest variables that contribute to each of the latent constructs, are presented in Figure 3. This SEM tested the first hypothesized model without a direct path between stable internal resources (SIRs) and PTSD and without a direct path between work support and PTSD (i.e., omitting hypothesis 2). Standardized beta weights were obtained to estimate path coefficients. Despite many significant path coefficients, the tests of overall model fit indicate that the model is not adequate. The goodness of fit index is less than the standard of 0.95 (gfi = 0.949). Bentler and Bonett's normed fit index is less than the standard of 0.90 (nfi = 0.86), and one of Bollen's model fit indices is less then the standard of 0.90 (Rho1 = 0.79, Delta2 = 0.91). Finally, the Chi-square test is significant $X^2(45) = 102.69$, $p < .001$.

Prior to considering the causal path coefficients obtained in the SEM analysis, the structure of the latent variables must be confirmed. This requires that all of the manifest variables that are components of a latent variable have high and statistically significant loadings from the latent construct. In order to maintain the integrity of the model, it is also required that in the raw form one manifest variable on each latent variable have a loading of 1.0, although the standardized loadings differ. For SIRs the one manifest variable that was held constant was MLSC; and for

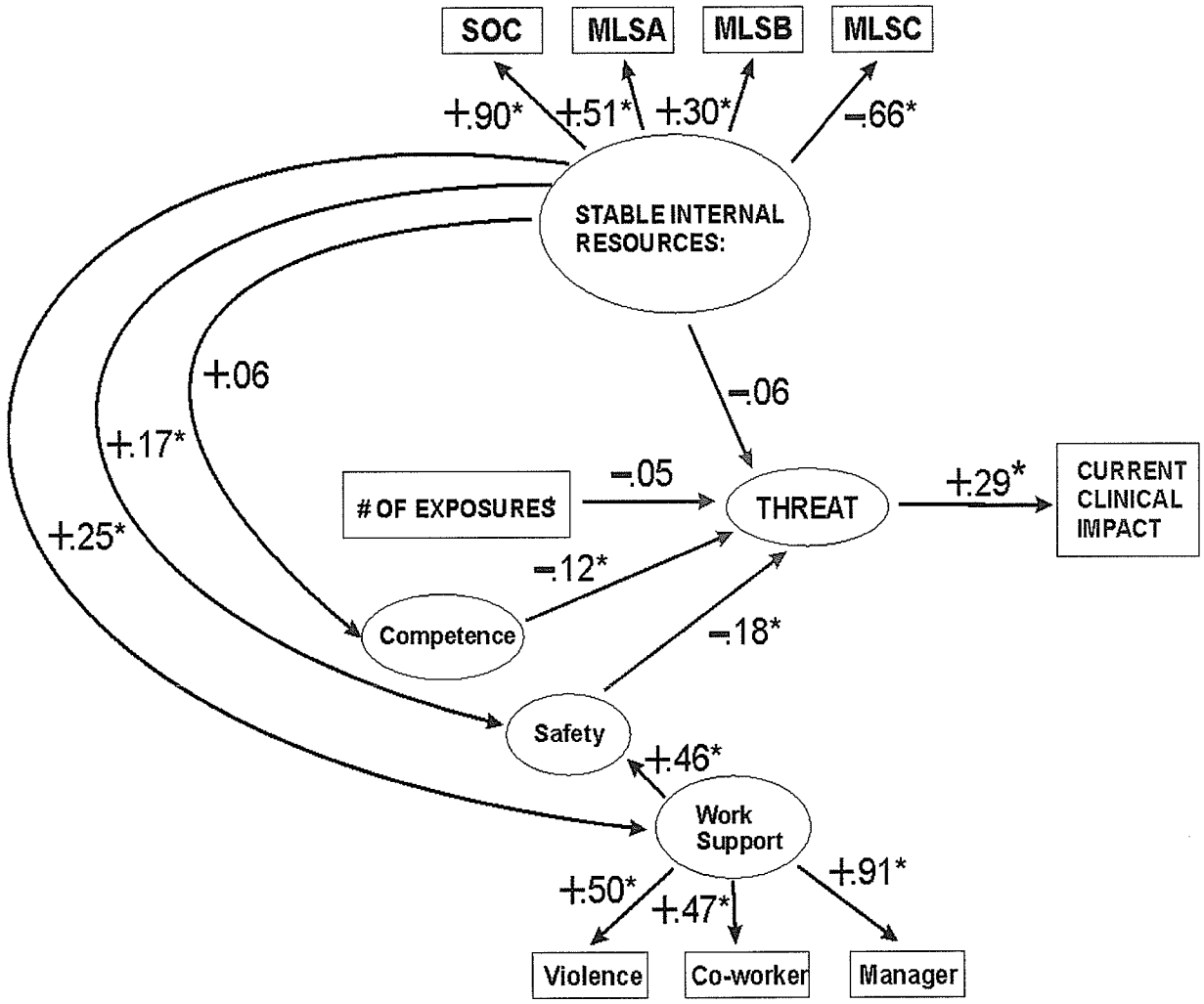

Figure 3. Initial Structural Equation Model

work support the one manifest variable was manager support.

For the SIR latent construct, there were four proposed manifest variables: Sense of Coherence (SOC), My Life Scale (MLSA) the cognitive or problem-solving factor, My Life Scale (MLSB) the interpersonal/emotional factor, and My Life Scale (MLSC) the competency/ability factor. As expected, all four had relatively high significant loadings from the latent variable, with the lowest being that for MLSB (.30, $t(274) = 3.86$, $p < .001$). SOC had the highest loading (.90, $t(274) = 8.06$, $p < .001$), and MLSA (.51, $t(274) = 7.80$, $p < .001$, and MLSC (.66) had intermediate loadings.

For the work support latent construct, there were three proposed manifest variables: work support for the reporting of workplace violence, co-worker support, and manager support. As expected, all three manifest variables had relatively high significant loadings from the latent variable, with the lowest being that for co-worker support (.47, $t(274) = 5.97$, $p < .001$). Support for the reporting of workplace violence had a loading of .50, $t(274) = 6.26$, $p < .001$, and for manager support the loading was .91.

Hypotheses

Hypothesis 1. It was hypothesized that perception of threat would have a direct positive relationship with PTSD symptoms. Unlike traditional studies that have focused on the direct effects of violence (e.g., Budd et al., 1996; O'Brien-Pallas et al., 1994; Schneider, Swan, & Fitzgerald, 1997), but consistent with recent empirical efforts to

investigate the potential role of fear on outcome variables (e.g., Barling et al., 2000; Rogers & Kelloway, 1997), it was expected that it is the threat of workplace violence that directly predicts clinical outcome. In other words, it was maintained that nurses who continue to report high threat are likely to report more PTSD symptomatology.

The structural equation model conducted on the data treated PTSD scores as the criterion variable. For the initial model, the single hypothesized predictor of PTSD scores was perception of threat for the most distressing event identified in the Exposure Scale. PTSD scores were log transformed in order to more accurately approximate the normal distribution assumed in linear regression. As hypothesized, perception of threat for the most distressing event was a significant positive predictor of PTSD symptoms, $t(274) = 5.33$, $p < .001$ accounting for 8.3% of the variance. Thus, support for this hypothesis was confirmed.

Hypothesis 3. It was expected that competence would have a direct negative relationship with perception of threat, and that safety would have a negative relationship with perception of threat. The preliminary analyses determined which, if any, of the competence variables were significant predictors of threat. These included self perceived competence in dealing with the most distressful event (MDE), self perceived competence as it relates to the job in general, and perception of others' view of the respondents' competence. The best predictor of threat and

the measure providing the best overall model was self perceived competence in dealing with the MDE.

Perception of competence as it related to the MDE and perception of safety were both significant predictors of threat, $t(274) = -2.13$, $p < .05$, and $t(274) = -3.08$, $p < .01$, respectively. Both were negatively related to threat, indicating that higher levels of perceived competence and safety led to lower estimates of the seriousness of the MDE. This model accounted for 5.9% of the variance in threat. Therefore, support for this hypothesis was found.

Hypothesis 4. It was hypothesized that there would be an effect of stable internal resources (SIRs) on perception of threat and an effect of the number of exposures on perception of threat. In this analysis, the prediction of a causal role for SIRs was not found, t (274) = 0.91, ns. The next analysis was to determine which, if any, of the event frequency variables predicted threat. None of the four variables (sexual, physical, verbal, other) were significant predictors of threat. The exposure variable included in the model was the number of exposures to the most distressing event (MDE), which also was not significant, t (274) = 0.90, ns.

Hypothesis 5. It was hypothesized that work support would be positively related to perception of safety. The path from work support (support for the reporting of workplace violence, manager support, co-worker support) to safety was significant (.46), t (274) = 5.92, $p < .001$. This

means that work support, including for the reporting of violence, influences perception of safety. One possible explanation for the significant association between work support and safety is that nurses who are not supported in their workplace may perceive events as more unsafe. This is critical given that nurses who work in clients' homes often work alone, and without the safety precautions afforded in other nursing work environments.

Hypothesis 6. It was expected that SIRs would emerge as a significant, although indirect, predictor of perception of threat through three paths: One path through competence, another pathway through perception of safety, and an indirect path on safety through support. SIRs positively predicted perception of safety, t (274) = +2.90, $p < .01$, and work support, t (274) = +3.60, $p < .001$. Greater SIRs and higher levels of work support led to higher levels of perception of safety. SIRs was not a significant predictor of perception of competence for the most distressing event, t (274) = 0.89, ns. Thus, the prediction of the path of SIRs through perception of safety, and the indirect path on safety through support were supported; however, the path through competence was not supported.

To summarize, threat emerged as a critical explanatory variable for PTSD (+.29). Perception of competence (-.12) and perception of safety (-.18) explained the variability in threat. The path between SIRs and threat was not significant. Surprisingly, there were also no significant

effects of exposure on threat. As predicted, the SIR latent variable was found to be related to work support (+.25), which, as previously stated, was related to perception of safety (+.46). As expected, SIR was indirectly associated to clinical outcome, through work support and perception of safety, and the association with threat. For all endogenous variables (i.e., those that are predicted by other manifest or latent variables) the proportion of variance accounted for is presented in Table 10.

Despite the numerous significant paths found in this analysis, the fit of the hypothesized model was poor. LaGrange multiplier tests indicated that a single additional path from SIRs to PTSD, and a path from work support to PTSD, as well as the specification of several covariance parameters between error terms for manifest variables, would improve the model fit. The inclusion of covariances between manifest variables error terms indicates that the errors were not independent, which is not surprising. In particular, error covariances were indicated for the manifest variables loading on the same latent variable (e.g., SOC and MLSA, SOC and MLSB, Work Support Violence and Work Support Co-Worker).

Second Structural Equation Model

In the initial structural equation analysis, the only predictor of clinical outcome was threat. In this second structural equation model (SEM), additional paths were added from stable internal resources (SIRs) to clinical outcome

Table 10

Proportion of Variance Accounted for Endogenous Variables (Initial SEM Model)

Variable	R-Square
Clinical Outcome	0.0825
Threat	0.0592
SIR manifest variables	
Sense of Coherence	0.8159
Resilience	
Competency/ability	0.4365
Cognitive/problem-solving	0.2587
Interpersonal/emotional	0.0927
Safety	0.2775
Competence	0.0031
Workplace support manifest variables	
for reporting violence	0.2515
Co-worker	0.2205
Manager	0.8303
Latent workplace support construct	0.0605

and from work support to clinical outcome. The results of this SEM are presented in Figure 4. Standardized beta weights were obtained to estimate path coefficients. The latent variable structure remained consistent with the first model, with all loadings to the respective manifest variables fairly high, and significant. The tests of overall model fit are vastly improved over the initial model. The goodness of fit index is greater than the standard of .95 (gfi = .98). Bentler and Bonett's normed fit index is greater than the standard of .90 (nfi= .94). Both of Bollen's model fit indices are greater than the standard of .90 (Rho1 = .91, Delta2 = .99). The Chi-square for this model is not significant $X^2(42) = 42.70$, ns. The hypotheses are presented again with the results of this SEM analysis.

