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THESIS

Characteristics of Military Members Hospitalized with a
Psychiatric Diagnosis During the Persian Gulf War

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CHARACTERISTICS OF MILITARY MEMBERS HOSPITALIZED
WITH A PSYCHIATRIC DIAGNOSIS DURING
THE PERSIAN GULF WAR

By

JULIE K. STRONG

A THESIS PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT
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MASTER OF SCIENCE IN NURSING

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This thesis is dedicated to my father Dale,
who courageously fought in wars past,
And to my brother Bryan, who with the Grace of God,
has fought in our last.



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Abstract of Thesis Presented to the Graduate School of
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By

Julie K. Strong

May 1992

Chairperson: Karolyn Godbey
Major Department: Nursing

The purpose of this study was to identify and describe characteristics of military members serving in the Persian Gulf War who were hospitalized with a psychiatric diagnosis. Data was collected by reviewing charts and computerized records of a convenience sample of 99 military members from one Air Force Treatment Facility in Wiesbaden, Germany.

Most of the military members hospitalized with a psychiatric diagnosis were between the ages of 18 to 25 ($n = 47$). The majority were white ($n = 69$), married ($n = 54$), men ($n = 79$) in the U.S. Army ($n = 78$) on active duty status ($n = 63$). The subjects were enlisted with approximately two years in service and 16 weeks in the Middle East. Motor vehicle operators ($n = 21$) and medical personnel ($n = 15$) were most likely to be admitted with a psychiatric diagnosis. Finally, Adjustment Disorder ($n = 53$) was the psychiatric diagnosis given most frequently.

CHAPTER I INTRODUCTION

The acute mental breakdown of men during combat is an age-old phenomenon (Glass, 1951). Even the Bible describes the panic and paralyzing fright of participants in battle. Powerful military strategy works to weaken and disorganize the enemy by using the crippling effects of fear stimuli (Glass, 1951). The Chinese troops' use of bugles, cymbals, and whistles is an ancient maneuver of this type. In modern warfare, artillery fire, the potential use of biological and/or chemical warheads, air attacks, actual combat casualties, and now SCUD missiles are the most prolific producers of fear (Glass, 1954; Mathews, 1991).

It is evident then, that any method designed to increase the strength and number of fearful stimuli may serve to undermine the ability of persons to react aggressively (Glass, 1951). Although the physiological responses to fear are valuable, preparing the soldier for 'fight or flight', the subjective sensations of fear are not helpful to a person, but are painful (Glass, 1954). These feelings make it difficult for an individual to think logically and coherently, and they actually work to inhibit physical activity, thus 'paralyzing' the body with fear.

The complex phenomenon related to 'fight or flight' can be explained by the internal environment of the soldier.

That is, as conflict rages on outside the soldier, an even more disturbing conflict takes place between the limbic system and cortex of the individual's brain (Rohe, 1988). The limbic system is the part of the brain that underlies 'base', 'primitive', or survival emotions and instincts. These include anger, fear, aggression, eating and reproduction. Conversely, the cortex, or gray matter, contains the highest level of functioning of the brain and is responsible for conscious thought. It underlies intelligence, sense of duty, and right and wrong. During combat, the soldier experiences the acute conflict between these two, whereby fear generated from the limbic system demands that the individual leave the dangerous situation, ensuring survival and protection, and the cortex insists the soldier stay, out of duty to country and fellow troops (New, 1982).

Ordinarily during a conflict of this nature, individuals control the lower part of the brain, the limbic system, with the higher level cortex. Because the stresses of combat can be great though, and fear pervasive, this struggle intensifies making it increasingly difficult for the soldier to control. The consequent lack of control may manifest itself in a variety of ways. At worst, the soldier may become psychotic and begin to hallucinate, unable to distinguish reality from unreality. Fortunately this is an uncommon presentation and does not occur often. However, overwhelming stress in any circumstance may precipitate a

psychiatric illness. War, being an extreme form of stress, not only results in psychiatric problems specifically related to the stress of combat, but may also exacerbate or provoke an underlying psychiatric condition (Grinker & Spiegel, 1945; Solomon, Schwarzwald, & Weisenberg, 1985).

Less severe reactions to the stresses of combat include conversion disorders. A conversion disorder resembles a physical injury but with no organic lesion or explanation (American Psychiatric Association, 1987). A soldier experiencing a conversion reaction may complain of a physical disability but present no physiological findings upon evaluation. The most frequent manifestation occurs when the soldier develops a variety of vague symptoms including, but not limited to, feelings of depression and anxiety, poor appetite, disturbance of sleep, vague aches and pains, and disturbing dreams. Although this is a perfectly normal response to this 'abnormal' situation, when the symptoms become severe enough to disable a person, they have become a combat psychiatric casualty (Kentsmith, 1986).

Throughout history, the emotional turmoil experienced by soldiers in combat has been known by a variety of names including: irritable heart syndrome or nostalgia during the Civil War; shell shock or war neurosis throughout World War I; and, combat exhaustion or battle fatigue during World War II. After the Vietnam war, diagnoses of Vietnam-syndrome, post-disaster syndrome, and gross stress reaction were frequently made, although these were never official American

Psychiatric Association diagnoses. Of these seemingly different and distinct diagnostic entities, a single syndrome of anxiety, recurrent nightmares, insomnia, numbing of responsiveness, poor concentration, irritability, and autonomic hypersensitivity exists (American Psychiatric Association, 1980). Though many clinicians throughout the medical community questioned the validity of such a disorder (Helzer, Robins, & McEvoy, 1987), a compromise of the diagnosis post-traumatic stress disorder (PTSD) was finally reached and represented in the 1980 edition of the American Psychiatric Association Diagnostic and Statistical Manual III (DSM-III).

