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Master's Thesis

**POST-TRAUMATIC STRESS DISORDER:
EVIDENCE-BASED RESEARCH FOR THE THIRD MILLENNIUM**

Master of Science in Nursing

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ABSTRACT

Understanding the development of PTSD starts with understanding the theories postulated in helping the body respond to adversity.

The data for this project was collected through observation at various hospitals and has been compared with literature database analysis.

The purpose of this project is to provide understanding the development of PTSD starts with understanding the theories postulated in helping the body respond to adversity.

Emergency respondents and rescue workers are affected by tragic events, just as much as the real victims. They put their lives in harm's way to save others and might get injured or even have themselves killed, maimed for the rest of their lives or suffer adverse psychological effects in the process. These include PTSD that may predispose them to substance abuse, depressive episodes, anxiety, and even suicidal tendencies. These effects may have consequences not just on their health, but also on those with whom they closely interact, such as their spouses. Spouses may suffer divorce, since divorce rates are higher among these populations; their children may suffer neglect, in the case where these people (emergency workers) who are breadwinners' resort to substance abuse and neglect of their parental duties. On the larger scale, the economy might suffer a lack of productivity, due to suboptimal performance as a result of diminished workplace productivity.

These findings indicate the need for research-based mechanisms, such as counseling and fostering strong social relationships that can be used in the care of these individuals.

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INTRODUCTION

Post-Traumatic Stress Disorders

The twenty-first century rose in a ray of hope. The belief was commonly held that an age of worldwide prosperity was beginning with the new millennium. Only a few years ago, people spoke of peace. Today, the general trend in many populations across the globe is fear and anxiety about self and neighbor. Socio-political events have cast a shadow of uneasiness about one's own security and that of significant others at a personal as well as a societal level. (Case in point is Greg, a businessman from Southern California, who happened to be on a business trip in New York city scheduled for September 10–12, 2001. Following the 9/11 attack, which he barely escaped, he immediately attempted to contact his family in the Southland and to leave New York city. He was on the first plane out: but the plane never took off, instead it was boarded by the New York city SWAT team who, at gunpoint, arrested a passenger seated four seats in front of Greg's. Greg then drove at night to Philadelphia, where he was eventually able to board a plane and return to his anxious family. To this day, Greg does not fly as often as before, is reluctant to fly to the east coast and will not return to do business in New York city. His Type II diabetes has considerably worsened.)

Traumatic events are profoundly stressful. The stress that results from traumatic events precipitates a spectrum of psycho-emotional and physiopathological outcomes. In its gravest form, this response is diagnosed as a psychiatric disorder consequential to the experience of traumatic events.

Post-traumatic stress disorder, or PTSD, is the psychiatric disorder that can result from the experience or witnessing of traumatic or life-threatening events such as terrorist attack, violent crime and abuse, military combat, natural disasters, serious accidents or violent personal assaults. Exposure to environmental toxins (e.g. Agent orange, electromagnetic radiation) may result in immune symptoms akin to PTSD in many susceptible patients (1,2).

Subjects with PTSD often relive the experience through nightmares and flashbacks. They report difficulty in sleeping. Their behavior becomes increasingly detached or estranged and is frequently aggravated by related disorders such as depression, substance abuse and problems of memory and cognition. The disorder soon leads to impairment of the ability to function in social or family life, which more often than not results in occupational instability, marital problems and divorces, family discord and difficulties in parenting. The disorder can be severe enough and last long enough to impair the person's daily life and, in the extreme, lead the patient to suicidal tendencies. PTSD is marked by clear biological changes, in addition to the psychological symptoms noted above, and is consequently complicated by a variety of other problems of physical and mental health.

CHAPTER 1

PTSD in the US Population Today

The National Center for PTSD (US Department of Veterans Affairs) made public estimates that whereas the lifetime prevalence of PTSD in the US population was 5% in men and 10% in women in the mid-to-late 1990s, the prevalence of PTSD among Vietnam veterans at this same time was at 15.2%. About 30% of the men and women who have spent time in more recent war zones experience PTSD.