Hypothesis 1. Even with the addition of the direct paths from SIRs to PTSD, and from work support to PTSD, threat was still a significant correlate of PTSD symptoms, $t(274) = 4.77$, $p < .001$.

Hypothesis 2. As expected based on the output of the initial analysis, SIR was also a significant correlate of clinical impact $t(274) = 6.50$, $p < .001$, with high levels on this variable related to lower levels of PTSD symptoms. The relationship between SIR and PTSD was much stronger than the relationship of threat and PTSD. Workplace support was also a significant predictor of PTSD, $t(274) = 2.27$, $p < .05$.

Hypothesis 3. The negative relationship between perception of threat and safety remained significant, $t(274)$

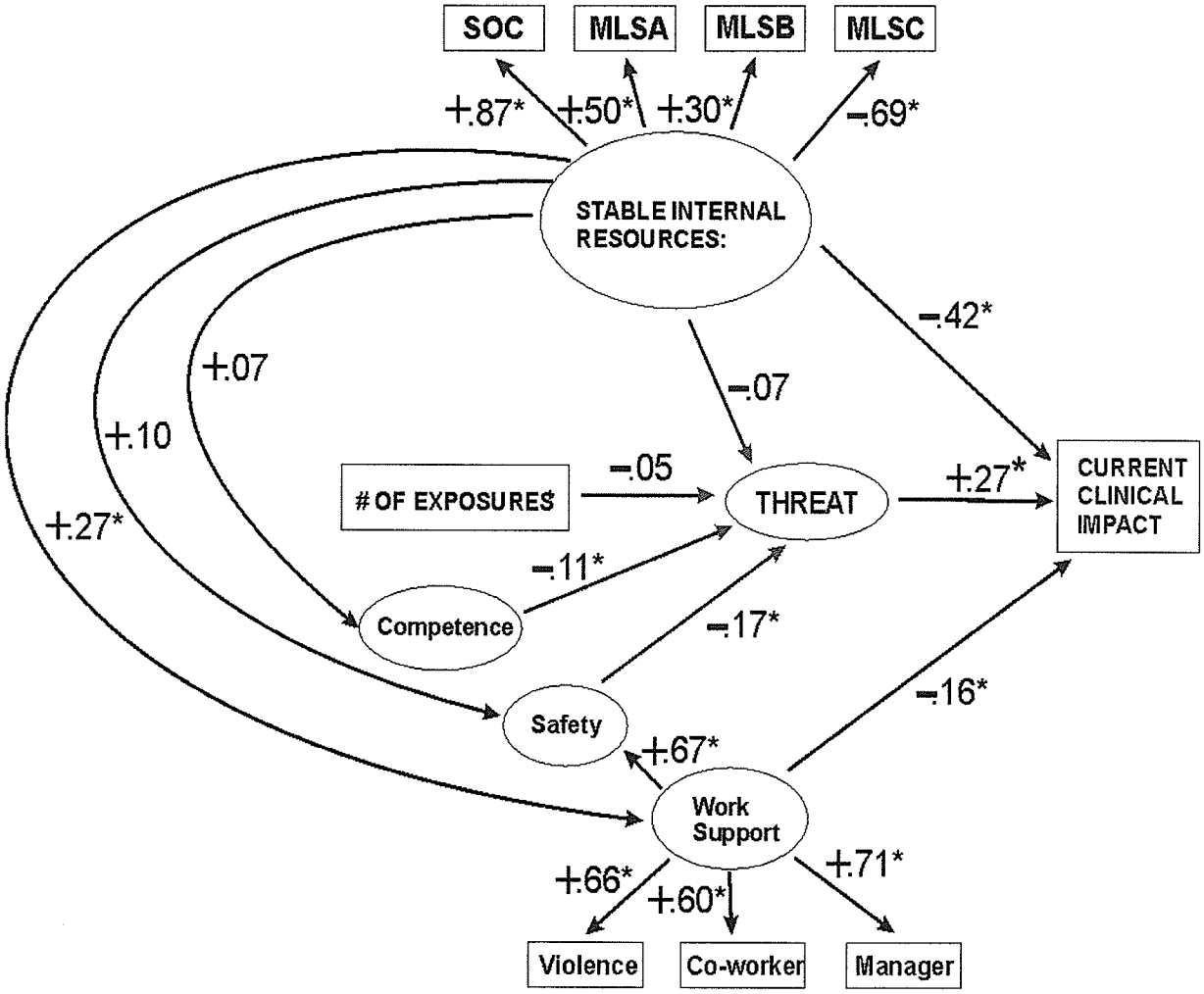

Figure 4. Second Structural Equation Model

= -3.01, $p < .01$, as did the negative relationship between perception of threat and competence, $t(274) = -2.10$, $p < .05$.

Hypothesis 4. As in the initial model, the expectation of a relationship between SIR and threat was not found, $t(274) = 1.05$, ns. The number of exposures to the most distressing event (MDE) also remained not significant, $t(274) = -0.84$, ns.

Hypothesis 5. The positive relationship between work support and safety became even stronger in this modified SEM analysis, (.57), $t(274) = 3.48$, $p < .001$.

Hypothesis 6. In evaluating the indirect impact of SIRs on threat for this SEM, there is a trend for SIRs as a significant positive predictor of perception of safety, $t(274) = +1.71$, $p < .10$, and for SIRs to remain a significant predictor of work support, $t(274) = +3.0$, $p < .001$. Again SIRs was not a significant predictor of perception of competence for the most distressing event, $t(274) = 0.07$, ns. This means that although there is no direct effect of SIRs on perception of threat, there is some effect of SIRs mediated through safety and work support.

The proportion of variance accounted for in each of the endogenous variables is presented in Table 11. The greatest increase can be seen in the ultimate outcome, PTSD, which went from .082 to .246.

Analysis of Low, Moderate, and High Stable Internal Resource

After completing the second Structural Equation Model (SEM), the SIR scores for each nurse included in the

Table 11

Proportion of Variance Accounted for Endogenous Variables (Second SEM Model)

Variable	R-Square
Clinical Outcome	0.2458
Threat	0.0602
SIR manifest variables	
Sense of Coherence	0.7581
Resilience	
Competency/ability	0.4677
Cognitive/problem-solving	0.2627
Interpersonal/emotional	0.0883
Safety	0.3723
Competence	0.0045
Workplace support manifest variables	
for reporting violence	0.3628
Co-worker	0.3339
Manager	0.5819
Latent workplace support construct	0.0924

analysis were calculated and saved. The distribution of the SIR variable was analysed and nurses were split into three groups depending on their SIR scores (M = 0.00, SD = 1.01). Nurses with scores that were more than one standard deviation below the mean SIR score were deemed low in SIR. Nurses with scores that were more than one standard deviation above the mean SIR score were deemed high in SIR. Those nurses with scores that were intermediate were deemed as having average SIR. Table 12 presents the frequencies of demographic variable groupings by these SIR groups. Only those nurses who answered all questions could be included in this analysis. Approximately half of the nurses (across the three nursing groups) answered all questions. Chi-square tests of association were run between SIR groups and the demographic variables. None were significant, indicating that the three SIR groups were similar in terms of demographics. However, as Table 12 shows, nurses in the low SIR group had less education than the other groups.

Table 13 presents the means and standard deviations of the SIR groups on a number of perception and event variables. One-way analyses of variance were run on these variables comparing the three SIR groups. In this case, as expected, there were several significant effects of SIR groups. Nurses reporting low and moderate SIR scores reported more safety concerns than those reporting high SIR scores. Similarly, nurses reporting low and moderate SIR scores reported lower scores on workplace support than

Table 12

Associations Between Demographic Variables and SIR

	High SIR		Moderate SIR		Low SIR	
	Freq	%	Freq	%	Freq	%
Groups						
LPN	11	18.6	31	52.5	17	28.8
RN	37	17.3	145	67.8	32	15.0
RPN	6	22.2	16	59.3	5	18.5
Years (Nursing)						
Less than 1 yr	1	50.0	1	50.0	---	---
1-5 years	1	50.0	14	70.0	5	25.0
6-10 years	3	7.5	28	70.0	9	22.5
11-15 years	6	13.3	30	66.7	9	20.0
16-20 years	10	25.0	22	55.0	8	20.0
> 20 years	34	21.3	100	62.5	26	16.3
Years (home care)						
< than 1 yr	2	20.0	7	70.0	1	10.0
1-4 years	12	13.2	61	67.0	18	19.8
5-7 years	11	19.0	35	60.3	12	20.7
8-10 years	15	32.6	24	52.2	7	15.2
> 10 years	15	14.7	68	66.7	19	18.6

Table 12

Associations Between Demographic Variables and SIR, Cont.

	High SIR		Moderate SIR		Low SIR	
	Freq	%	Freq	%	Freq	%
Job Status						
Permanent (F/T)	20	15.5	85	65.9	24	18.6
Permanent (P/T)	24	18.9	79	62.2	24	18.9
Term Position	---	---	5	62.5	3	37.5
Contract	1	50.0	1	50.0	---	---
Agency	1	25.0	2	50.0	1	25.0
Age						
< 25 yrs.	0	---	3	100.0	0	---
25-35 yrs.	4	7.8	36	70.6	11	21.6
36-46 yrs.	19	19.4	61	62.2	18	18.4
> 46 yrs.	32	20.7	95	61.3	28	18.1
Education						
Certificate	6	10.9	17	8.7	10	17.5
Diploma	41	74.6	126	64.6	38	66.7
Baccalaureate	8	14.6	50	25.6	8	14.0
Other	---	---	2	1.0	1	1.8

Table 13

Mean Scores of Perception and Event Variables by SIR Groups

	High SIR		Moderate SIR		Low SIR	
	Mean	SD	Mean	SD	Mean	SD
Perception of Safety[a]	5.59	1.31	5.16	1.09	4.79	1.10
Percep. of Work Support						
Violence	.06	.13	.08	.15	.12	.18
Co-worker	2.52	1.80	2.62	1.58	3.09	1.76
Manager[a]	2.74	1.32	3.29	1.50	3.74	1.48
Perception of Threat						
Then	4.40	1.84	4.65	1.81	5.02	1.71
Now	2.64	2.05	3.25	1.95	3.74	2.04
Overall	3.52	1.76	3.93	1.64	4.32	1.50
Competence						
Then	4.95	1.90	4.49	1.93	4.30	2.06
Now	5.13	2.16	4.98	1.96	4.72	1.98
Overall	5.04	1.96	4.72	1.75	4.51	1.76
Others' percep.[abc]	21.24	1.70	19.61	3.41	18.02	3.75
Self percep.[abc]	11.16	3.78	12.66	3.83	14.18	2.89
Workplace violence						
Sexual assault	.65	1.23	1.84	5.22	2.37	6.19
Physical assault	.22	1.35	.07	.42	.32	1.27
Verbal assault	3.44	6.21	4.77	7.46	4.26	7.45
PTSD[ac]	24.13	18.15	28.05	15.26	38.30	19.84

a High is significantly different from Low.
b High is significantly different from Moderate.
c Moderate is significantly different from Low.
Significance level: $p < .05$

respondents in the high stable internal resource (SIR) group. These findings provide evidence that high SIR is strongly related to both lower reported safety concerns and higher workplace support. This pattern is similar to what Gottlieb (1998) found in his study among single mothers of children with disabilities, in which more stressful life events were reported among the low to moderate sense of coherence (SOC) groups, compared to the high SOC group. In terms of PTSD cases, in the low SIR group (n = 22/56; 39.3%) were identified as PTSD cases, of the moderate SIR group (n = 12/186; 6.5%) met criteria for PTSD, and of the high SIR group (n = 3/53; 3.8%) met criteria for PTSD. One possible explanation for why some, albeit few, nurses in the high SIR group met PTSD cases may be because some of the events these nurses were exposed to were very serious events (i.e., unexpected death of a co-worker, possible/actual contact with infectious body fluids (e.g., Hepatitis B, sexual assaults, HIV).