Combat Stress Reaction (CSR), is the current terminology used by military psychiatrists to describe the condition in which soldiers are unable to perform their duty because of extreme psychological disturbance (Solomon, Mikulincer, & Hobfoll, 1986). The soldier is unable to utilize effective coping mechanisms to deal with both internal and external pressures. The soldier ceases to function militarily and/or begins to function in a bizarre manner that usually endangers him/herself and/or his/her comrades, and has the potential to jeopardize the military mission (Schaub & McGlaughlin, 1990). CSR symptoms are not uniform but include labile, polymorphic manifestations: restlessness, psychomotor retardation, psychological withdrawal, sympathetic activity, startle reactions, confusion, gastrointestinal upset, and paranoid ideation

(Grinker & Spiegel, 1945). Symptoms may be as varied as catatonia, incapacitating anxiety, and conversion reactions (Kardiner, 1947).

Combat stress reaction differs from PTSD in that CSR is the immediate psychological breakdown of an individual during combat conditions, and PTSD is reserved for those who display a relative decline in functioning following exposure to a traumatic stress event outside the range of normal human experience (American Psychiatric Association, 1980; Solomon, Mikulincer, & Hobfoll, 1986). However, the distinction is obscured given that combat stress, especially when treated improperly, may have long lasting effects causing the individual to experience prolonged and profound psychiatric disturbances, such as PTSD (Solomon, Weisenberg, Schwarzwald, & Mikulincer, 1985).

Combat stress reaction accounts for 30% to 40% of all combat casualties in the wars of the 20th century, prior to the Persian Gulf War (Mareth & Brooker, 1985). Based on this data, it was predicted that future wars would sustain a high CSR rate within the first 24 hours due to an unprecedented level of intensity and a sustained, round-the-clock mode of operation (Schneider & Luscomb, 1984). Initial reports from the Gulf War have not yet supported these predictions. However, psychiatric casualties did occur, and thus, it is imperative that military commanders and mental health providers learn as much as possible about these individuals and any indicators

which may predict the potential for a military members' maladaptation to the stresses of war.

Purpose of the Study

The purpose of this study is to identify and describe demographic characteristics of military members serving in the Persian Gulf War who were hospitalized with a psychiatric diagnosis. Additionally, the frequency with which these characteristics and diagnoses occurred will be discussed.

Research Questions

1. What are the demographic characteristics of military members hospitalized with a psychiatric diagnosis during the Gulf War, and the frequency with which these characteristics occurred?
2. What is the frequency of psychiatric diagnoses in military members hospitalized during the Gulf War?

Definition of Terms

For the purpose of this study, the following definitions of terms are used:

Combat psychiatric casualty is an individual who experiences a psychiatric problem during combat that requires psychiatric care. The problem may be acute and of short duration in which the individual returns back to duty, or chronic, whereby the individual is evacuated to a rear hospital.

Soldier is any military member, male or female, representing the Army, Navy, Air Force or Marines.

Theater of Operations is a large area where war operations occur. This area is divided into the combat zone and the communication zone.

a. Combat Zone: area where enemy hostilities have the potential to take place. This zone is further subdivided into three levels: unit level, divisional level, and corps level. The unit level is closest to the front line and contains aid stations where psychiatric casualties are briefly evaluated and then transferred to the divisional level. The divisional level, directly behind the unit level, contains the sanitary divisional formations or field-type provisional medical facilities, where psychiatric casualties are treated for approximately 4-7 days and then returned to combat duty. In this area, the soldiers remain close enough to their units to maintain troop cohesion and identity, and rapid recovery is expected. If the soldier does not recover, or if the psychiatric diagnosis is other than combat stress reaction, the soldier is evacuated to a mobile or field hospital in the corps level. The corp level is behind the divisional level, and hospitals in this area are considered 'rear' hospitals or the most forward evacuation hospitals. Soldiers who do not recover will be further evacuated to a fixed general hospital in the communication zone (the farthest rear hospital), and eventually evacuated to a hospital out of the theater of operations.

b. Communication Zone: an area behind the combat zone. The potential for enemy hostilities is significantly decreased in this area. The communication zone contains fixed general hospitals which are the farthest rear hospitals in the theater of operations.

Assumptions

Assumptions basic to this study are:

1. War is a traumatic event that is outside the range of usual human experience (American Psychiatric Association, 1987).
2. The psychiatric diagnoses in military members during the Persian Gulf War are related to having been in the war.

Limitations

This study is limited to military members found in one Air Force hospital during the Persian Gulf War operations.

CHAPTER II REVIEW OF THE LITERATURE

Chapter II will present a literature review of combat stress reaction in military members during the Civil War, World Wars I and II, the Korean War, Vietnam War, and the most recent Persian Gulf War. Additionally, this chapter will review the literature on variables in the development of post-traumatic stress disorder and personal characteristics of military members that may contribute to the development of combat stress reaction.

War appears to be one of the few constants throughout recorded history. Mans' unending chain of struggles between warring hordes, tribes, states, and nations can be dated back to Biblical times. Durant notes that "in the last 3,421 years of recorded history, only 268 have seen no war" (Durant & Durant, 1968, p. 223). However, detailed descriptions and recordings of the psychological and physical symptoms experienced by soldiers in combat who had not actually sustained a physical injury did not begin until the United States Civil War.

The Civil War (1861-1864)

The first description of anxiety symptoms in response to a significant stressor appeared in the literature in 1871 in an article by DaCosta (Andreasen, 1985). DaCosta described a Civil War soldier who presented with symptoms of

chest pains, palpitations, and dizziness. This was referred to as irritable heart syndrome, thus beginning the description of physiological response to war stress (Andreasen, 1985). The syndrome was later expanded to heart neurosis by MacCurdy (1917). MacCurdy (1917) claimed that soldiers with "disordered action of the heart have a coloring of anxiety, associated with wish for death before the actual symptoms. Others wish rather for the incapacitating wound, and then, when the heart symptoms develop, they are regarded more as a disease, without the same anxiety" (p.243).