Whereas the onset and progression of PTSD is characteristic for every individual subject, data suggest that most people who are exposed to a traumatic, stressful event will exhibit early symptoms of PTSD in the days and weeks following exposure. Available data from the National Center for PTSD suggest that ~8% of men and 20% of women go on to develop PTSD and ~30% of these individuals develop a chronic form that persists throughout their lifetimes. Complex PTSD, which is also referred to as 'disorder of extreme stress', results from exposure to prolonged traumatic circumstances, such as the year-on end threat of insurgent attacks among our military personnel currently in active deployment.

The National Center for PTSD also estimates that under normal and usual socio-political conditions 8% of the US population will experience PTSD at some point in their lives, with women (10.4%) twice as likely as men (5%) to

develop PTSD. At the beginning of the millennium, it was estimated that 5–6 million US adults suffered from PTSD. Because of the traumatic developments of recent years, and of ongoing turmoil worldwide, it is possible and even probable that the incidence of PTSD will sharply increase within the next decade and that it may become one among the most significant public health concerns of this new century. This threat is all the more serious considering the fact that PTSD symptoms seldom disappear completely; recovery from PTSD is a lengthy, ongoing, gradual and costly process, which is often hampered by continuing reaction to memories. Treatment usually aims at reducing reactions and to diminishing the acuity of the reactions. Treatments also seek to increase the subject's ability to manage trauma-related emotions and to greater confidence in coping abilities.

Whereas the terminology of PTSD arose relatively soon following the Vietnam conflict, the observation that traumatic events can lead to this plethora of psychobiological manifestations is not new. During the Civil War, a PTSD-like disorder was referred to as the 'Da Costa's Syndrome' from the American internist Jacob Mendez Da Costa (1833–1900; Civil War duty: military hospital in Philadelphia).

The syndrome was first described by ABR Myers (1838–1921) in 1870 as combining effort fatigue, dyspnea, a sighing respiration, palpitation, sweating, tremor, an aching sensation in the left pericardium, utter fatigue, an exaggeration of symptoms upon efforts and occasionally complete syncope. It was noted that the syndrome resembled more closely an abandonment to emotion and fear, rather than the 'effort' that normal subjects engage to overcome challenges. This classic observation pertains to what we now know of allostasis, as we discuss below. Da Costa reported in

1871 that the disorder is most commonly seen in soldiers during times of stress, especially when fear was involved . The syndrome became increasingly observed during the Civil War and during World War I.

CHAPTER 2

Literature Review and research : Impact of PTSD on First Responder

Given that emergency work entails always being at the forefront of virtually all tragic events, emergency workers frequently get to interact with human suffering and pain on a daily basis. That puts them at risk of developing PTSD, anxiety, depressive episodes, impaired memory, and a low concentration span. Other issues they face include irritability, loss of detachment, dissociation, recurrent dreams, and physical disturbances even though they undergo rigorous training that is ideally meant to equip them to handle such situations. Researchers agree that in emergency service delivery practice, there is at least a chance to experience a once-in-a-lifetime event that is so gross and beyond the scope of training of emergency workers and difficult for them to contend with (Muhammad, Ahmad, & Baik 2018). Some of those interviewed mentioned the terrorist attacks of September 11, 2001, as being too graphic for them ever to forget.

The typical work of emergency and rescue personnel entails evacuating vulnerable people, such as children and women who are trapped in buildings set on fire, extricating the remains of suicide victims, and averting the wanton destruction of property (Muhammad et al., 2018). It has been established that these events have a profound impact on not just their physical but also mental and psychological well-being, and that of their family members. Thus, it predisposes them to re-experience or relive the tragic once-in-a-lifetime

events that they have faced when they encounter similar stimuli (Marmar et al., 2016). This is one of the manifestations of PTSD. Consequently, they are at risk of indulging in drugs and substance abuse, and at worse, even suicide.

Quiet events, far from mass casualties that perpetually make headlines are more likely to trigger emotional responses that ultimately contribute to PTSD in emergency workers. Such events include isolated cases of suicide of individuals who get the going too tough to handle, deaths involving elderly persons, and the gruesome murder of a spouse by a jilted lover (Muhammad et al., 2018). These events are likely to occur much more frequently compared to the once-in-a-lifetime occurrences like train or shipwrecks, bomb blasts, mass shootings, and other natural disasters (Regehr, Hill, & Glancy, 2017). The focus emphasized here is that cases involving mass casualties can more easily invite a lot of scrutiny and research when compared to everyday emergencies, emergency workers deal with. In empirical studies done on emergency responders that link these tragic events to future PTSD development, clinical experiences implicated in causing distress in these populations also include the death of a co-worker in the line of duty, physical assaults by members of the public, and witnessing acts of violence.