Chapter V: Discussion

There is a large body of empirical evidence lending support to a shift in theory, research, and practice, from the predominant focus of pathology and vulnerability to one which provides for the inclusion of stable internal resources (SIRs) seen in individuals who thrive in the aftermath of trauma. This new focus is largely due to the common finding that the development of PTSD is not an inevitable consequence of exposure to trauma, and that only a subset of exposed individuals actually develop PTSD (Shalev et al., 2004; Yehuda, 2004). In recent years, scholars have voiced increasing concern about the neglect of SIRs (e.g., resilience, sense of coherence) in research protocols, except when referring to the absence of symptoms. According to this view, incorporation of these types of positive mental health indicators counterbalances the almost exclusive emphasis on PTSD symptoms and other psychological consequences of trauma that is seen in mainstream empirical research (Ai & Park, 2005; Peterson & Seligman, 2003; Seligman & Csikszentmihalyi, 2000). This is the first study investigating the relationship between SIRs (sense of coherence, resilience) and PTSD symptoms among a nursing group, which is surprising since there has been a surge of government documents and studies reporting high incidence and prevalence rates of exposure and PTSD among nursing groups. In addition, empirical works regarding nurses' practice environments (i.e., workplace support, perception

of how safety concerns are dealt with by management) have led to advances in our understanding of workplace violence and presented new challenges requiring a wider empirical investigative net.

The current research provides a measure of workplace violence among nurses who work in clients' homes, actions taken by management to address workplace violence, nurses' perceptions of workplace support and safety concerns, impact of stable internal resources (SIRs), and PTSD symptoms. After reviewing the descriptive results, and the implications of the nurses' working conditions, the discussion will focus on the results of the Structural Equation Models (SEMs), with a particular emphasis on the direct/or indirect role of SIR on PTSD symptoms and its relationship with perception of threat. Thoughts pertinent to treatment implications will be offered, followed by a discussion of this study's limitations, and concluding with new directions for future research.

Investigation of the distribution of the types of events experienced in the workplace revealed that one-quarter (24.9%) of the nurses indicated that they had experienced physical threat, nearly half (42.0%) had experienced verbal abuse/threat, and approximately one-quarter (29.9%) reported experiencing sexual assault. These results are similar to the physical assault (29%) and verbal assault (44%) findings reported in the 2005 National Survey (Statistics Canada et al., 2006). Although clients/family

members were the perpetrators of the large majority of workplace violence incidences, co-workers were also responsible for some incidences, especially verbal abuse/threat and verbal sexual harassment. This finding is similar to results reported in other studies (Hesketh et al., 2002; Statistics Canada et al., 2006).

The current prevalence rate of PTSD symptoms among this sample of nurses was 12%. Reported prevalence rates for the general population have varied with some researchers reporting 1.7% and 0.6% at 4 and 6 months after 9/11 (Galea et al., 2002), and others reporting higher rates (e.g., Breslau, Davis, & Andreski, 1991; Breslau et al., 1998; Kessler et al., 1995; Norris, 1992; Resnick et al., 1993). Notably, however, some researchers use a wider range of traumatic events which inflates rates, such as was the case in the 1996 Detroit Area Survey (Breslau et al., 1998), in which bereavement was included. The prevalence rate of PTSD in this study is comparable to current prevalence rates of PTSD symptoms among other groups at high risk of being repeatedly exposed to trauma, including firefighters (16%, 18.2%; McFarlane & Papay, 1992; Wagner et al., 1998), and veterans (15%; Kulka et al., 1990), but was notably lower than reported rates among other nursing groups (Corneil & Kirwan, 1994; Lavack-Pambrun, 2002; Powell, 1996). Although different methodologies, time frames used, and definitions across studies, render any comparisons of prevalence rates across studies difficult, it is clear that this group of

nurses is at similar risk of being repeatedly exposed to workplace trauma and of developing PTSD as other nursing groups (Carroll, 1999; Corneil & Kirwan, 1994; Duncan et al., 2001; Federation des Infirmieres du Quebec, 1995; Lavack-Pambrun, 2002; Liss & McCaskell, 1994; Powell, 1996) and other emergency groups (Barling et al., 2000; Corneil, 1993).

Consistent with recent survey reports (Federation des Infirmieres du Quebec, 1995; Statistics Canada et al., 2006), nurses' safety perceptions significantly influenced the impact of threat on PTSD symptomatology. Over half (63%) of the nurses reported carrying a cell phone for protection, and three quarters (76.5%) reported that they did not enter a client's home if they perceived safety concerns. The most widely reported employer initiative in this regard was the provision of education on workplace violence, implementation of a policy that states that nurses are not required to provide care to clients when their personal safety is at risk, and the least reported initiative was the provision of training on managing high risk situations. This latter initiative has broad practical implications, and suggests that whatever written safety policy is in place may translate to a lack of practice utilization.

In this investigation, two models were tested that have theoretical implications regarding three questions pertinent to the development of PTSD: (a) The role of Criterion A (A1 and A2) on PTSD; (b) the role of stable internal resources

(SIRs) on PTSD, whether direct or indirect, and (c) the role of workplace support on PTSD, whether direct or indirect.

First, the traditional view that the qualifying objective event (A1) is the necessary and most important predictor of PTSD symptoms was challenged by the non-significant relationship between all measures of event type and number of exposures with perception of threat (A2). Consistent with other studies, data from this study lend credence to the traditional view that the subjective emotional response to trauma (A2) is necessary for PTSD symptoms to occur, and an important predictor of PTSD symptoms (Ballenger et al., 2000; Barling et al., 2000; Brewin, Andrews, & Rose, 2000; Gershon et al., 2002; Rogers & Kelloway, 1997; Sommer & Ehlert, 2004). Additionally, both perception of competence (as it relates to the most distressful event) and perception of safety were important in explaining the variability in threat. These findings are in line with those reported by other researchers, who conclude that the stimulus elements (of the event) associated with the level of danger and response elements (of the event) associated with negative self-evaluations regarding competency characterize the individual who develops PTSD symptoms (Ballenger et al., 2000; Ehlers & Clark, 2000; Foa, Davidson et al., 1999; Foa, Ehlers et al., 1999; Hembree & Foa, 2000; Purdon, 2001). Clearly, individuals with low self-perceived competence, and those who perceive the trauma as dangerous, would report high

levels of subjective emotional response (A2) to the event.

Second, the potential direct role of stable internal resources (SIR) on PTSD was investigated in the second structural equation model (SEM), SIR was strongly correlated with PTSD symptoms ($r = -0.40$). Studies that have investigated the potential influence of personality have, for the most part, emphasized the link between personality vulnerability factors, such as neuroticism, antisocial, and borderline traits with PTSD symptoms (Breslau et al., 1995; Lauterbach & Vrana, 2001; Poulton & Andrews, 1992). Although the notion that SIRs may have a moderating effect on detrimental outcome has been implicated in the literature (Cooper & Payne, 1991; Semmer, 1996), the results of this study are in accordance with the growing body of findings that suggest that SIRs have a direct effect on positive and detrimental health outcomes, including PTSD symptoms (Ai & Park, 2005; Frommberger et al., 1999; Kravetz, Drory, & Florian, 1993; Larsson et al., 2000; Levert et al., 2000b; Schnyder et al., 2001; Schnyder et al., 2000; Sommer & Ehlert, 2004). This certainly challenges the strict criterion A - PTSD hypothesis.

One explanation for this finding in the current study may be that individuals with strong SIRs may be less prone to psychological health problems regardless of trauma exposure and that individuals with weak SIRs may be predisposed to experiencing the cognitive, emotional, and behaviour responses associated with PTSD in the event of

exposure to a potentially traumatic incident. Another explanation that has been put forth in the literature is that because both resilience and sense of coherence capture the appraisal of the event, and the meaning attributed to the event, these constructs may serve as a 'healthy marker' against PTSD (Ehlers, Mayou, & Bryant, 1998; Ehlers & Steil, 1995).

Despite the strong direct negative relationship between stable internal resources (SIRs) and PTSD, no relationship was found between SIR and threat. A plausible explanation that may account for the lack of relationship is the cross-sectional nature of the threat measure. Arguably, a longitudinal study might have permitted a relationship to be detected between SIR and threat. However, a longitudinal study conducted by Coe, Romeis, and Hall (1998), as well as another study that used a multivariate correlational design (Baker, 1998) did not find the relationship between SOC and a significant life event to be statistically significant. This lends support to the notion that the traumatic event is necessary but not sufficient to explain who develops PTSD, and highlights the complexity of the process involved in teasing apart how various factors can work together (Udwin, Boyle, Yule, Bolton, & O'Ryan, 2000).

Third, the influence of workplace support on PTSD, whether direct or indirect, was also explored. In this study, findings from both structural equation models (SEMs) support the traditional support buffering effect hypothesis.

In the first SEM, evidence was found indicating that workplace support was positively related to perception of safety, which in turn was related to lower threat. Empirical support for this finding was found in other studies that link workplace support to perceived safety and reduced psychological impact of workplace incidents on PTSD or other health outcomes (Barling et al., 2000; Corneil & Kirwan, 1994). The significant path from threat to PTSD would suggest an indirect, and somewhat limited, role for workplace support in buffering the impact of trauma on PTSD. Some empirical evidence suggests that the moderating effect of support may be confounded with personality (Bolger & Eckenrode, 1991). However, in this study, SIR was statistically controlled for, so the buffering effect of workplace support is apparently not confounded with personality.

The second SEM tested a direct impact of workplace support and lent even greater credence to the buffering hypothesis. Even when direct paths for SIRs and threat were included in the model, the workplace support construct was a significant predictor of PTSD. This finding is not to be interpreted that support (workplace support) is not related to SIRs. In fact, SIRs and workplace support were significantly related in both SEM models. When nurses are faced with workplace violence, those with strong SIRs may have the capacity to seek out supports with the aim of growing from the experience, while nurses with weak stable

internal resources (SIRs) may not seek out supports, and if they do, the purpose may not be to grow and learn from the experience. Thus, although results of this study certainly show a place for workplace support, SIRs were found to be the main contributor to PTSD symptomatology.

Three groups of Stable Internal Resources. Nurses in the low and moderate SIR groups reported higher threat scores than the high SIR group. One explanation for this finding is the possibility of a method effect. Given that nurses in the high SIR group may be less inclined to view workplace violence as threatening than the other two groups they may have been more likely to under-report events. This may not be a tenable conclusion given the results of the current study, however, in which the perception of threat of the most traumatic event was not related to SIRs. The finding of the current study would indicate that any impact is indirect, through perception of safety and perception of support. Further research that is focused on the relationship between SIRs and perceived threat may be able to more accurately assess the impact of SIRs on threat.