Further review of U.S. Army Medical Service reports during the Civil War reveals no official concern with the problems of neuropsychiatric casualty (Duncan, 1916; Hume, 1943). However, in a psychiatry textbook published almost 20 years later, William Hammond (1883), Surgeon General of the Union Army during the Civil War period, described a wartime syndrome of nostalgia. Nostalgia was described as a "species of melancholy, or mild type of insanity, caused by disappointment and a continuous longing for the home" (Anderson & Anderson, 1984, p. 158). Symptoms of nostalgia included "great mental dejection, loss of appetite, indifference to external influences, slight hectic fever, anxious expression of the face, hysterical weeping, watchfulness, and a general wasting of all the vital powers" (Anderson & Anderson, 1984, p. 159). Hammond (1883) wrote

that the best means of preventing nostalgia was to "provide occupation for both the mind and the body" (p. 413).

Hammond further concluded that soldiers placed in hospitals close to their homes were more prone to nostalgia than those who were in Army hospitals. Recognizing the epidemiology of the nostalgia disorder from his own war experience, Hammond (1883) states that:

In some cases it may be necessary for the military surgeon to send the nostalgic soldier to his home in order to save his life. This, however, should be done with all possible precautions to prevent his comrades becoming acquainted with the fact (p. 414).

The incidence of nostalgia in the Civil War was reported as 5,213 cases (2.34 cases per 1,000 troops), in the first year of war, and rose to 3.3 cases per 1,000 troops in the second year (Deutch, 1944). In addition, among soldiers discharged for medical reasons, 'paralysis' accounted for 20.8 per 1,000 troops and 'insanity' for 6 per 1000 (Deutch, 1944).

Documents on the Spanish American War (1898) reflect little concern for nostalgia or other neuropsychiatric disorders (Senn, 1900). There is also no indication of the management of these casualties during that brief war.

World War I (1914-1918)

Unlike previous campaigns, the entry of the United States into World War I was distinguished by concern for the possibilities of psychiatric casualties. Colonel Pearce Bailey, Neuropsychiatric Consultant to the Surgeon General, had the foresight to expect that such casualties might

become a major source of manpower loss, and took early definitive action to establish an effective program of combat psychiatry (Hausman & Rioch, 1967). Aware of the treatment experiences by French and British medical personnel with 'war neurosis' or 'shell shock' earlier in the war, Colonel Bailey sought the services of Dr. Salmon to confirm and extend the allies principles and concepts on combat psychiatry.

The symptoms of shell shock or war neurosis were wide and varied, and seemed to fall under three headings: hysteria, malingerer, or genuine shell shock (Johnstone, 1918). Hysteria, or "slightly shocked" (Johnstone, 1918, p. 535), was usually found in the neurotic soldier unable to bear the strain and hardship of trench warfare, and the possibility of seeing comrades die. The symptoms most commonly suffered by this individual were: bad dreams, reliving terrifying experiences, and a sensation of falling through space (Johnstone, 1918). The soldier with this type of shell shock had an "incredibly haunted look in his eyes" (Johnstone, 1918, p. 535). These cases were thought to be the most difficult to treat.

The malingerer was a soldier who pretended to have shell shock in order to be permanently 'invalided' out of the service (Johnstone, 1918). These men were clever enough to argue that they had the 'real thing', realizing how difficult it would be to dispute this.

Lastly, soldiers suffering from genuine shell shock were thought to have loss of function or disordered function due to interference with the central nervous system caused by exposure to the effects of high explosives (Johnstone, 1918). These individuals usually suffered a loss of consciousness, or inhalation of poisonous gas at the time of explosion. Additionally, these soldiers may have experienced functional paralysis, loss of speech, or loss of hearing. This type of shock was the most easily treated, and the soldiers usually recovered after long periods of bedrest, adequate nutrition, and a serene, peaceful environment (Johnstone, 1918).

The differences between French and British methods of treating war neurosis or shell shock were recognized early in the war. The different philosophies and operations of these countries' military psychiatrists in caring for combat casualties were striking. The French, in an effort to reduce secondary gains among psychiatric casualties, focused on the use of aversive techniques in the forward treatment stations (Bailey, 1929). Military members diagnosed as 'emotionee' were treated with painful electrical muscular stimulation. Threats of losing privileges and confinement were enforced for those who were slow to recover. However, in psychiatric centers farther to the rear of the combat zone, the French used a much more humane and effective retraining program, preparing men to return to duty. The

latter, proved to be very successful, and many soldiers were able to return to their unit (Salmon, 1919).

In contrast, the British tended to evacuate their combat psychiatric casualties to England, where they were admitted to psychiatric hospitals and provided treatment that followed the conventional civilian model (Bailey, 1929). Although this approach was more humane than that in the French forward units, soldiers were rarely able to return to duty from England, and the incidence of chronicity was high (Salmon, 1919).

In 1917, Dr. Salmon was commissioned an U.S. Army Major and sent to France. Within a month after his arrival, Salmon began to implement a plan based on the results of the French and British methods, and a detailed report on the observations of an American neurologist, Captain Louis Casamajor (Salmon, 1929).

Salmon's plan consisted of assigning a psychiatrist to each American division. The psychiatrist was directed to carry out three primary duties during combat: 1) examination and sorting of troops by diagnoses in order to control their evacuation, 2) treatment of light cases in divisional sanitary formations to preserve the greatest number possible for duty, and 3) mental examination of prisoners and men suspected of having self-inflicted injuries (Salmon, 1929). Additionally, Salmon arranged for three neurological hospitals to be set up very close to the front for specialized care of divisional evacuees. These hospitals

provided a firm, supportive, therapeutic environment and maintained an attitude of expectancy that the men treated would return to duty. Both the divisional sanitary formations and the neurological hospitals utilized a treatment program that "emphasized a military rather than a hospital milieu, strong use of persuasion both by staff and through the patient group, exclusion from the wards of all but duty-bound personnel, and firm, optimistic handling" (Salmon, 1929, p. 38).

The field treatments at the divisional level were very successful. Sixty-five percent of the casualties returned to duty after staying an average of seven days, and only 4% were readmitted to the unit later (Salmon, 1919). There was also a high rate of return to duty among those evacuated to the neurological hospitals, however, a larger percentage of these men were sent to non-combat units (Salmon, 1919).