Several studies reveal the impacts of everyday emergencies ultimately contributes to PTSD in emergency workers. "Exposure to critical events" records of three exposure study groups involving 86 paramedics, 164 fire-fighters from Canada and Australia confirms the assertions mentioned above (Regehr et al., 2017). Over 80% of paramedics reported having experienced each of the tragic events about which they were asked. Those events were deaths of children, mass casualties and witnessing the death of patients. Close to 70% of those paramedics were reported to at least have been assaulted at some point, and said they felt their security had been threatened most of the time (Alexander & Klein, 2015). Paramedics were more likely to have been assaulted at 70% of the time, during

emergencies (Regehr, Chau, Leslie, & Howe, 2012). About 40% of the fire-fighters in Canada reported having interacted with mass casualties, whereas about 40% from both countries reported having witnessed the demise of an individual who was under their care.

The following statistics serve as a threshold for identifying which emergency responders qualified to have gone through “significant emotional distress” that had psychological implications on their well-being. The percentage of paramedics who witnessed the death of patients in their care was about 30%, and the percentage of emergency volunteer fire-fighters who reported to have had their security threatened in New South Wales was put at about 56% (Marmar et al., 2016). Researchers were also able to establish that the events which caused the greatest distress in these emergency workers are as follows in the order of importance and impact; deaths that involved children, deaths involving co-workers in the line of duty, and deaths involving patients for whom the respondent emergency worker was entrusted with their care (Regehr et al., 2017). Regarding violence meted out on children, neglect, and abuse, respondents reported having been so moved by the suffering that they were able to recollect fine details regarding the circumstances pertaining to every unique case they had come across.

Understanding the development of PTSD starts with understanding the theories postulated in helping the body respond to adversity. These theories include the stress theory, occupational stress theory, crisis theory, trauma theory, and the vicarious or secondary trauma theory (Regehr et al., 2017). The stress theory is founded on the idea that there are biological adaptations that the body mounts when faced with acute threats, and these can be thought of as, “flight” or “fight” response. This involves shifting of energy to the large muscles and an elaborate systemic increase in blood pressure and respiration to meet the body’s new demands (Marmar et al., 2016). As a result, a General Adaptation Syndrome theory that describes a three-step model for the body’s responses to stress has since been

developed. These steps are mobilization and alarm, resistance, and exhaustion that aims to predict the body's course of action.

Psychosocial factors which account for recurrent adversity and stress are emphasized in this new model (General Adaptation Syndrome theory). Since they present an allostatic load, which refers to the continuous strain on an individual (Regehr et al., 2017). Social relationships have a buffer action on the wear and tear caused by these stressors, and this is more so in women than men. Lazarus and Folkman (2014) came up with two appraisal systems that major in bio-behavioral aspects of stress, which shifts attention to the cognitive effects caused by these stressors. The incorporation of the cognition process in stress underscores the fact that stress is not just a mere physiologic reaction, but also can alter people's responses. Primary appraisal involves the perception of an event as benign or stressful, whereas secondary assessment has to do with the estimation of one's ability to cope using appropriate responses.

The Conservation of Resources (COR) theory postulated by Hobfoll reaffirms the critical role of the appraisal theory by emphasizing the value of resources. In this theory, stress is determined by the loss or gain in crucial social or personal resources that have huge meaning to a person. Individuals strive to protect, attain, and defend resources such as self-love and knowledge; and stress arises when these resources are deficient (Regehr et al., 2017). The crisis theory hypothesizes that the exposure of an individual to sudden events that they are not adequately prepared to handle at a given time leaves them psychologically vulnerable to develop feelings of anxiety, helplessness, shock, depression, confusion, and PTSD in the long term (Marmar et al., 2016). These result in feelings of guilt, reduced self-esteem, and emotional distress.

The trauma theory has neuropsychological implications for individuals undergoing post-traumatic stress. It states that there are long standing alterations in the cellular biology with increased amygdala action, diminished levels of cortisol, hypothalamic alterations, and a marked startle response which fails to habituate (Marmar et al., 2016). This is in contrast to ordinary experiences of fear, where there is a return to normal levels of these neuropsychological changes (Marmar et al., 2016). In this theory, stimulation by traumatic experiences and images lead to a hyper-arousal of the autonomic nervous system that continuously recurs. This is marked by alterations in memory sequence of the events and disorganization that renders these individuals to hyper-vigilance, impulsive and agitated with occasional periods of normalcy.