In agreement with the findings of the Structural Equation Models, the nurses in the high SIR group reported more workplace support and less safety concerns than nurses with low SIR scores. One explanation for this finding is that these types of supports are often initiated by personal effort. This observation is reasonable considering that nurses with strong SIRs likely know how to select the

particular coping strategy that seems most appropriate to manage trauma, which includes having the ability to seek out appropriate supports when required. It is reasonable to assume that when there is a lack of workplace support, nurses with weak SIRs would perceive high safety concerns, which in turn may influence perception of threat. This finding is in keeping with Antonovsky's theoretical claims (Antonovsky, 1998) regarding the formation of the sense of coherence (SOC) construct. He maintains that throughout development (up until about age 30) the individual's perception of social supports strengthens their SOC, which in turn enables the individual to mobilize social supports to manage future threatening situations in adult life.

The available evidence from this study presents new challenges that inform a broader scope than the previous almost exclusive emphasis on pathology. Simplistic conceptualizations of the development of PTSD obfuscate the importance of investigating SIRs through the same empirical lens as recovery patterns, and patterns evidenced in those who develop this disorder. Clearly, findings from this investigation have important implications for understanding how personality plays a unique role in influencing PTSD symptoms. It is generally assumed that personality vulnerability predisposes the individual to experience detrimental outcomes when faced with threatening situations. This study supports the view that stable internal resources (SIRs) do not simply increase the likelihood that PTSD

symptoms will occur in individuals with weak SIRs who are exposed to workplace violence. Rather, it suggests that SIRs will exert an influence by increasing the likelihood that when trauma occurs an individual with weak SIRs will be challenged in his/her ability to manage the threat efficiently. Future research investigating the potential influence of SIRs will contribute to a better understanding of trauma responses and predictors of PTSD symptoms among professionals who experience workplace violence.

Implications for Treatment

In any comprehensive trauma theory there are two clearly articulated assumptions. The first pertains to an understanding of the individual's problem (e.g., development of trauma reactions, onset of PTSD) while the second relates to an understanding of the task and method of therapy. The latter assumption is viewed as flowing logically from the first (Piers, 1998). While most clinicians have given lip service to the intimate relationship between theory and clinical activity, some creative contributions have offered reflective applicability of concepts that have broad treatment implications.

The results of this study draw attention to three such important treatment considerations: (a) Limitations of mainstream treatment approaches, (b) importance of differentiating subgroups of individuals who do not experience PTSD symptoms from those who are recovering or experiencing high levels of symptoms, and (c) the

recognition of stable internal resources (SIRs) in treatment protocols and organizational intervention strategies.

Due to the field's long-standing focus on pathology, clinicians have focused on providing assistance to individuals experiencing acute trauma reactions, and those meeting PTSD criteria, with the aim of un-doing symptomatology. Clinicians, for the most part, are trained in the area of deficits in functioning (psychopathology) and are oriented towards understanding the manner in which symptoms unfold (pathogenesis). The tenacity of that view has shaped clinicians' *de facto* mandate to repair psychological problems (psychotherapy). Early interventions are typically aimed at addressing variables during and post-trauma. This focus prompted a series of studies investigating various risk factors on the development of PTSD. For instance, in a meta-analysis of risk factors, Brewin et al. (2000) found that risk factors such as event severity and lack of social support had the largest effect size. Interestingly, this study found perception of threat and perception of support to be strong correlates of PTSD.

There has been a surge of documented therapeutic tools available to trauma clinicians, such as pharmacologic approaches, various cognitive behavioural protocols, psychodynamic treatments, and critical incident group debriefings. Pharmacologic approaches on the complex workings between psychological trauma and biological brain functioning have been amply documented in the literature.

Given the widespread recognition that neurophysiological changes (e.g., lower cortisol levels, increased activation of the sympathetic nervous system, dysregulation of the noradrenergic and serotonergic pathways) are mediating mechanisms, and the subjective meaning attributed to the traumatic event initiates biological changes (Nutt, 2000; Tucker & Trautman, 2000; Yehuda, 2000), clinicians might benefit from incorporating questions of meaning into treatment plans. Physiological research in this area has served as an important springboard for cognitive-behavioural treatments (CBTs), which emphasize the emotional engagement of the trauma and reconstruction of distorted cognitions. There has been ample evidence showing the efficacy of CBTs for assisting traumatized individuals, especially rape victims (DeRubeis & Crits-Christoph, 1998; Gilboa-Schectman & Foa, 2001; Resnick et al., 1995). However, CBT studies and other types of exposure therapies among soldiers (Keane, Fairbank, & Caddell, 1989; Pitman, Orr, & Altman, 1996) have yielded equivocal results.

Embedded in psychoanalytic perspectives is the position that early trauma interferes with normal development and that defense processes, that serve to protect against/ward off from potential future threat, are responsible for psychological functioning (Garfield & Leveroni, 2000; Horowitz, 1986, 1992; Klein, 1976; Kohut, 1984; Krystal, 1985; Ulman & Brothers, 1988; Winnicott, 1975). According to this view, the recovering and reworking of trauma memories

becomes the central focus of treatment that informs therapeutic change (Herman, 1992; Horowitz, 1992; Janoff-Bulman, 1992; van der Kolk, 1994).

In comparison with treatment interventions for trauma victims, trauma intervention programs for emergency personnel, who are directly or indirectly exposed to trauma, are surprisingly new. Due to increasing empirical evidence, and the surge of international violence over recent years (i.e., 9/11), that have found emergency personnel to be at increased risk of developing PTSD symptoms, organizations have been presented with new financial demands that have led to a quest to provide more timely and appropriate services. The most widely used group intervention for emergency personnel, critical incident stress debriefing (CISD), was developed by Dr. Jeffrey Mitchell (Mitchell & Everly, 2000) to mitigate work-related critical incidents and prevent the development of PTSD symptoms. Although the CISD process was intended to be used as a brief group intervention for emergency response personnel, it has been broadly applied across different populations over the years, which has resulted in much controversy. Although its popularity is evidenced in its widespread use (Larsson & Osterdahl, 1996), some critics maintain that conducting debriefings for every exposed/potentially traumatized individual, as has become customary over the years, is ineffective (Deahl, Gillham, Thomas, Searle, & Srinivasan, 1994; Mayou, Ehlers, & Hobbs, 2000; Rose, Brewin, Andrews, & Kirk, 1999). Litz et al.

(2002) do not discount the potential usefulness of CISD services, but argue for the necessity of screening protocols for determining at-risk individuals.

Given the growing literature on personality, it is surprising that intervention protocols have not considered questions about personality, that are central to a better understanding of how the individual successfully copes following trauma. Implicit in traditional therapeutic approaches is an inattention to the workings of the adult personality which reveals continuous modes of functioning, such as how the individual thinks about/avoids thinking about, feels/emotionally withdraws, and responds to his or her current subjective experience of the past. Although psychodynamic perspectives recognize how the individual takes up their past in the present, the emphasis remains on what does not work, without hypothesizing about what works for those who appear unscathed after trauma. Findings of this study suggest, however, that personality has wide applicability in the treatment process.

The second important treatment implication derived from this study is concerned with the lack of attention in the literature that differentiates individuals with strong stable internal resources (SIRs) from those who are recovering from trauma or experiencing high levels of symptoms. According to Bonanno (2004), failure on the part of trauma theorists and researchers to differentiate subgroups of individuals who do not show any PTSD symptoms

may explain why trauma interventions may be effective for only a subset of individuals (i.e., individuals who are either recovering or experiencing high levels of PTSD symptoms), and inappropriate, or deleterious, for others. Given that most of what is currently known about trauma and PTSD comes from individuals who are experiencing trauma symptoms, clinicians may often make false assumptions about those who thrive when faced with adversity - viewing these resilient individuals as exceptionally rare individuals. It is timely that research has recently started to recognize that while some individuals do not recover from trauma and go on to develop PTSD, others experience acute reactions but eventually recover, and some show a remarkable capacity to thrive in the face of potentially traumatic events (Hytten & Hasle, 1989; Moran & Colless, 1995; Paton, 1994).

The third treatment implication resulting from this study's findings pertain to the importance of recognizing stable internal resources (SIRs) in clinical work and organizational intervention strategies. In this study, SIRs emerged as a central and guiding theoretical concept in its own right. With this perspective in mind, clinicians seeking to promote wellness outcomes would benefit by directing their efforts to understanding how individuals take up their past in the present. In other words, the contemporary here-and-now meaning attributed to the trauma is linked to organizing tendencies of personality which is arguably more clinically relevant. It is ironic that many clinicians give

insufficient attention to, and underestimate the role of stable internal resource (SIR) factors, even though appreciation of the dynamic workings of personality and character form the bedrock of clinical practice.

Clinicians often fail to recognize that efforts to repair or undo dysfunction may overshadow the importance of advancing formulations that aim to strengthen SIRs and wellness. This is not to say that reparative approaches have no usefulness. The dominant pathology orientation supports adaptation and positive growth. However, by focusing exclusively on what has gone wrong, there is sparse consideration, at best, for what has gone right. For instance, one way to assist individuals with weak SIRs may be to encourage them to trust their ability to build, and to access, healthy resources (internal, social supports), to explore resistances to healthy coping and to attributing meaning to the event, and to assist with accepting that the experience is worthy of emotional investment and an opportunity for personal growth. In the final analysis, a thorough understanding of personality informs clinicians about positive/negative defence mechanisms (e.g., projection, intellectualization, denial, undoing, humour), leads to clinical decisions that strengthen SIRs and the healthy use of resources, and offers a better explanation of treatment failures and successes.

Findings from this study have important organizational implications. For instance, services provided by the

organization that aim to strengthen stable internal resources (SIRs) may prevent post-trauma difficulties by differentiating those with weak SIRs from those who show the prototypical SOC/resilience trajectory. This raises three important questions. Given that organizations typically offer critical incident stress debriefings (CISDs)to exposed emergency personnel, would this intervention strategy be best served by incorporating aspects of the resilience and SOC constructs that are associated with intrapsychic strengths (i.e., meaningfulness, mindedness, perseverance in the face of adversity, interpersonal skills)? Although the stages outlined in the Mitchell CISD model (Mitchell & Everly, 2000) follow a strategic sequence, the focus is on the negative aspects of the critical incident. Debriefing protocols have the potential to strengthen the individual's SIRs. For instance, debriefers may encourage individuals to see positive outcomes in otherwise negative incidents, encourage the flexible use of a variety of healthy coping styles, explore how the individual makes sense of the trauma (comprehensibility), attributes meaning to the event (meaningfulness), and accesses the resources at their disposal to cope with the trauma (manageability).

Second, could organizations pre-screen individuals with weak SIRs out of dangerous occupations? The purpose of screening is to increase the likelihood of better job performance. This research does not address the relationship between SIRs and job performance. In fact, nowhere is job

performance assessed at all. To use any tool to screen applicants, it is imperative that there is evidence to support its use to predict job performance. More importantly, some individuals do experience growth following trauma, and working environments can also encourage human strengths. In other words, rather than focus on the individual as a passive vessel with no ability to be self-directed and self-organized, a better approach would be to encourage human strengths and to create a positive working environment. Arguably, SIRs can be taught, learned, and incorporated in one's life.