By the end of the war, U.S., British, and French psychiatrists came to agree that war neurosis was primarily a psychological disorder, and discarded the organic theories that were thought to create shell shock (Glass, 1954). All allied physicians agreed that war neurosis provided escape from an intolerable situation, much like wounds provide for the medical casualty. U.S. psychiatrists particularly emphasized a concept of battle stress acting upon the entire resources of an individual. Therefore, mental breakdown in combat occurs when the forces that usually sustain a person through traumatic experiences completely fail or deteriorate

(Glass, 1954). Although a great deal of knowledge had been gained about combat casualties and their treatment during this war, neither the civilian nor military psychiatric community appeared to have been significantly influenced by these concepts, and they were quickly forgotten.

World War II (1939 - 1945)

In December 1941, the United States entered World War II seemingly unprepared to carry out a program of forward psychiatry. Despite the careful planning around the anticipation of psychiatric casualties and the well-documented experiences of World War I, the U.S. medical services entered World War II showing little evidence of awareness of these prior events. Organization, staffing, and utilization of psychiatric support for combat operations was initially absent, and then later delayed in implementation. The psychiatrists that had been assigned to every combat division in World War I had been deleted, and no provisions were made for any type of psychiatric treatment to be delivered at the field Army level or in the communication zone (Glass, 1954). Reasons for this unpreparedness are not clear. Many believed that war neurosis was only characteristic of the static trench warfare of World War I and would not occur with the rapid movement tactics of World War II (Strecker, 1944). Others claim it was due to the inexperience of the medical officers planning the psychiatric program (Strecker, 1944).

Unfortunately, in late 1942 and early 1943, the inevitable occurred. The large-scale battles of the Tunisian campaign brought forth massive numbers of psychiatric casualties, with rates as high as 101 per 1000 troops per year (Bourne, 1978). Similar to the early phase of World War I, these patients were evacuated to hospitals at the rear of the combat zone, thus resulting in fixation of symptoms and the formation of chronic syndromes (Glass, 1954). Very few of these casualties ever returned to duty, much to the dismay of field commanders.

Not until July, 1943, after the experiences of the North African campaign, were psychiatrists assigned to all evacuation hospitals (Drayer, 1946). This was also precipitated by the successful interventions earlier that year of Hanson and Tureen, two military psychiatrists, in forward battle areas with fresh psychiatric casualties. Hanson and Tureen found that by providing rest, food, and encouragement to these soldiers, they were able to return 50% back to combat within a 4-day period and 70% within one month (Hausman & Rioch, 1967). This clearly restored and reestablished the value of World War I treatment methods.

However, psychiatrists in the evacuation hospitals were not nearly so successful. They were unable to function effectively because medically wounded and diseased men occupied almost all available beds, necessitating the evacuation of psychiatric casualties to a special hospital further to the rear. Although patients were received at

this hospital within 24 to 48 hours of their mental dysfunction, only 15% were ever returned to combat duty (Drayer, 1946). Glass (1954) states:

The difficulties encountered in recovering patients for combat duty and the passive dependent character quality so readily displayed by most cases at this level of treatment influenced many psychiatrists, including this writer, to place undue emphasis upon predisposition or personality as a major etiologic agent in the war neurosis (p. 727).

This led to a familiar World War II theme that everyone has a breaking point which is an interaction between the amount of combat stress inflicted and the degree of individual vulnerability.

The inadequacy of such a simple operating viewpoint became evident when the opportunity to expand and improve the psychiatric treatment program came in November and December of 1943. At this time, psychiatrists were added to the field-type provisional medical facilities and were able to observe first-hand the environmental conditions under which men fought. By January 1944, the three levels of psychiatric treatment that had developed in World War I were reestablished with much success. It became clear to the psychiatrists that mental dysfunction in battle was a complex phenomenon which resulted from multiple physical and psychic forces struggling for emotional control (Glass, 1951). Recognition of the defensive mechanism that seemed to sustain men in the fearful environment of combat made it possible to understand the favorable results obtained by brief, simple forward psychiatry. That is, individuals band

together for protection and emotional support during combat. This produces a powerful bond of love and concern for comrades, and creates a compelling force for the soldier to remain with or rejoin the combat group (Glass, 1951). Therefore, treating the individual in the combat zone enhances group identification, and the individual is motivated to return to the unit. Conversely, evacuation to a rear hospital only serves to diminish the bonds a soldier feels with comrades and reinforces the need for self-preservation.

Further improvements occurred in 1943 with the changing of the terminology war neurosis to combat exhaustion (Lidz, 1953). This diagnostic category portrayed a more realistic appreciation for the fluid, transient psychological dysfunction during combat. Additionally, 'exhaustion' conveyed a logical result of combat from which one could fully recover with adequate rest and recuperation.

The lessons learned from combat psychiatry during World War II were not forgotten in the post-war excitement. Individual events were recorded, and articles, journals, and books written, about the planning and implementation of the forward psychiatry treatment program. The principles and methods of World War II field psychiatry were firmly incorporated into the doctrines of the Army Medical Service, and would prove to be invaluable in a short period of time.

The Korean War (1950 - 1953)

Despite the abrupt onset of the Korean campaign on June 25, 1950, the forward psychiatry treatment program was quickly and successfully implemented. Under the leadership of Colonel Albert J. Glass, a combat-experienced psychiatrist from World War II, division psychiatry became operational within 6 to 8 weeks after hostilities began (Glass, 1951). By October 1950, the three levels of psychiatric treatment were established, and the effectiveness that existed in the latter part of World War II had been exceeded. Additionally, further gains in combat psychiatric treatment were achieved by a forward displacement of the treatment site. The long suspected idea that general medical officers could properly apply the simple techniques of forward psychiatry was finally realized in December, 1950. At that time, properly trained medical officers treated combat psychiatric casualties with much success (Glass, 1954).

The advantages of the more forward psychiatric program were readily apparent. Not only was there an increased number of men who returned to combat duty, 65% to 75%, (Glass, 1954), this method also significantly decreased the men's anxiety about returning to their unit. Peterson (1955), observed a drop in the ratio of neurotic to psychotic evacuees between the last quarter of 1950 and the first half of 1951 from 19.4:1 to 3.6:1. As services became

more effective, this was further reduced to 1:5.4 in 1952 and 1:9.3 in 1953 (Peterson, 1955).