Studies, however, show that between 50-80% of respondents from either male or female gender undergo traumatic life events. However, these events do not culminate in post-traumatic stress disorder (PTSD) (Alexander & Klein, 2015). This insinuates that there are people that are more adaptive and resilient, when faced with potentially traumatizing events. The theory of vicarious traumatization states that, by listening to graphical accounts of experiences faced by others, an individual develops alterations in their world perspective, sleep disturbances, altered arousal, phobias, and intrusive imagery experiences (Regehr et al., 2017). It has the effect of resulting in guilt, hopelessness, cynicism, burnout, and pessimism if it continues with time.

The critical incident stress (CIS) theory relates to the direct effects that a stressor event has on the psychological well-being of a person that has the first-hand experience of a tragedy or natural catastrophe. Stressor events can be psychosocial or physical, and they may result in behavioral and cognitive manifestations (Marmar et al., 2016). The occupational stress theory examines the macro aspects of emotional and physical responses that render a worker incapable of meeting the overwhelming demands of the workplace (Regehr et al.,

2017). Models that have been brought forward to explain this theory include the social role theory approach, the demand or control or support model, and the effort-reward imbalance model.

The demand or control or support approach correlates psychological implications of work factors, such as overload on an individual worker, whereas the effort-reward imbalance model investigates the rewards and input in work and how much strain it puts to the workers (Regehr et al., 2017). The social-role theory comes into play, where there is ambiguity or conflicting societal expectations between expectations and demands. Workplace related negative psychosocial factors are likely to aggregate into resentment, exhaustion, and diminished productivity.

The ecological framework provides a comprehensive perspective of individuals and their environment and thus, provides a context for the study and analysis of individual reactions to adverse life events. The World Health Organization (WHO) states that life circumstances and workplace dynamics play a role in the health of any given society (Marmar et al., 2016). Interventions aimed at improving public health are focused at primary, secondary, and tertiary approaches. Distress reactions occur when an individual is exposed to life-threatening or tragic events that are beyond the scope of their coping mechanisms.

In this paper, this does not just apply to the victims of these tragic events, but also to the individuals who witnessed the unfolding of events and reported feeling helpless as the events unfolded. Secondary trauma, therefore, is the phenomenon that occurs when an individual is exposed to catastrophic events that befall another person (Lazarus & Folkman 2014). This helplessness, despair, and horror may culminate in PTSD, which is

the term that refers to the cluster of symptoms discussed in the Diagnostic and Statistical Manual of The American Psychiatric Association (DSM IV-TR).

There are three distinct clusters of symptoms unique to PTSD namely: re-experiencing symptoms that involve the individual reliving memories of the event usually by way of recurring flashbacks that may be sensory, visual or auditory, avoidance symptoms in which the individual frantically tries to keep off thoughts, places, and people that may trigger memories of the ordeal (Lazarus & Folkman 2014). The arousal symptoms are characterized by agitation, irritability, impulsivity, hyper-vigilance, and hyper-arousal (Lazarus & Folkman 2014). The third symptom, which is the intrusive symptoms, has been reported by some as their worst experience, since such symptoms are bordered on interrupting their sleep cycles via the graphic nightmares that they get.

In studies done on paramedics, fire-fighters, and the police; it was revealed that at a random given moment, about 57.1% had zero to a low-level symptom, about 18.3% qualified as moderate and about 4.2% proved to have high levels symptoms. Those with symptoms that were categorized as severe were about 20.4% (Alexander & Klein, 2015). More studies on ambulance workers, police, and firefighters showed that between 25-30% of those sampled had high or severe levels of stress symptoms. Associated long-term consequences of PTSD were substance abuse and depression. Family members of the affected individuals were also reported to be emotionally distant and disengaged from each other. Arguments were the order of the day in such households and in some cases, family violence was rampant. This manifests to the outer society as increased numbers of suicide cases, and higher divorce rates among these populations.