Third, can the concept of SIRs be used to strengthen the practice environment? Given that individuals with high SIRs tend to select the most appropriate coping strategies to manage stressful situations, nursing managers could strengthen SIRs by fostering a practice environment whereby nurses are encouraged to be masterful and efficacious. As an example, managers could assist in strengthening sense of coherence (SOC) by adopting a healthy practice environment according to the three components of this construct. Comprehensibility may be strengthened when nurses' roles and responsibilities are clear, and open communication channels are in place. Manageability may be enhanced when nurses are given an appropriate workload and have the necessary resources at their disposal to do their work. The meaningfulness component may also be enhanced by encouraging nurses to participate in valued decision making activities.

Given that SOC is suggested to be relatively stable by about age 30, (but shaped progressively throughout life) managers are in a good position to build strong SOC among both new recruits and more experienced nurses.

The finding that workplace support has a direct impact on PTSD has important implications for policy planners interested in understanding practice environments, and researchers interested in utilization. Administrative policies that clarify work objectives and responsibilities, administrative practices that reward nurses for good performance and encourage staff cohesiveness, and administrative procedures that ensure nurses are given adequate resources to perform clinical activities, show interest in nurses' personal welfare. However, it is short-sighted to conclude that simply having policies and procedures in place guarantee that nurses are being provided with appropriate and effective service. For instance, supervisors and managers committed to fostering a supportive practice environment may encourage nurses to exercise their own clinical judgement, give supportive recognition for a job well done, maintain open communication, and offer supportive assistance to nurses who have experienced workplace violence, whereas failure to provide a collaborative and supportive practice environment may be due to ineffective supervisory/management practices.

Ultimately, the delivery of high-quality programs that aim to reduce the impact of workplace violence and PTSD

rests with effective administrative and managerial practices that reinforce a supportive environment. There are ways that managers and administrators make it apparent that supports are available, and encourage their use; alternatively, there are ways to make it apparent that support systems are simply 'there' because they are required with no emphasis placed on their appropriate utilization. From a practical standpoint, however, policies and procedures that aim to halt workplace violence may well be myopic, because the problem may in fact be an organizational culture that tolerates violence. Therefore, when evaluating programs for effectiveness, it is important to not only assess whether services are available but to also assess for nurses' perception of workplace support (e.g., high cohesion among co-workers, management support). In other words, the way management and administrators develop a practice environment may have more to do with nurses' perception of support.

Further, policies that have been implemented to reduce the impact of workplace violence and PTSD may focus on enhancing workplace support, which as Antonovsky claims, is an important resource which leads to life experiences that reinforce a healthy way of seeing the world and adaptive coping following stressors. Adopting a practice environment approach that emphasizes healthy workplace support practices will likely strengthen SIRs among new recruits and experienced staff. Similarly, it is important that policies and procedures that have to do with continuing education

programs in the areas of threat management and safety procedures address the influence of workplace support on nurses personal well-being.

In summary, data from this research has implications for incorporating broader treatment protocols (rather than an almost exclusive focus on managing PTSD symptoms), includes clinical decisions that consider the influence of personality, recognizes the importance of differential outcome trajectories (e.g., subgroups of individuals not showing PTSD symptoms), adheres to the promotion of broadened perspectives and positive changes, and recognizes that organizations are in a good position to set the tone for how workplace violence is perceived and addressed.

Limitations of the Study

Some potential threats to the validity of the findings warrant mention. Findings from the cross-sectional data, presented here, are speculative, because it is not possible to conclusively determine the causality or temporal ordering of variables. The effects of variables on perception of threat and PTSD symptoms over time are best explored by using a longitudinal design. Notwithstanding such limits to answering questions about causal links, there was a clear relationship between stable internal resources (SIRs) and PTSD symptoms, and this pattern is also reported in longitudinal studies investigating the relationship between sense of coherence (SOC) and measures of health status (Coe et al., 1998; Post-White, 1998). Notably, however, Post-

White (1998) found that while SOC scores for the control and experimental groups showed stability over a four-month period, some participants' SOC scores did fluctuate during this same time period. According to this researcher: "how one perceives the circumstances, makes sense of the event, and finds meaning in the situation may be very individualized and may not be amenable to group analysis." Measuring SIR scores over time, and measuring for other factors (e.g., potential treatment effects), which may potentially influence changes in SOC and resilience scores, would have contributed to this present study.

Nurses who work in clients' homes with weak SIRs, but who are not currently experiencing PTSD symptoms, may be at increased risk of experiencing symptoms over time. Longitudinal studies among nurses are warranted in order to expand on these tentative interpretations and to clarify to what extent strong SIRs strengthen psychological health, and conversely, how the experiencing of continued workplace violence may wear away at a nurse's SIRs. Moreover, this investigation was limited to nurses who work in clients' homes. Further exploration into the generalizability of the results to other nursing groups, as well as to other segments of the population, is warranted. Further, the study did not include enough men to merit a separate analysis, therefore restricting the generalizability of the results.

More advanced techniques for dealing with likert scale data, such as using polychoric and tetrachoric correlations

in the factor analyses rather than Pearson product moment correlation, may have been more appropriate. In addition, the treatment of perception of threat and perception of competence variables, as already noted, are areas where there may be some concern. It would be prudent for future researchers to consider the treatment of such measures.

Other threats to the validity of this study include correlates of maturation, past historical events, and prior exposures. For instance, in this investigation, it is unclear how many nurses who reported PTSD symptoms actually had a prior diagnosis of PTSD or other conditions. In a similar vein, the possible effect of intervention for those nurses who reported having accessed services may have influenced SIR scores and PTSD scores. As an initial exploratory study of workplace violence among nurses who work in clients' homes, this study did not investigate these factors. Future empirical efforts that incorporate these factors are warranted. Despite the limitations of this study, the findings serve to direct future research built around a greater depth of knowledge that informs how workplace violence situations are conceptualized.

Directions for Future Research

Clearly, some individuals who are exposed to threatening events go on to develop PTSD, whereas others who are exposed to the same event progress without psychiatric sequelae. For instance, data collected from the National Comorbidity Survey (Kessler et al., 1995), found that, of

the individuals who are exposed to trauma, 20.4% of women and 8.2% of men go on to develop PTSD. That is, about 80% of these women and over 90% of these men do not develop this disorder. It is important to note that differences in definitions, methodologies, and time frames used to assess trauma reactions have made it difficult to compare prevalence estimates across studies.

This highlights new challenges to the method in which relationships between the qualifying event (Criterion A1 and A2) and other variables (e.g., SIRs) are measured. It is also possible that differences in reported PTSD rates are attributed to individual characteristics, to gender differences, or to fundamental differences between trauma types. Most of the studies on SIRs neglect to investigate associations between SIRs and Criterion A variables (A1: exposure to the objective event; A2: subjective perception of threat). The few studies who have investigated this line of research have not found exposure not be a significant correlate of PTSD (Frommberger et al., 1999; Larsson et al., 2000; Sommer & Ehlert, 2004).

There is evidence supporting the view that gender has influenced the theoretical development of PTSD. For instance, epidemiological studies have consistently reported higher rates of PTSD among women, despite being less frequently exposed to trauma than men (Schnyder et al., 2001). Norris et al. (2002) found, however, that the difference was significant for lifetime exposure but not for

past-year frequency of exposures. Gender differences have also been found regarding the type of trauma experienced, with women reporting more sexual assault and men reporting more other types of assaultive events (Breslau, 2001; Breslau et al., 1999; Breslau et al., 1998; Kessler et al., 1995; Norris et al., 2002). The question then arises as to whether PTSD is due to the saliency of event types or a gender bias in how different types of traumas are perceived. Further, trauma research has neglected to investigate whether this greater vulnerability reported among women in the general population for PTSD applies to women working in the emergency services industry. Given the small number of men in this study, it was not possible to investigate the influence of gender on PTSD, however, speculations are made about possible gender influences on the theoretical development of this disorder.

For instance, in line with findings from studies among women in the general population who have been sexually assaulted (Foa, 2000; Foa, Dancu et al., 1999; Foa & Meadow, 1997) nursing research emphasizes the extent that nurses are assaulted by patients, patients' family members, co-workers, and mangers. Similar to research conducted by Foa and colleagues who have linked the restructuring of safety cognitions with the recovery process, nursing research gives credence to the effective implementation of safety protocols in practice environments.

In contrast, research among the other emergency personnel groups (highly represented by men) does not investigate, nor address, the issue of workplace violence, but instead depicts trauma exposure as an impersonal duty-related event. References to 'dangerousness' in the literature are depicted in terms of occupational challenges (i.e., 'working under the mother slab during 9/11') instead of fears related to being assaulted (North, Tivis, McMillen, Pfefferbaum, Spitznagel, & Cox, 2002). In terms of diagnostic conceptualization of PTSD, it appears that studies among women consider the fear aspect (Criterion A2) of PTSD; whereas, studies among men focus on aspects of the objective event (Criterion A1). Further investigation of the possible influence of gender on the theoretical development of PTSD may have important practical consequences on the well-being of emergency personnel.

Another challenge facing future researchers is that much of what is currently known about trauma responses and the development of PTSD symptoms come from individuals who have sought treatment. To the extent that the presence or absence of PTSD symptoms, in the immediate aftermath of trauma, is not viewed as dichotomous, research protocols that include risk factors and stable internal resources (SIRs) in explanations of different outcome trajectories is warranted. For instance, Bonanno (2004) notes: "Resilience represents a distinct trajectory from the process of recovery, resilience in the face of loss or potential trauma

is more common than is often believed, and there are multiple and sometimes unexpected pathways to resilience" (p. 20). Yehuda (2002) posits that in the immediate aftermath of trauma, experiencing acute trauma reactions is normal (normal trajectory), and that failure to recover during this period represents an alternative to the normal trajectory, seen in individuals who go on to develop PTSD. Mainstream trauma research often lumps individuals who are recovering and those who have strong SIRs together (King, Foy et al., 1999). Failure to make the distinction between the subgroups of individuals who do not develop PTSD reinforces the misperception that individuals with strong SIRs, and those who recover from more intense trauma reactions, perceive and cope with trauma in similar ways.

Although quantitative research methods yields important data such as the incidence of exposure, PTSD prevalence rate, and differences between groups (e.g., nursing groups, levels of SIRs, PTSD versus no-criteria group), qualitative research can guide the focus of quantitative research. For instance, qualitative research captures the stories of individuals who are exposed to trauma, which contributes to a better understanding of how PTSD sufferers differ from individuals who eventually recover, and those who show an incredible capacity to thrive in the aftermath of trauma. Further, narratives give a rich account of individuals' descriptions of their trauma experience, and reveals recurring themes and influences, in a way that captures the

essence of the experience and the meaning it has for the individual. Future researchers are encouraged to incorporate qualitative analysis to better understand individuals' trauma experiences.

The results of this study also suggest that the level of a nurse's SIRs for managing workplace violence may differentiate those who rise above the challenge posed by trauma, from those who experience detrimental outcomes. This study found a direct negative relationship between SIRs and PTSD symptoms, independent of workplace support. More work in this area would contribute to a better theoretical and empirical understanding of the impact of workplace support and personality on PTSD symptoms. Another area that merits further attention is knowledge utilization. The literature suggests that nurses prefer to acquire clinical information from peers rather than research journals. This poses future challenges for researchers and decision makers interested in knowledge translation work.