The more forward level of treatment served to enhance the emotional bond the men felt with their units and decreased the potential secondary gain of illness that is stimulated by evacuation to a rear hospital. Of the men who were treated with the more forward approach, only 10% returned for treatment a second time. In addition, of the men actually evacuated, 70% were usually able to return to non-combat duty units, and 40% of that 70% were able to return to combat within 3 months (Glass, 1954). During this conflict, the rate of psychiatric casualties was 37 per 1000 troops per year (Bourne, 1978).

The success of the more forward program in the Korean campaign further validated the three operational principles of combat psychiatry: proximity, immediacy, and expectancy (Williams, 1927). Although these principles were first discovered and developed in World War I, they have consistently defined reliable methods of combat psychiatric treatment programs.

The Vietnam War (1965 - 1973)

For many reasons, the war in Vietnam was unlike any Americans had ever fought. First, it was the most unpopular war in which the United States had ever engaged. Never officially called a war but a police action,

Vietnam became a metaphor for American society, encapsulating within a single phrase all that connoted distrust in traditional government, limitations in the realization of the American dream, and the futility of

the sacrifice of American lives for poorly understood and deeply divided values and principles (Talbot, 1985, p. xii).

Second, because of its divisive and pervasive nature, the Vietnam War touched all elements of society. And lastly, the war was reported in detail by the media and recorded in detail by historians. Never before had such a thorough, descriptive account of battle been given to the civilian public. Even so, despite the reality of combat on every American television, the nation remained coldly aloof and detached, maintaining a 'business as usual' posture.

The conduct of the war was also very different from previous conflicts. It was a guerrilla war with no real fixed battle lines (Bourne, 1978). U.S. troops were unable to distinguish safe from unsafe territory and were constantly aware of the possibility of being ambushed. The troops were also suspicious of one another. With the constant one by one rotation of soldiers, no real unity or camaraderie was ever established, and the threat of the newcomer jeopardizing the entire unit was a constant fear (Talbot, 1985). Vietnam was also said to be the first 'air conditioned war' (Bourne, 1978), interrupting intense combat with brief periods of relaxation in the beautiful cities of South Vietnam. Additionally, the Vietnam War was not characterized by the protracted artillery duels or aerial bombardments of American troops as were World Wars I and II, and the Korean War (Bourne, 1978).

Thus, it is not surprising that the psychological effects of this war were also different. First, during the earlier years of the war, the incidence of combat psychiatric casualties was extremely low, 12 per 1000 troops per year (Bourne, 1978). Initially, some attributed this to the knowledge and sophistication used to treat these soldiers. Proper training, equipment, leadership, and medical evacuation helped to keep morale high and reduce the possibility of combat stress (Bourne, 1978). Every division had the services of a psychiatrist, and both field and evacuation hospitals provided psychiatric care. Others felt the low number of psychiatric casualties resulted from the soldiers' awareness of the pre-determined one-year tour of duty in the combat zone. In previous conflicts, death, injury, or peace were the only mechanisms available to be extricated from combat. However, in Vietnam, American fighting men knew if they could survive 12 months, they were guaranteed to be removed from battle (Talbot, 1985).

Secondly, disturbing reports of poly drug use among U.S. troops and acts of violence against Vietnamese civilians and American officers were widespread (Talbot, 1985). Frequently, stories were told of troops who would not obey direct orders or conform to military regulations. Finally, another difference which had a profound psychological impact on the soldiers was the treatment they received upon returning home. Many in the civilian population looked upon veterans with contempt and disgust,

blaming them for a situation they had neither provoked nor over which they had any control (Kelly, 1982).

As the war progressed however, morale rapidly declined and the incidence of combat psychiatric casualties rose (Bourne, 1978). In addition, there were increasingly frequent reports of mutinous behavior of enlisted men toward their commanding officer, and heroin use was a well-known, widespread fact, with some units having a 100% addiction rate (Bourne, 1978).

Sadly, the psychiatric casualty rate that was initially so low, increased when the soldiers returned home. Many exhibited psychiatric symptoms only after they left the combat zone, unable to readapt to the 'real world' (Kelly, 1982). These symptoms included difficulty sleeping, hypervigilance, nightmares, emotional numbing, vivid flashbacks, and guilt over having survived when others had died or over the atrocities committed in order to survive (Helzer et al., 1987). It was said that these symptoms could appear for the first time years after the combat experience, and that the Vietnam veteran was essentially a time bomb waiting to explode, and little was known about what would or could detonate this explosion (Helzer et al., 1987). As the war raged on, the rate of suicide and homicide among Vietnam veterans increased significantly, and a specific clinical picture was identified by mental health personnel, and labeled the 'post-Vietnam Syndrome' (Kelly, 1982).

The syndrome was not an official psychiatric diagnosis at that time, and many psychiatrists doubted its actual validity. However, veterans' groups and mental health care providers who worked with veterans, lobbied for the recognition and definition of the 'post-Vietnam syndrome' (Pendorf, 1990). A compromise of post-traumatic stress disorder (PTSD) was added to the American psychiatric nomenclature with the publication of the 1980 Diagnostic and Statistical Manual of Mental Disorders, third edition (DSM-III). The compromise provided recognition of a new disorder that could not only affect Vietnam veterans, but anyone subjected to severe and sudden stress (American Psychiatric Association, 1980). This helped to validate many of the problems the veterans were experiencing.

Since the Vietnam War, researchers have completed many studies in an effort to better understand an individual's maladaptation to the stresses of war. Additionally, many researchers have attempted to determine if there are any indicators which may predict, or help to predict, an individual's susceptibility to maladaptation. Although these investigations are not conclusive, significant data have been found.