There are different psychiatric rating instruments and scales that can be used to assess adult PTSD. Some are part of comprehensive diagnostic

manuals or instruments: DSM-IV TR (diagnostic criteria for 309.81 PTSD) ICD-10 (F43.1 PTSD, from the International Statistical Classification of Diseases and Related Health Problems, 10th revision); the PTSD module,

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There are different psychiatric rating instruments and scales that can be used to assess adult PTSD. Some are part of comprehensive diagnostic manuals or instruments: DSM-IV TR (diagnostic criteria for 309.81 PTSD) ; ICD-10 (F43.1 PTSD, from the International Statistical Classification of Diseases and Related Health Problems, 10th revision); the PTSD module, within the Structured Clinical Interview for DSM-IV or the PTSD Keane scale (PK scale) , within the Minnesota Multiphasic Personality Inventory-2 (MMPI-2).

Some are designed as either self-reports or as clinician-administered instruments specifically assessing adult PTSD: Davidson Trauma Scale Distressing Event Questionnaire ; Impact of Event Scale-Revised Trauma Symptom Checklist-40 ; PTSD Checklist-Civilian Version ; Revised Civilian Mississippi Scale for PTSD ; the Posttraumatic Stress Diagnostic

Scale ; Trauma Symptom Inventory ; Los Angeles Symptom Checklist or the Clinician-Administered PTSD Scale (CAPS).

The underlying phenomena of PTSD are probably centrally mediated. Case in point is a study targeting women with early childhood abuse-related PTSD that found correlates of the emotional Stroop . Subjects with and without PTSD were compared. Both groups underwent PET scanning while performing in the color and emotional Stroop tasks and control condition. The control condition involved naming the color of rows of XXs (red, blue, green and yellow). The active color condition involved naming the color of color words (again with the same four colors), while the semantic context of the word was incongruous with the color. The active emotional condition involved naming the color (again the same four colors) of emotionally charged words (rape, bruise, weapon, and stench). These words have been shown to produce emotional arousal . The study examined the effectiveness of the Stroop task as a probe of anterior cingulate function in PTSD, because of the role of the anterior cingulate and medial prefrontal cortex in stress response and emotional regulation. After comparing it with the color Stroop, the emotional Stroop displayed significantly decreased blood flow among the PTSD subjects in the anterior cingulate. Performance in the color Stroop task produced a non-specific activation of the anterior cingulate in both the PTSD and non-PTSD abused women. However, the emotional Stroop produced a relatively lower level blood flow response of anterior cingulate among PTSD abused women. These observations may indicate that PTSD anterior cingulate dysfunction is specific to the neural circuitry of the processing of emotional stimuli. Shin

et al. confirmed a relative decrease in blood flow in anterior cingulate activation in combat-related PTSD and also displayed a decreased blood flow for the emotional (but not color) Stroop. Taken together, these findings indicate that PTSD may have a neural component, which could significantly alter psychoneuroendocrine-immune regulation, as discussed below.

i.

CHAPTER 3

PTSD Assessment in the Military

The prevalence of PTSD diagnosis varies depending on the assessment method. One study compared three measures of PTSD among American and Korean War prisoners of war (POWs). It compared an unstructured self-report interview measure, the M-PTSD and the DSM-III-R SCID instrument. The data showed that partially unstructured interviews and the M-PTSD yielded PTSD prevalence rates of 31 and 33%, respectively, which were significantly higher than the rate of 26% yielded by the SCID. Both the unstructured clinical interview and the M-PTSD had equal accuracy, consistently disagreeing with the SCID from 7 to 15% of assessed cases .

Such differences in rates, depending on the assessment instrument, may hold significance. According to the study there may be different explanations; self-report instruments like the M-PTSD do not reflect DSM criteria as comprehensively as the SCID. Symptoms may differ in both intensity and kind among older and younger prisoners of war. On the paradoxical side, it is possible for an individual to be diagnosed with PTSD while reporting minimal stress levels; in fact, subjective stress can be seen as a confounding factor that can have an influence on diagnosis .

A PTSD-negative clinical interview occurring simultaneously with a PTSD confirmation of PTSD (or also with a moderate-to-low M-PTSD score) may be indicative of chronic, but stable, PTSD. Such chronic and stable PTSD may not be clinically relevant and may not require focused

intervention. They recommend measuring symptom intensity with such instruments as the CAPS . Such an approach could decrease PTSD-positive diagnoses among subjects with low levels of distress .