This theory-guided effort adds to our understanding of the psychological sequelae that nurses who work in clients' homes experience when exposed to workplace violence, and is, therefore, relevant to those dedicated to practice and research in this domain. From both theoretical and applied viewpoints, the findings of this study have important implications for policy makers, decision makers, and nursing managers who are interested in knowledge utilization (i.e., utilization of new knowledge for the purpose of changing

work practices); organization psychologists who deliver workplace interventions and clinical services to emergency personnel; trauma researchers committed to investigating the etiology of PTSD; and educators dedicated to the well-being of future practicing nurses.

Additionally, there has been increasing concern reported in the literature about the personal and organizational consequences that follow workplace violence (e.g., under-reporting incidences due to fear of being seen as incompetent, lack of co-worker and manager support, PTSD) (Anderson, 2002; Barling et al., 2000; Corneil & Kirwan, 1994; Duncan et al., 2000; Duncan et al., 2001; Human Resources Development Canada, 2003; Kelloway et al., 2000; Lavack-Pambrun, 2002; Romanow Commission, 2002). Future research that investigates the relationship between workplace support and perception of safety would contribute to a better understanding of nurses' personal and organizational consequences following trauma, and how nurses cope with workplace violence within the work context.

In summary, this study has advanced our understanding about the question posed in countless trauma-related articles: Why is it that not all individuals who are exposed to the same trauma develop PTSD symptoms? The data from this study show that many factors affect trauma responses, and that there is no particular *a priori* reason to assume a unidimensional response with no variability. This empirical effort serves as a springboard, a counterbalance to, or

departure from, the traditional trend of examining vulnerability and pathology, by giving attention to positive aspects of stable internal resources (SIRs). There are as yet unmet challenges to be explored regarding the interplay between SIRs, exposure to trauma, subjective perception of threat, and the perception of workplace support. It is proposed that the ordering of variables presented here may be put forth as hypotheses for future investigative study. It is this researcher's hope that future empirical research, among other emergency personnel groups who are often exposed to work-related traumatic events, will draw attention to, and lead to a quest to clarify, the important questions raised in this study.

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UNIVERSITY OF MANITOBA | Department of Psychology

190 Dysart Road
Winnipeg, Manitoba
Canada R3T 2N2
Phone (204) 474-9338
Fax (204) 474-7599

Appendix A

Declaration of Informed Consent

Research Project Title: Stable Internal Resources, Workplace Violence, and PTSD among Nurses who work in Clients' Homes: Beyond DSM-IV-TR.

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It will give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, please feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

1. I have been informed that the purpose of this study will be to investigate the relationships between workplace violence/ abuse, individual difference variables, and PTSD symptoms among nurses who work in clients' homes in the provinces of Manitoba and Alberta.

2. I have been informed that there are no known expected discomforts or risks involved in my participation in this study. This judgment is based upon a relatively large body of research. However, if you do experience discomfort of any kind assistance is available. A list of resources has been included in your package for your assistance.

3. I have been informed of the research procedures; in particular, that my College/Association will be responsible for the computer search of eligible members and delivery of the survey (and any follow-up material), that the researcher does not have access to my College/Association's membership list, and that participants will not be identified by name or other means that allows the researcher or anyone else to identify data with specific participants. A more thorough description of the research procedure is outlined in the Introductory letter. I have also been informed that the researcher will gladly answer any question regarding the procedures of this study when the study is completed.

4. I have been informed that I am free to withdraw from the study at any time without penalty of any kind.

5. I understand that a summary of the results will be provided to my College/Association and that I will also have access to a summary of these results.

6. I have been informed of the procedures for maintaining anonymity and confidentiality. In particular, I have been informed that the researcher will not have

access to my College/Association's membership list. My anonymity will be preserved further by having a staff member of my College/ Association responsible for the computer search of eligible members and the distribution of the questionnaire package. The researcher will also preserve confidentiality by stipulating that I not indicate my name nor address anywhere on the questionnaire and return envelope(s); by requesting that I sign this declaration of informed consent form; by ensuring that completed questionnaires will be securely locked in a file cabinet for 7-10 years and then destroyed; by ensuring that individual data will not be released to anyone, however, pooled data may be made available for future research and publication; and by respecting my College/Association's research policy.

7. Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researcher, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation is as informed as your initial consent, so please feel free to ask for clarification or new information throughout your participation.

Researcher: Solange Lavack,
Ph.D. Student
Fax No.: (204) 453-2386

Research Advisor: Dr. Marvin Brodsky,
Ph.D., C. Psych.

This research/study has been approved by the Psychology/Sociology Research Ethics Board. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Secretariat at (204) 474-7122. A copy of this consent form has been given to you to keep for your records and reference.

_____

Participant's Signature Date

_____

Researcher Date

Reminder: This form is not to be returned with your questionnaire package. Please either mail it separately or fax it back to the address below [College/Association address and fax #]. This procedure serves to assure that confidentiality will be maintained.

"Results": A summary of the results will be provided to your College/Association and you will be given access to same.

Appendix B

Nurses Who Work in Clients' Homes Survey

(S. Lavack)

The aim of these series of questions is to obtain a better understanding of your work-related violence/abuse experiences while providing care in clients' homes. Although different types of events are addressed, the survey focuses on nurses' responses to workplace violence/abuse and safety concerns.

Please refer to the following definitions of <u>workplace violence/abuse</u> when answering this questionnaire:

a. **Physical Assault (e.g., being spit on, bitten, hit, pushed);**
b. **Threat of Assault (verbal or written threats intending harm);**
c. **Verbal Abuse (hurtful remarks, insults, or humiliating comments);**
d. **Verbal Sexual Harassment (repeated, unwanted intimate questions or remarks of a sexual nature);**
e. **Sexual Assault (any forced physical sexual contact including forcible touching and fondling, any forced sexual acts including forcible intercourse) (Registered Nurses' Association of Ontario; RNAO, 1992).**

Do not write your name on this booklet so that your anonymity can be maintained. We realize that some nurses may work for more than one home healthcare employer. When answering the following questions, please do so with your **primary employment situation in mind (where you work most of the time).**

Appendix C

Nurses Who Work in Clients' Homes Survey

(S. Lavack)

EMPLOYMENT INFORMATION: This section contains general questions about your employment in home health care. For each question please circle the answer that applies to you, or fill in the blanks if applicable.

1. In your work as a home healthcare nurse do you work for more than one home healthcare employer? [4]

1 NO
2 YES (Specify):

_____

_____

2. What is your job status? [5]

1 PERMANENT (FULL-TIME)
2 PERMANENT (PART-TIME)
3 TERM POSITION (> 3 MONTHS)
4 TERM POSITION (< 3 MONTHS)
5 CASUAL POSITION (FULL TIME)
6 CASUAL POSITION (PART TIME)
7 CONTRACT POSITION
8 AGENCY

3. Do you carry a cell phone, beeper, or two-way radio for protection when working in clients' homes? [6]

1 NO
2 YES

4. How many years have you worked as a home healthcare nurse? [7]

1 LESS THAN 1 YEAR
2 1-4 YEARS
3 5-7 YEARS
4 8-10 YEARS
5 MORE THAN 10 YEARS

. . . **continued on next page**

5. I underreport workplace violence/abuse due to... [8]

Circle As Many That Apply

Fear of being viewed as incompetent by my supervisor/ manager 1
Fear of being viewed as incompetent by my co-workers 2
Because my supervisor/manager considers it as "part of the job" 3
Because I see it as "part of the job". 4
Fear of work consequences when the perpetrator is a supervisor/manager 5
Fear of work consequences (e.g., ostracism) when the perpetrator is a co-worker 6
Burdensome paperwork (i.e., writing the incident report) . . 7
Lack of support by my supervisor/manager 8
Lack of support by my co-workers 9
Due to dissuasive comments by my supervisor/manager 10
Due to dissuasive comments by my co-workers 11
Due to dissuasive comments by law enforcement. 12
Fear of loosing my job 13
Fear of repercussion by the client (e.g., threats/abuse, reporting me to my employer/association, etc.) 14
I report all workplace violence/abuse incidents 15

6. In the past year I have had physical injuries due to workplace violence. [9]

1 NO …> SKIP TO Q. 9
2 YES (Specify): How many times have you been physically assaulted to the point where you have sustained physical injuries _____

7. Please circle as many of the following injuries you have had during the past year due to workplace violence. [10]

Circle As Many That Apply

Cuts requiring stitches 1
Cuts not requiring stitches 2
Concussion. 3
Serious head injury 4
Internal injuries 5
Fractured/broken bones. 6
Bruises 7
Pain (e.g., neck/back pain) 8
Strained muscles. 9
Other (Specify: _____). 10

. . . **continued on next page**

8. As a result of the physical injury(ies) you sustained due to workplace violence, how many of the following actions did you take? [11]

Circle As Many That Apply

Ignored it 1
Took it out on others (e.g., family, co-workers) 2
Sought support from supervisor/manager 3
Sought support from co-workers 4
Put in a grievance 5
Documented the incident in client's chart 6
Wrote up a formal incident report. 7
Took time off work as sick time 8
Took time off work as vacation time. 9
Took time off work as unpaid leave 10
Took time off work as long-term disability 11
Filled out a Workers' Compensation claim 12
Took time off work due to Workers' Compensation leave . . 13
Reported the incident to the police - laid charges 14
Reported the incident to the police - no charges laid. . . 15
Reported the incident to your supervisor/manager 16
Sought medical assistance and treatment. 17
Quit your job. 18
Requested a new assignment 19
Obtained outside counselling 20
Other (Specify:_____). 21

9. How many of the following services does your home healthcare employer make available to its employees? [12]

Circle All That Apply

Critical Incident Stress Management (CISM) Services 1
Employee Assistance Program (EAP) 2
Extended Health Services (coverage to see a Clinical Psychologist) 3
Non-Insured Health Benefits (mental health services for individuals with Treaty Status) 4
Workers' Compensation (mental health counseling coverage) . 5
Other (Specify): _____. . . . 6
None of the above-mentioned services are available. 7

10. During the past year, have you sought assistance from any of the services mentioned above (Q. 9) for workplace violence/abuse? [13]

1 NO ...> SKIP TO Q. 12.
2 YES

. . . **continued on next page**

11. Please circle the number corresponding to the service(s) you accessed and also place a check mark beside the one(s) you accessed to indicate whether or not you would recommend the service(s) to anyone. [14]

	Circle All That Apply	Recommend	Do Not Recommend
Critical Incident Stress Management (CISM)	1	_____	_____
Employee Assistance Program (EAP)	2	_____	_____
Extended Health Services (coverage to see a clinical psychologist)	3	_____	_____
Non-Insured Health Benefits (services for individuals with treaty status)	4	_____	_____
Workers' Compensation (counseling coverage)	5	_____	_____
Family Physician	6	_____	_____
Walk-In Clinic, Emergency, other health care professional	7	_____	_____
Minister, Priest, or Rabbi	8	_____	_____
Traditional Healer	9	_____	_____
Accessed services not covered by a health plan/program in my workplace (e.g., social worker) Specify: _____	10	_____	_____

12. Which of the following (if applicable) has your home healthcare employer done to address workplace violence? [15]

	Circle All That Apply
Provided education on workplace violence/abuse	1
Developed and implemented a practice protocol for dealing with workplace violence/abuse.	2
Established a reporting system for tracking workplace violence/abuse	3
Evaluates its safety procedures.	4
Provides education and training for dealing with workplace violence/abuse at orientation	5
Invites professionals who are trained to teach safety prevention techniques at education sessions (Specify who: _____)	6
Provides specialized security escort/police protection when working in an unsafe home or area (i.e., client is known to be violent; gang-related activities in the neighborhood).	7