Variables in the Development of PTSD

A review of the literature indicates that there are three critical variables in the development of PTSD among Vietnam veterans (Chemtob, et al., 1990; Foy & Card, 1987; Foy, Carroll, & Donahoe, 1987; Frye & Stockton, 1982; Mejo,

1990). These variables include: pre-existing personality traits, the trauma involved, and the support the individual receives from their environment during and after the trauma.

Pre-existing personality traits may create a vulnerability within an individual making that person more susceptible to developing PTSD. Pre-existing difficulties in the form of pathology or a previous trauma (eg. child abuse) may create a 'weak spot' of which the person is unaware (Chemtob, et al., 1990; Mejo, 1990). PTSD appears to have a timeless quality and symptoms may appear long after the traumatic event. Since little is known about what triggers these difficulties, the individual is at risk for exposing or re-exposing themselves to unrecognized precipitants and developing PTSD.

Additionally, pre-existing personality traits may also affect the way an individual appraises or judges a situation. A situation is only as stressful or anxiety-provoking as an individual perceives it to be. This may be influenced by pre-existing personality and exposure to previous coping/learning situations (Mejo, 1990).

The trauma involved is also significant to the development of PTSD (Frye & Stockton, 1982; Mejo, 1990; Shaw, 1983). The degree and intensity of combat, and exposure to abusive violence or atrocities seem to predict chronic symptoms of PTSD (Green, Grace, Lindy, Gleser, & Leonard, 1990; Mejo, 1990). Soldiers realize that there is a diminishing chance of survival with continuous and/or

intensive exposure to battle (Shaw, 1983). In addition, the more abusive the violence or atrocities the soldier has witnessed or participated in, the greater the risk of PTSD (Green, Lindy, Grace, & Gleser, 1989).

The support the individual receives from their environment both during and after the trauma significantly impacts on the development of PTSD. It has been demonstrated repeatedly that units with high morale withstand the stressors of war most effectively (Shaw, 1983). Units that experience a close bond or camaraderie, and feel they are supported by their commanding officer, are much less likely to develop PTSD. Additionally, a soldier's perception of the support, understanding, and encouragement received upon returning home from the war may determine the potential for PTSD development (Mejo, 1990). Veterans who were allowed to discuss their combat experiences with open, accepting loved ones were much less likely to develop PTSD than those who were blamed for killing, or made to feel guilty about their combat experience (Mejo, 1990).

Demographic Variables Related to CSR and PTSD

An individuals' personal characteristics may also potentially influence the development of combat stress reaction and PTSD. In this section, the following variables will be discussed: age, rank, race, sex, marital status, time in service, branch of service, length of time in the war zone, active duty versus reservist or guard status, job title or assignment, and prior combat experience.

Age

Many studies suggest that the age of the individual is related to the risk of developing combat stress reaction (Bey & Zecchinelli, 1974; Bourne, 1970; Gal, 1986; Levac, Greenfeld, & Baruch, 1979; Silverman, 1986; Solomon, Noy, & Bar-On, 1986). Most soldiers are adolescents and young adults who are greatly affected by stress. The risk of developing combat stress reaction generally increases with age up to 26-30 years old, after which it slightly decreases (Flora, 1985). However, older soldiers, too, are more susceptible for developing combat stress reaction (Weaver & Stewart, 1988).

Rank

The rank of an individual is a factor in susceptibility to combat stress (Bourne, 1970; Gal, 1986; Levac, Greenfeld, & Baruch, 1979; Solomon, Noy, & Bar-On, 1986). The rank of a soldier is usually proportional to their education level. Generally, the more education an individual has, the higher ranking he/she is, and the lower their risk of becoming a combat stress casualty (Flora, 1985; Weaver & Stewart, 1988). Additionally, lower ranking individuals have to follow orders and rely on the judgement of their superiors, thus having much less control over their situation.

Race

In a recent study by Buydens-Branchey, Noumair, & Branchey (1990), black Vietnam veterans showed a greater tendency to develop PTSD than non-blacks. Other

investigations have reported that being black independently increases the probability of stress symptoms after combat (True, Goldberg, & Eisen, 1988). Conversely, in a comprehensive study on Vietnam veterans by Jorden et al. (1991), being black made no significant difference in the occurrence of PTSD. These conflicting data reinforce the need for future research in this area.

Sex

Interestingly, Jorden et al. (1991), did report a significant increase in the incidence of PTSD and depression among women veterans who served in Vietnam, when compared to women who served in the military during that time but not in Vietnam, and to civilians. Very little literature is available about women veterans though, and further research in this area is necessary.

Marital Status

In a 1980 study by Ingraham and Manning, married Israeli soldiers were found to be more susceptible to combat stress reaction than their unmarried counterparts. Although further studies have not examined this possibility, married U.S. soldiers may also have an increase risk for developing combat stress reaction.

Time in Service

The length of time an individual has in the service prior to combat may influence their vulnerability in becoming a combat stress victim. Generally, soldiers who have been in the military for a greater length of time have

more rank, more combat training, and are more familiar with military rules, regulations and expectations, possibly decreasing their risk of combat stress reaction.

Branch of Service

Although no studies reviewed examined the individual's branch of service as a potential factor influencing their susceptibility to combat stress, those directly involved in ground combat may have a greater potential for developing this reaction. Soldiers involved in ground combat may have increased exposure to intense combat and abusive violence. Those soldiers in the Army and Marine Corps may show a greater incidence of combat stress reaction based on their close proximity to combat and the combat mission of their branch.

Job Title or Assignment

Similar to branch of service, an individual's job title or assignment during combat may increase their risk to developing combat stress reaction. A soldier's job during combat determines the degree and intensity of combat they will encounter or be exposed to, and possibly the abusive violence or atrocities they will witness or participate in (Green, Grace, Lindy, Gleser, & Leonard, 1990; Green, Lindy, Grace, & Gleser, 1989; Mejo, 1990; Shaw, 1983).

Length of Time in the War Zone

The length of time an individual spent in the war zone may contribute to their vulnerability of developing combat stress. Soldiers realize there is a diminishing chance of

survival with continuous and/or intensive exposure to battle (Shaw, 1983).