CHAPTER 4

Allostasis and PTSD

Allostasis and the Response to Stress

Allostasis refers to the psychobiological regulatory process that brings about stability through change of state consequential to stress. Psycho-emotional stress can be defined as a perceived lack, or loss of fit of one's perceived abilities and the demands of one's inner world or the surrounding environment (i.e. person/environment fit). Traumatic events that trigger PTSD are perfect examples of such onerous demands that lead to the conscious or unconscious perception on the part of the subject of not being able to cope .

The perception of stress is often associated with psychological manifestations of anxiety, irritability and anger, sad and depressed moods, tension and fatigue, and with certain bodily manifestations, including perspiration, blushing or blanching of the face, increased heart beat or decreased blood pressure, and intestinal cramps and discomfort. These signs mirror the spectrum of psychobiological symptoms in PTSD. These manifestations are generally associated with the nature of the stress, its duration, chronicity and severity. A group of symptoms, now referred to as the sickness behavior, is also noted to be associated with clinically relevant changes in the balance between the psychoneuroendocrine and the immune systems .

It was the renowned nineteenth-century French physiologist, Claude Bernard (1813–1878) who first proposed that defense of the internal milieu (*le milieu intérieur*, 1856) is a fundamental feature of physiological regulation in mammalian systems, whence the phrase ‘homeostasis’ was coined. By the early 1930s, Walter Cannon (1871–1945) proposed that organisms engage in a dynamic process of adjustment of the physiological balance of the internal milieu in response to changing environmental conditions. Hans Selye (1907–1982) established the cardinal points of the ‘Generalized Stress Response’ in his demonstration of concerted physiological responses to stressful challenges.

Stress alters the regulation of both the sympathetic and the parasympathetic branches of the autonomic nervous system, with consequential alterations in hypothalamic control of the endocrine response controlled by the pituitary gland. Autonomic activation and the elevation of hormones, including those produced by the hypothalamic-pituitary-adrenal axis, play a pivotal role in regulating cell-mediated immune surveillance mechanisms, including the production of cytokines that control inflammatory and healing events. In brief, the perception of stress leads to a significant load upon physiological regulation, including circadian regulation, sleep and psychoneuroendocrine-immune interaction.

In brief, stress is profound alterations in the cross-regulation and interaction of the hormonal-immune regulatory axis. The experience of stress, as well as that of traumatic events and the anxiety-laden recollections thereof, produce a primary endocrine response, which involves the release of glucocorticoids (GCs). GCs regulate cellular immune activity *in vivo* systemically and locally. They block the production of pro-inflammatory cytokines (e.g. interleukin[IL]-1 β IL-6) and TH1 cytokines (e.g. IL-2) at the molecular level *in vitro* and *in vivo*, but may have little effects upon TH2 cytokines (e.g. IL-4). The net effect of challenging immune cells with GC is to impair immune T cell activation and proliferation, while maintaining antibody production. The secretion of GC by the adrenal cortex is under the control of the anterior pituitary adrenocorticotrophic hormone (ACTH). Immune challenges release pro-inflammatory cytokines (e.g. IL-1 β , IL-6), which induce hypothalamic secretion of the ACTH inducing factor corticotropin releasing factor (CRF)

in animal and in human subjects. Stressful stimuli also lead to the significant activation of the sympathetic nervous system and a rise in the levels of pro-inflammatory cytokines (i.e. IL-1 β and IL-6). It follows that the consequences of stress are not uniform. The psychopathological and the physiopathological impacts of stress may be significantly greater in certain people, compared with those of others. The impact of stress is dynamic and multifaceted and the same person may exhibit a variety of manifestations of the psychoneuroendocrine-immune stress response with varying degrees of severity at different times. The outcome of stress can be multivalent

CHAPTER 5

Types of Treatment

Types of PTSD treatment offered at Sierra Tucson

As an internationally known and respected treatment provider of medical, therapeutic, and experiential services, our treatment center is pleased to offer state-of-the-art treatment for a wide range of behavioral health concerns.

Through the integration of evidence-based practices and integrative therapies,

our rehab center prides itself on being a leading provider of services that are effective in treating addictions and other behavioral health conditions. Holistic and individualized treatment is the cornerstone of the best care offered at our treatment center, and is provided by a staff of qualified and experienced professionals. Our rehab's primary goal is to deliver services in such a manner that all who come to us for treatment will benefit from our services and resume the pursuit of a healthy and productive lifestyle.