. . . **continued on next page**

Circle All That Apply

Provides training on managing high risk situations 8
Implemented a policy that states that nurses are not required to provide care to clients when their personal safety is at risk 9

13. In situations where I perceive there to be safety concerns, I do not go in to a client's home by myself. [16]

1 NO
2 YES

14. In the past year, have you participated in Critical Incident Stress Management Services (CISMS) at work? [17]

1 NO
2 CISM PRE-INCIDENT EDUCATION WORKSHOP/SEMINAR
3 CISM INTERVENTION FOLLOWING A CRITICAL INCIDENT (group debriefing, defusing, individual critical incident stress counselling)

15. For each of the following items please circle one rating on a scale of 1 to 7 to indicate how much you agree/disagree with each statement (1 = strongly agree . . . 7 = strongly disagree).

	strongly agree						strongly disagree	
I generally feel safe in clients' homes.	1	2	3	4	5	6	7	[18]
My supervisor/manager is someone I can turn to for support following any type of work-related violence incident. . . .	1	2	3	4	5	6	7	[19]
My supervisor/manager supports the prevention of workplace violence/abuse .	1	2	3	4	5	6	7	[20]
I usually reach out to co-workers after I have experienced a work-related violence/abuse incident.	1	2	3	4	5	6	7	[21]
My supervisor/manager adequately addresses my work-related safety concerns	1	2	3	4	5	6	7	[22]
There are times when I fear for my safety when providing care to clients. .	1	2	3	4	5	6	7	[23]

. . . **continued on next page**

. . . circle one rating on a scale of 1 to 7 to indicate how much you agree/ disagree with each statement (1 = strongly agree . . . 7 = strongly disagree).

	strongly agree						strongly disagree	
Following exposure to workplace violence, my manager/supervisor offers me tangible support (i.e., time off work, help with completing job tasks, option to not return to client's home)	1	2	3	4	5	6	7	[24]
Following exposure to workplace violence, my manager/supervisor offers me emotional support (i.e., is empathetic, verbalizes concern for my well-being).	1	2	3	4	5	6	7	[25]
Overall, I feel competent in my abilities to deal with workplace violence/abuse and unsafe situations	1	2	3	4	5	6	7	[26]
Overall, I feel competent when dealing with serious work-related events that do not threaten my personal safety (i.e., death of a patient, prolonged resuscitation) . . .	1	2	3	4	5	6	7	[27]
Whenever I experience workplace violence I can always count on my co-workers for tangible support (i.e., assistance with completing job tasks, with writing the incident report, going with me to discuss the situation with my manager)	1	2	3	4	5	6	7	[28]
Generally, following exposure to workplace violence/abuse I question my level of competency in managing the event	1	2	3	4	5	6	7	[29]
Overall, I am satisfied with the support I receive from my manager/supervisor after I experience workplace violence/abuse . . .	1	2	3	4	5	6	7	[30]
For the most part, workplace violence can be prevented by the competent handling of the situation. Do you agree with this statement?	1	2	3	4	5	6	7	[31]
My complaints about unsafe work conditions (e.g., inadequate ventilation, broken staircases, fire hazards, vermin infestation, poor lighting, drinking/ drug parties) in clients' homes are adequately addressed by my home healthcare employer.	1	2	3	4	5	6	7	[32]
My manager/supervisor can do a lot more to address workplace violence/abuse.	1	2	3	4	5	6	7	[33]

. . . **continued on next page**

. . . circle one rating on a scale of 1 to 7 to indicate how much you agree/ disagree with each statement (1 = strongly agree . . . 7 = strongly disagree).

	strongly agree						strongly disagree	
Overall, my supervisor/manager gives me recognition and supportive praise for how I manage workplace violence/abuse situations	1	2	3	4	5	6	7	[34]
Whenever I experience violence/abuse at work I can always count on my co-workers for emotional support (i.e., empathetic, understanding, verbalizes concern for my well-being, going to the manager with me) .	1	2	3	4	5	6	7	[35]
At work, my supervisor/manager often thinks of me as being incompetent for how I handle workplace violence/abuse situations	1	2	3	4	5	6	7	[36]
Overall, I am satisfied with the support I receive from my co-workers after I experience workplace violence/abuse	1	2	3	4	5	6	7	[37]
At times, my personal safety or the safety of others is at risk because my supervisors/managers do not adequately address work safety concerns.	1	2	3	4	5	6	7	[38]
I often think about leaving my home healthcare job due to unsafe work conditions	1	2	3	4	5	6	7	[39]
Overall, my supervisor/manager gives me recognition and supportive praise for not going into, or for leaving, a violent/ abuse situation	1	2	3	4	5	6	7	[40]
At work, my co-workers often think of me as being incompetent for how I handle workplace violence situations. . . .	1	2	3	4	5	6	7	[41]

DEMOGRAPHIC AND EDUCATION INFORMATION: This section contains general questions about you and your nursing background. For each question please circle the answer(s) that applies to you, or fill in the blanks if applicable.

16. What was your initial education qualification in nursing? [42]

1 CERTIFICATE
2 DIPLOMA
3 BACCALAUREATE
4 OTHER (Specify: _____)

. . . **continued on next page**

17. What other nursing education have you completed? [43]

Circle All That Apply

Certificate	1
Post Licensed/Registered Practical Nurse Certificate	2
Registered Psychiatric Nurse Diploma for RNs and LPNs	3
Post Licensed/Registered Practical Nurse Diploma	4
Post Registered Nurse Diploma	5
Advanced Diploma in Psychiatric Nursing	6
Nurse Practitioner	7
Baccalaureate in Nursing	8
Baccalaureate of Science in Mental Health	9
Masters in Nursing	10
PhD in Nursing	11
Other (Specify): _____	12
Not Applicable	13

18. What other education have you completed other than in nursing? [44]

Circle All That Apply

Certificate in:	1
Diploma in:	2
Baccalaureate in:	3
Masters in:	4
PhD in:	5
Other (Specify):	6
Not Applicable (Specify): _____	7

19. Which of the following nursing groups are you practicing as? [45]

1 LICENSED/REGISTERED PRACTICAL NURSE
2 REGISTERED NURSE
3 REGISTERED PSYCHIATRIC NURSE

20. What is your gender? [46]

1 MALE
2 FEMALE

21. What is your present age? [47]

1 LESS THAN 25 YEARS OF AGE
2 25-35 YEARS OF AGE
3 36-46 YEARS OF AGE
4 MORE THAN 46 YEARS OF AGE

22. How many years have you been working as a nurse? [48]

1 LESS THAN 1 YEAR
2 1-5 YEARS
3 6-10 YEARS
4 11-15 YEARS
5 16-20 YEARS
6 MORE THAN 20 YEAR

Appendix D

Exposure Scale

(S. Lavack)

EXPOSURE SCALE: This section asks about nurses' experiences with workplace violence/abuse/and other serious events within the past year, while providing care in clients' homes. We are also interested in understanding nurses' perceptions of event severity and perceptions of competency following exposure to serious workplace events.

USE THESE DEFINITIONS OF THREAT AND COMPETENCE IN ANSWERING THIS SECTION.

Perception of Threat:

- Your perception of how threatening the workplace violence/abuse/other event is.

Perception of Competence:

- Confidence in one's skills and responses to workplace violence/abuse/other events;
- Others may (or may not) have made comments about your abilities to deal with workplace violence/abuse/other events; however, what is important here is your perception of how the event has affected your confidence in your skills.

THEN means: when the event occurred

NOW means: current (today)

. . . **continued on next page**

Column ❶: Place (✓) for each event experienced in the past year.
Column ❷: Fill in the number of times you experienced each event in the past year.
Column ❸: Fill in number of months ago each event occurred: if event occurred more than once, choose the MOST DISTRESSING.
Columns ❹ to ❺: Fill in one number (1 to 7) for each event (1 = not at all threatening . . . 7 = very threatening).
Columns ❻ to ❼: Fill in one number (1 to 7) for each event (1 = felt very incompetent . . . 7 = felt very competent).

See KEY at top of page ➡ for explanation

EVENT	❶ (✓)	❷ # TIMES	❸ # MONTHS AGO	❹ THREAT THEN (Scale of 1,2,3,4,5,6,7)	❺ THREAT NOW (Scale of 1,2,3,4,5,6,7)	❻ COMPETENCY THEN (Scale of 1,2,3,4,5,6,7)	❼ COMPETENCY NOW (Scale of 1,2,3,4,5,6,7)
1. Being raped by client or family member/visitor							
2. Being raped by a co-worker							
3. Being sexually assaulted, other than raped (e.g. touching, fondling, grabbed) by client or family members/visitor							
4. Being sexually assaulted, other than raped (e.g. touching, fondling, grabbed) by co-worker							
5. Being sexually harassed (e.g., unwanted remarks of a sexual nature) by client or family member/ visitor							
6. Being sexually harassed (e.g., unwanted remarks of a sexual nature) by co-worker							
7. Attacked with a weapon by client or family member/visitor							
8. Attacked with a weapon by a co-worker							
9. Witnessed another person being attacked with a weapon by client or family member/visitor							
10. Witnessed another person being attacked with a weapon by a co-worker							
11. Physically attacked without a weapon (e.g., bitten, hit, kicked, grabbed, slapped, swung at with fist, pushed) by client or family member/visitor							
12. Physically attacked without a weapon (e.g., bitten, hit, kicked, grabbed, slapped, swung at with fist, pushed) by co-worker							
13. Attacked by a dog belonging to client or neighbor							
14. Witnessed another person being physically attacked without a weapon (e.g., bitten, hit, pushed, kicked, grabbed, slapped, swung at with fist) by client or family member/visitor							
15. Witnessed another person being physically attacked without a weapon (e.g., bitten, hit, pushed, kicked, grabbed, slapped, swung at with fist) by co-worker							
16. Attempted physical assault by client or family member/visitor (i.e. threw an object but missed me/I got away)							
17. Attempted physical assault by a co-worker (i.e. threw an object but missed me/I got away)							

See KEY at top of previous page➡ for explanation

EVENT

	❶ (✓)	❷ # TIMES	❸ # MONTHS AGO	❹ THREAT THEN (Scale of 1,2,3,4,5,6,7)	❺ THREAT NOW (Scale of 1,2,3,4,5,6,7)	❻ COMPETENCY THEN (Scale of 1,2,3,4,5,6,7)	❼ COMPETENCY NOW (Scale of 1,2,3,4,5,6,7)
18. Verbal abuse/threat by client or family member/ visitor intending harm (e.g., cursing, name calling, yelled at, insults, racist comments)							
19. Verbal abuse/threat by co-worker intending harm (e.g. cursing, name calling, yelled at, insults, coersion)							
20. Telephone threats, abusive letters, unjustified complaints to managers by client/family member							
21. Telephone threats, abusive letters, unjustified complaints to manager by co-worker							
22. Received telephone threats or abusive letters by client or family member							
23. Received telephone threats or abusive letters by a co-worker							
24. Work related death of a well known colleage							
25. Hearing about the attempted suicide of a co-worker							
26. Prolonged Resuscitation of client							
27. Overdose of client							
28. Possible/actual contact with infectious body fluids (e.g. Hepatitis B, HIV)							
29. Alone with a known dangerous client or family member, or other person							
30. Serious injury or death of a client due to violent causes (e.g. stabbing)							
31. You witnessed the completed suicide of a client or family member/vistor							
32. You were exposed to the attempted suicide of a client or family member/vistor							
33. Unexpected death of a client							
34. Witnessed a seriously disfigured person, strong smells, or odours coming from the body of a client							
35. Other (specify); _____							