Active Duty versus Reservist or National Guard Status

Although there are no available studies that have specifically addressed this variable, there are several factors inherent in the variable which may influence an individual's susceptibility to combat stress reaction. An active duty member is trained to be 'combat ready' at all times. Active duty members have more combat training and are generally more familiar with military ways than their reservist or national guard counterparts, who only meet one weekend a month or two weeks a year. Additionally, active duty members are able to spend a great deal of time with their unit, thus enabling them to develop a cohesive bond. According to Romo and Schneider (1982), cohesive groups who are in combat together will look after each other despite personal risks. Noy (1982) explains group cohesion as "the only meaningful force that can effectively prevent combat psychiatric casualties" (p. 13).

Prior Combat Experience

Prior combat experience may actually work for and against the soldier in developing combat stress reaction. Numerous past studies have reviewed the effects of initial combat on soldiers and the resulting susceptibility to combat stress (Clausewitz, 1976; Marshall, 1949; Moran, 1967). Those who experience battle for the first time are much more likely to suffer combat stress reaction (Moran,

1967), resulting in the idea that a person becomes 'combat hardened' after repeated exposure. However, according to Williams (1950), combat stress reaction is also experienced by battle-tested veterans after prolonged, continuous periods of intense combat.

Persian Gulf War (January, 1991 - March, 1991)

The recent war in the Middle East was extremely different from initial expectations. War-hardened Iraqi soldiers and intense round-the-clock operations were expected to produce large numbers of soldiers with combat stress reaction. Although no statistics are yet available, verbal reports do not support these predictions. Speculation that the relatively short duration of the war, the superior technology and combat capabilities of the American troops, and the overwhelming support of the American people seem to have prevented these predictions from becoming reality. Additionally, military members from this war, in contrast to Vietnam veterans, are thought not to have experienced the atrocities, intense combat, or lack of support from fellow Americans.

Nevertheless, psychiatric casualties did occur in military members during the Gulf War. Consequently, if there are any variables which may predict the potential for maladaptation to the stresses of war, they may be identified from military members hospitalized with psychiatric diagnoses from this war.

CHAPTER III METHODOLOGY

This descriptive study was designed to identify and describe demographic characteristics of military members serving in the Persian Gulf War who were hospitalized with a psychiatric diagnosis. Based on information from past research of military members who served in previous wars, the variables chosen for this study were patient sex, age, rank, race, marital status, time in service, branch of service, length of time in the Middle East, active duty versus reservist or guard status, job title or assignment, and prior combat experience. The psychiatric diagnoses of hospitalized military members, and the frequency with which these occurred, were also examined.

Setting

This study was conducted in an Air Force Medical Treatment Facility in Wiesbaden, Germany. This 165-bed hospital has a 28-bed psychiatric unit. During the time of the Gulf War, the unit was expanded to hold a total of 48 psychiatric patients. It was reported by Captain Stephen Friedrich (personal communication, May 8, 1991), that this hospital received more psychiatric patients than the other military hospitals in the vicinity, although actual numbers are unknown.

Sample

The convenience sample consisted of 99 military members hospitalized with a psychiatric diagnosis(es) during the Persian Gulf War. Only medical records of patients hospitalized after January 17, 1991, the day war was declared, were reviewed. This helped control for variables that may have contributed to psychiatric problems in military members before the actual war began. These variables were further controlled, however, as all the sample subjects were admitted on or after January 26, 1991.

Procedure

Written permission was granted from Colonel Joseph V. Potter, Director, Operations and Plans, at the United States Air Force Institute of Technology/Civilian Institution (AFIT/CI) to conduct this study in Air Force Medical Treatment Facilities (Appendix A). Mr. Charles Hamilton, Air Force Military Personnel Center, authorized this study to be a 'fact-finding' mission and a control number was not necessary. Lieutenant Colonel Nina Rhoton, Chief Nurse at Wiesbaden AB Medical Treatment Facility, was contacted by this researcher to introduce the study and obtain verbal permission to review the necessary medical records. Written permission was obtained from Health Science Center Institutional Review Board, University of Florida, prior to data collection.

Arrangements for the collection of data from each subject's medical record were negotiated with Captain

Stephen Friedrich, Director of Patient Administration, Wiesbaden AB, and Sergeant Paul Boyle. All data were collected over a three day period from charts and computerized records on each of the 99 patients who had been admitted to the hospital with a psychiatric diagnosis.

Human Subjects

This study was restrospective in nature and did not require any contact with human subjects. Therefore, informed consent was not required and no potential risks were identified. Confidentiality of the medical records was maintained at all times as the names of patients were not used on any data.

It is hoped that the potential benefits from this study will include a better understanding of the personal characteristics of military members hospitalized with a psychiatric diagnosis during the Persian Gulf War, and any indicators that may predict an individual's potential for maladaptation to the stresses of war.

Data Analysis

Data were analyzed using descriptive statistics. A data collection form and computerized records were used to help organize the data and answer the research questions. (See Appendix).

CHAPTER IV DATA ANALYSIS

The purpose of this study was to identify and describe characteristics of military members hospitalized with a psychiatric diagnosis during the Persian Gulf War. Data were analyzed by using descriptive statistics. The variables studied included the age, sex, rank, race, branch of service, marital status, time in service, military status, time in the Middle East, job title, prior combat experience, and the psychiatric diagnosis of the military member. A data collection form and computerized records were used to help organize the data.

Sample Characteristics

The sample consisted of 99 military members hospitalized with a psychiatric diagnosis during the Persian Gulf War. The majority of individuals were white (n = 69; 69.7%), male (n = 79; 79.8%), and married (n = 54; 54.5%). Most subjects were members of the U.S. Army (n = 78; 78.8%) and were on active duty status (n = 63; 63.6%). Table 4-1 summarizes the sample characteristics.

Demographic Characteristics

The first research question was what were the demographic characteristics of military members with psychiatric diagnoses during the Persian Gulf War, and the frequency with which the characteristics occurred.