As part of the individualized care we offer, the admissions process will begin in our secure behavioral health inpatient unit. You will meet with our psychiatrists and nurses to receive a comprehensive assessment that includes a physical exam, psychiatric evaluations, a skin assessment, and optional genetic testing.

To provide the attention and safety you deserve, this unit is conveniently located in the center of our campus and offers the opportunity for a bi-directional continuum of care within our levels of treatment.

The behavioral health residential treatment supplied by Sierra Tucson, a premier PTSD treatment center, is designed to elicit the most favorable treatment outcomes for all residents. With four distinct treatment options available, residents receive the beneficial services they need in order to live an abundant life. With specific regards to those wishing to rebuild their lives after enduring a trauma, Our rehab's Trauma Recovery Program is specially designed to care for the symptoms of post-traumatic stress disorder, trauma related to sexual abuse or non-sexual trauma, and the additional concerns that

are known to afflict these individuals. This treatment is intensive in nature and implements our bio-psycho-social-spiritual approach to care.

The types of services you receive will be determined by your treatment team.

Once an assessment determines that a resident is appropriate for this treatment, the individual will then begin their journey to discovering personal and emotional truths concerning fear, honesty, trust, and dependency.

Additionally, residents can partake in the following treatment methods, which are outlined in a resident's treatment plan and our treatment center's daily treatment schedules:

Medication management: Residents engaged in the Trauma Recovery Program at our rehab are able to meet with a medical provider to determine the need for medication, monitor medication, and adjust any medication prescribed in order to ensure optimal alleviation of mental health symptoms, including those associated with post-traumatic stress disorder. Registered nurses and clinical technicians also assist in monitoring a resident's medication needs. While every resident may not require these services, they are available should these services meet their needs.

Individual therapy: Master's-level clinicians and/or licensed psychologists at our treatment center conduct individual therapy sessions with residents based on the treatment modality that is being administered. Individual therapy sessions are a time in which residents can process their progress, concerns, and feelings one-on-one with a qualified mental health professional.

Group therapy: Upon admission to the Trauma Recovery Program at our rehab, residents are assigned a small group of peers with whom they will meet with a primary therapist. In addition to the peer group, other groups are supplied by this treatment. Topics covered within these groups include, but are not limited to:

- Processing grief and loss
- Relapse prevention
- Healing anxiety
- Anger management
- Didactic lectures
- Mindfulness
- Resilience training

Therapeutic & Recreational Activities: In order to help residents build a stronger sense of self and confidence, our treatment center offers a Therapeutic & Recreational Activities Program. This treatment option includes the following therapeutic activities, which are conducted to stress the importance of physical activity:

- Equine therapy
- Adventure therapy, which includes a ropes course and rock wall
- Psychodrama
- Yoga
- Movement therapy

- Daily walk after dinner or before evening treatment
- Personal training

Should a resident require stabilization services while engaged in our rehab center's residential treatment, they are able to participate in the services supplied before returning to residential treatment. The staff of professionals conducts an ongoing assessment of each resident's progress and needs and offers assistance in making this transition smooth so as to continue the process of healing with as little disruption as possible.

CHAPTER 5-1 NURSING INTERVENTION FOR THE PATIENCE WITH PTSD

With proper training, health care professionals in multiple disciplines — including psychologists and psychiatrists, advanced social workers, licensed professional counselors, and psychiatric mental health nurse practitioners (PMHNPs) — can conduct PTSD interventions.

Advanced practice nurses with mental health expertise can administer or assist in the administration of primary PTSD therapies and treatments:

- **Cognitive therapy.** A type of talk therapy, cognitive therapy helps patients recognize and modify potentially harmful thinking patterns, such as fears that traumatic events will recur.
- **Exposure therapy (ET).** Used to help PTSD patients reduce flashbacks and nightmares, ET lets patients safely face frightening situations and memories until they are better able to cope with them. Exposures can be real or imagined. Virtual reality technology can also be used for ET.
- **Eye movement desensitization and reprocessing (EMDR).** Used in conjunction with exposure therapy, EMDR therapy involves a series of guided eye movements that help patients process traumatic memories and manage their reactions.
- **Psychopharmacology.** PTSD symptoms can be treated with any of multiple types of medications, including antidepressants and

anti-anxiety drugs. Prazosin has been identified as a possible aid in reducing or suppressing nightmares in some people with PTSD, but its efficacy is still being studied.