PLEASE ANSWER BOTH OF THE FOLLOWING QUESTIONS:

1) Out of these events, the one that was the **MOST DISTRESSING** was? (Specify event)

_____

Did you reported this **EVENT** to your supervisor? ____ Yes ____ No

Appendix E

My Life Scale

(permission by M. Brodsky)

MY LIFE SCALE: Please circle the alphabet, which applies to yourself. For example: I like food. If this is true about you, then circle ***"E"*** *(very much true about me).*

A = Very much not true about me
B = Mostly not true about me
C = Sometimes true about me
D = Mostly true about me
E = Very much true about me

1. I sometimes like to be alone and amuse myself	A	B	C	D	E
2. If I have a problem I look at it as an opportunity to Learn something new	A	B	C	D	E
3. If life presents me with a lemon, I think about making lemonade	A	B	C	D	E
4. I am the sort of person who prefers to light a candle instead of cursing the darkness	A	B	C	D	E
5. If I get a flat tire I wait for someone to help me	A	B	C	D	E
6. I consider myself competent	A	B	C	D	E
7. When I get overwhelmed with stress I tend to give up	A	B	C	D	E
8. I feel that I can do whatever I set out to do	A	B	C	D	E
9. I like to solve problems of all kinds	A	B	C	D	E
10. If I have a problem I try to focus on solving it	A	B	C	D	E
11. If someone is angry at me I try to talk it out with them	A	B	C	D	E
12. When I have a problem I unwind by drinking	A	B	C	D	E
13. When I have a problem I focus on doing something else to avoid thinking about it	A	B	C	D	E
14. When someone is mean to me I take it personally	A	B	C	D	E
15. I prefer other people to take control over my life	A	B	C	D	E
16. I try to avoid confrontations with other people	A	B	C	D	E
17. My relationships with others tend to be very close	A	B	C	D	E
18. I find it easy to trust other people	A	B	C	D	E
19. Other people often turn to me to help them when they have a problem	A	B	C	D	E
20. I sometimes find myself in relationships which are not satisfying to me, but I stay in them anyway.	A	B	C	D	E
21. At times, I have been in a really tough situation and I didn't know how to get out of it	A	B	C	D	E
22. At times, I touch others when showing emotional support.	A	B	C	D	E
23. I feel comfortable with my feelings and emotions	A	B	C	D	E
24. I am good at comforting other people	A	B	C	D	E
25. I am usually able to express love and affection to others.	A	B	C	D	E
26. I feel tense in personally intimate situations	A	B	C	D	E
27. I am very sensitive about being rejected	A	B	C	D	E
28. I can usually laugh at myself	A	B	C	D	E
29. I feel awkward around others	A	B	C	D	E
30. I am often prone to brooding and sulking	A	B	C	D	E

Appendix F

Orientation To Life Questionnaire

(As referenced in Snekkevik, 2003)

ORIENTATION TO LIFE QUESTIONNAIRE: Next is a series of questions relating to various aspects of people's lives. For each question please answer with a number between 1 and 7. Take your time to think about each question before answering.

*1. How often do you have the feeling that you don't really care about what goes on around you?

1	2	3	4	5	6	7
very seldom or never						very often

*2. How often in the past were you surprised by the behavior of people whom you thought you knew well?

1	2	3	4	5	6	7
never happened						always happened

*3. How often have people you counted on disappointed you?

1	2	3	4	5	6	7
never happened						always happened

*4. How often do you have the feeling you're being treated unfairly?

1	2	3	4	5	6	7
very often						very seldom or never

*5. How often do you have the feeling you are in an unfamiliar situation and don't know what to do?

1	2	3	4	5	6	7
very often						very seldom or never

*6. How often do you have very mixed-up feelings and ideas?

1	2	3	4	5	6	7
very often						very seldom or never

*7. How often do you have feelings inside you would rather not feel?

1	2	3	4	5	6	7
very often						very seldom or never

. . . . . .continued on next page

For each question please answer with a number between 1 and 7.

*8. Many people--even those with a strong character--sometimes feel like sad sacks (losers) in certain situations. How often have you felt this way in the past?

1	2	3	4	5	6	7
very seldom or never						very often

*9. How often do you have the feeling that there's little meaning in the things you do in your daily life?

1	2	3	4	5	6	7
very often						very seldom or never

*10. How often do you have feelings that you're not sure you can keep under control?

1	2	3	4	5	6	7
very often						very seldom or never

11. Until now your life has had no clear goals or purpose or has it had very clear goals and purpose?

1	2	3	4	5	6	7
no clear goals or no purpose at all						very clear goals and purpose

12. When something happens, you generally find that you overestimate or underestimate its importance or you see things in the right proportion?

1	2	3	4	5	6	7
overestimate or underestimate its importance						see things in the right proportion

13. Is doing the things you do every day a source of great pleasure and satisfaction or a source of pain and boredom?

1	2	3	4	5	6	7
a great deal of pleasure and satisfaction						a source of pain and boredom

Note: Every effort has been made to contact the original source of this scale.

Appendix G

PTSD Checklist (PCL-C)

(permission by F. Weathers)

POSTTRAUMATIC STRESS DISORDER CHECKLIST (PCL-C): Below is a list of problems and complaints that people have in response to stressful life experiences. Please read each one carefully then circle one of the numbers to the right to indicate how much you have been bothered by that problem for a month or longer in the past. Refer to the ***MOST DISTRESSING EVENT*** *that you* ***specified on the bottom of the Exposure Scale (page 235)*** *when answering each item.*

NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY
1	2	3	4	5

1. Repeated, disturbing memories, thoughts, or images of a stressful experience from the past? 1 2 3 4 5
2. Repeated, disturbing dreams of a stressful experience from the past? 1 2 3 4 5
3. Suddenly acting or feeling as if a stressful experience from the past were happening again (as if you were reliving it)? 1 2 3 4 5
4. Feeling very upset when something reminded you of a stressful experience from the past? 1 2 3 4 5
5. Having physical reactions (e.g., heart pounding, trouble breathing, sweating) when something reminded you of a stressful experience from the past? . . 1 2 3 4 5
6. Avoiding thinking about or talking about a stressful experience from the past or avoiding having feelings related to it? 1 2 3 4 5
7. Avoiding activities or situations because they reminded you of a stressful experience from the past? . . 1 2 3 4 5
8. Trouble remembering important parts of a stressful experience from the past? 1 2 3 4 5
9. Loss of interest in activities that you used to enjoy? . 1 2 3 4 5
10. Feeling distant or cut off from other people? 1 2 3 4 5
11. Feeling emotionally numb or being unable to have loving feelings for those close to you? 1 2 3 4 5

. . . . . continued on next page

12. Feeling as if your future somehow will be cut short?. . . 1 2 3 4 5

13. Trouble falling or staying asleep?. 1 2 3 4 5

14. Feeling irritable or having angry outbursts?. 1 2 3 4 5

15. Having difficulty concentrating?. 1 2 3 4 5

16. Being 'superalert' or watchful or on guard? 1 2 3 4 5

17. Feeling jumpy or easily startled? 1 2 3 4 5

Thank you for the time you spent completing this questionnaire. Your contribution is greatly appreciated. Please return your completed questionnaire by mail using the enclosed prepaid self-addressed envelope. Please do not write your name on the envelope.

Approximate amount of time it took you to fill out this questionnaire package:

Finish Time: _____ *(minutes).*

UNIVERSITY OF MANITOBA | Department of Psychology

190 Dysart Road
Winnipeg, Manitoba
Canada R3T 2N2
Phone (204) 474-9338
Fax (204) 474-759

Appendix H

I am requesting your assistance in completing the enclosed survey. The study is entitled: Stable Internal Resources, Workplace Violence, and PTSD among nurses who work in clients' homes: Beyond DSM-IV-TR. The survey is being sent to members of the three regulated nursing professions (Licensed Practical Nurses, Registered Nurses, and Registered Psychiatric Nurses), therefore, the words "nurse" and "nursing" as used in the questionnaire refers to all three groups.

Importance of Study:

- There is increasing concern about the increasing incidence of workplace violence and abuse experienced by nurses who work in clients' homes.
- Since managed care, home healthcare has been the fastest growing segment of the health industry. Therefore, whatever the extent of workplace violence and abuse inherent in other healthcare environments, it can be expected to increase in home healthcare.
- You are part of a carefully chosen sample of home healthcare nurses selected to be representative of nurses who provide care in clients' homes. Your first-hand information is needed to better understand the effects of workplace violence and abuse.

The purpose of this study:

- To investigate the potential influence of workplace violence, individual (stable internal resources, perception of competence) and practice environment factors (workplace support, perception of safety in the nursing work context) on threat and PTSD among a sample of nurses who provide care in clients' homes in the provinces of Manitoba and Alberta.
- Although nurses who often work alone in clients' homes are frequently exposed to workplace violence and abuse, no study to date has explored whether they are at risk of developing PTSD symptoms.
- Although research in other areas have related internal resources, perception of event severity, and perception of competency to PTSD symptoms, no study to date has investigated the contributions of these variables together.

- The results of this study will benefit organizations who want to assist nurses who provide care in clients' homes following exposure to workplace violence and abuse.

Confidentiality and Anonymity:

- It is requested that you not indicate your name nor address anywhere on the survey.
- It is also requested that you sign the declaration of informed consent (enclosed) to guarantee confidentiality.
- All completed surveys will be securely locked in a filling cabinet for 7 to 10 years and then destroyed.
- Individual data will not be released to anyone; however, pooled data may be made available for future research and publication.
- It is understood that your College/Association's policy prohibits the release of membership lists and that the computer search to generate the names of nurses who provide care in clients' homes will be completed by your College/Association to protect the anonymity of members.
- It is also understood that your College/Association will be responsible for distributing the survey to its membership to further ensure anonymity.

This research study has been approved by the Psychology/Sociology Ethics Board. Approximately 30 minutes is required to complete the survey. Please return your survey at your earliest convenience by mailing it in the enclosed pre-paid return envelop.

A summary of the results will be provided to your College/Association and you will have access to same.

I will be happy to answer any questions you might have. Thanking you in advance for your participation in this important survey.

Sincerely,

Solange Lavack Ph.D. Student
Researcher

Encls.

Appendix I

Counselling Services

If, after completing this questionnaire you find that you are experiencing some discomfort or distress, it is encouraged that you seek the support of trusted family members or friends. For some individuals who may want to access counseling services the following includes a list of some counseling resources:

MANITOBA

Psychological Association of Manitoba	(204) 487-0784
Klinic Community Health Centre	(204) 786-6943
	(204) 786-8686 (after hours)
Psychological Service Centre (UofM)	(204) 474-9222
Interfaith Pastoral Institute	(204) 786-9251
Regional Health Authority of Manitoba	(204) 926-7012
Your Employer	

ALBERTA

Psychologists' Association of Alberta	Toll Free: 1-888-424-0297
Camrose Distress Line	(403) 672-0141
Edmonton: The Support Network	(403) 482-0198
Fort McMurray: Some Other Solutions Society for Crisis Prevention.	(403) 743-8605
Grand Prairie: P.A.C.E.	(403) 539-6692
Grand Centre: Crisis Centre & Help Line	(403) 594-5095
Your Employer	

Please note that you may also have access to counselling services through an Employee Assistance Program, First Nation benefits if you have treaty status, or extended mental health services.