Strategies for treating PTSD vary from person to person, and determining the optimal intervention strategy for a given patient requires careful assessment. Training in psychopharmacology and psychotherapies is essential, but advanced communication skills are also crucial.

5-2 The Skills Needed for Successful Interventions

Training to become a psychiatric mental health nurse practitioner (PMHNP) builds on core nursing competencies, teaching nurses to provide mental health diagnostic evaluations, treatment planning, psychotropic medication management, and therapy. It also cultivates the advanced communication skills necessary for PTSD interventions and other advanced mental health treatments.

Essential to all nursing practices, active listening skills help nurses collect vital data about patients' trauma history and gauge their current mental state and anxiety levels. By demonstrating empathy and compassion, validating emotional

reactions, and de-emphasizing language that is overly clinical or pathological, nurses can create a dynamic that is person-to-person rather than expert-to-victim. Maintaining calm, demonstrating patience, and explaining that symptoms are normal can also help patients who may be experiencing high levels of anxiety.

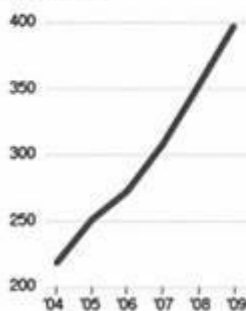
Once trust has been established and a nurse and patient have built rapport, coping techniques — maintaining routines, identifying ways to relax, recognizing triggers — can be explored. Encouraging patients to talk only when they are ready, nurses can also help those with PTSD express emotions (orally or in writing) and identify additional resources and supportive family and friends.

TREATMENT WITH MEDICATIONS

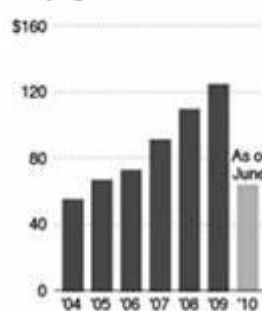
Psych drug for sleepless vets widely prescribed

The Department of Veterans Affairs is prescribing a powerful psychiatric drug as a sleeping aid to veterans with post-traumatic stress disorder, an unapproved use that exposes them to potentially dangerous side effects. The VA's spending on prescriptions for the drug Seroquel has increased more than seven-fold since 2001. Seroquel has been among the agency's top 10 drugs by spending since 2004 and was the VA's No. 2 drug by spending in 2009.

Eligible Veteran Administration users diagnosed with PTSD*, in thousands



Total VA spending on Seroquel, a psychiatric drug used as a sleeping aid, in millions



Top 10 VA prescription drug purchases in 2009, in millions of dollars

DRUG	TREATMENT	AMOUNT
Plavix	Blood thinner	\$162
Seroquel	Antipsychotic	\$125
Insulin	Diabetes	\$112
Zyprexa	Antipsychotic	\$94
Ventolin	Asthma	\$76
Effexor	Antidepressant	\$67
Aricept	Alzheimer	\$62
Abilify	Antipsychotic	\$59
Risperidol	Antipsychotic	\$58
Glucose Test	Diabetes	\$56

*Diagnosis of PTSD is defined as at least two outpatient encounters or one inpatient bed day with a PTSD diagnosis

SOURCE: Department of Veterans Affairs

AP



CONCLUSIONS

Emergency respondents and rescue workers are affected by tragic events, just as much as the real victims. They put their lives in harm's way to save others and might get injured or even have themselves killed, maimed for the rest of their lives or suffer adverse psychological effects in the process. These include PTSD that may predispose them to substance abuse, depressive episodes, anxiety, and even suicidal tendencies. These effects may have consequences not just on their health, but also on those with whom they closely interact, such as their spouses. Spouses may suffer divorce, since divorce rates are higher among these populations; their children may suffer neglect, in the case where these people (emergency workers) who are breadwinners' resort to substance abuse and neglect of their parental duties. On the larger scale, the economy might suffer a lack of productivity, due to suboptimal performance as a result of diminished

workplace productivity. There should thus be research-based mechanisms, such as counseling and fostering strong social relationships that can be used in the care of these individuals

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