Table 4-1

Frequency and Percent of Sample Characteristics of Military Members Hospitalized with Psychiatric Diagnoses during the Persian Gulf War (n=99)

Variables	Frequency	Percent
Age		
18-25	47	47.5
26-30	18	18.2
31-35	12	12.1
36-40	8	8.1
41-45	8	8.1
46-over	6	6.1
Race		
White	69	69.7
Black	21	21.2
Hispanic	9	9.1
Sex		
Female	20	20.2
Male	79	79.8
Marital Status		
Single	42	42.4
Married	54	54.5
Divorced	3	3.0
Branch of Service		
Army	78	78.8
Navy	14	14.1
Air Force	3	3.0
Marine	4	4.0
Military Status		
Active Duty	63	63.6
Reserve	21	21.2
Guard	15	15.2

Subjects ranged between the ages of 18 and 54 years. The mean age of the subjects was 28.7 years (SD = 8.9 years) and the median age was 26 years. The mode age of the sample was 22 years with the largest group of individuals (n = 47; 47.5%) between the ages of 18 to 25 years.

The total duration of the time spent in the service, including active duty, reserve, and guard, ranged from 5 months to 288 months (24 years). The mean time spent in the service was 79.8 months (SD = 71.1 months) and the median time was 60 months. Modal time in service was 24 months with the majority of individuals (n = 58; 58.6%) serving one to five years.

All of the military members in the sample spent time in the Middle East. However, there was no documentation on the amount of time spent in that area for 30 subjects.

Consequently, the statistics for this variable are based on a sample size of 69. The duration of time spent in the Middle East ranged from 1 to 36 weeks with a mean of 17.8 weeks, a standard deviation of 7.3 weeks, and the median of 16 weeks. The mode time spent in this area was 16 weeks. Table 4-2 provides the summary measures of age, time in service, and time in the Middle East for military members hospitalized with a psychiatric diagnosis during the Persian Gulf War.

Ninety-three (93.9%) military members were enlisted with ranks ranging from the lowest enlisted rank of E-1 to the highest enlisted rank of E-7. The mode rank was E-4

Table 4-2

Summary Measures of Age, Time in Service and Time in the Middle East for Military Members Hospitalized with Psychiatric Diagnoses during the Persian Gulf War

Variables	Mean	SD	Median	Mode	Range
Age (year) (n=99)	28.7	8.9	26	22	18 - 54
Time in Service (month) (n=99)	79.8	71.7	60	24	5 - 288
Time in Middle East (week) (n=69)	17.8	7.3	16	16	1 - 36

(n = 44; 44.4%). Five of the subjects (6%) were officers with ranks of First Lieutenant with a pay grade of 02, to Lieutenant Colonel with a pay grade of 05, and one subject (1%) was a Warrant Officer (W2).

The availability of documentation for prior combat experience was limited. Five subjects were known to have spent time in Vietnam, which was reported as the main reason for their hospitalization and current diagnosis. However, there was no documentation to indicate whether or not the other 94 subjects had prior combat experience.

The job assignments of the subjects were extremely varied and consisted of sixty-one distinct titles. Of these separate jobs, 15 subjects (15.2%) were motor vehicle operators which was the largest number of individuals in any single category. Food service specialist and administrative specialist followed with 6 (6.1%) and 5 (5.1%) subjects respectively.

Due to the large number of job titles, data were organized and grouped into similar categories based on the function and duties of the specific job assignment. Eleven separate groups were formed.

The first group consisted of all subjects whose primary responsibility involved motorized land vehicles such as trucks, tanks, and jeeps. The job titles in this group included motor vehicle operators, cavalry scouts, fighting vehicle infantrymen, combat engineers, and armored crewmen (n = 21; 21.2%).

The second group contained all medical personnel. The primary function of these subjects involved delivering health care to other military members. This group consisted of lab technicians, operating room specialists, nurse anesthetists, operating room nurses, and counselors (n = 15; 15.2%).

The third group was comprised of all administrative persons. These included administrative specialists, legal specialists, and chaplain's assistant (n = 8; 8.1%).

The fourth group consisted of equipment and supply personnel. These individuals ensured their unit had the necessary equipment and proper supplies to maintain and support the mission of their unit. The job titles included in this group were unit supply specialists, equipment records specialists, materiel storage specialists, inventory management specialists, and utilities equipment repairer (n = 6; 6.1%).

The fifth group contained the communications specialists. These job assignments included radiomen, multi-chain communications operators, and telecommunications specialists (n = 4; 4.0%).

The mechanic/repair personnel comprised the sixth group. These individuals were responsible for the maintenance and repair of land and air vehicles and equipment. The job titles in this group included tank system mechanics, light-wheel vehicle mechanics, wheel

vehicle repairers, turbine engine repairers, and utility helicopter mechanics and repairers (n = 8; 8.1%).

The seventh group contained all subjects whose primary duty was construction. These included construction surveyors, general construction equipment operators, and construction specialists (n = 4; 4.0%).

The eighth group consisted of transportation personnel. These individuals were involved in all areas of transportation which included cargo specialists, traffic management coordinators, and transportation general officers (n = 4; 4.0%).

The ninth group contained all subjects involved in food services. Job titles in this area were food service specialists and mess management specialists (n = 8; 8.1%).

Petroleum specialists comprised the tenth group. These individuals handle the petroleum products used by the machinery and include petroleum supply specialists and petroleum laboratory specialists (n = 4; 4.0%).

The eleventh and final group is a miscellaneous category that combined the remainder of job titles that were few and diverse and had no similarities to the other groups. These assignments included an ammunition specialist, a chemical operations specialist, a fireman, an air traffic controller, a boiler technician, a storekeeper, and others (n = 17; 17.2%). Table 4-3 summarizes the frequency of rank and job titles of military members hospitalized with a psychiatric diagnosis during the Persian Gulf War.

Table 4-3

Frequency and Percent of the Rank and Job Title of Military Members Hospitalized with Psychiatric Diagnoses during the Persian Gulf War

Variables	Frequency	Percent
Rank		
E1-E7 (Enlisted)	75	93.9
O2-05 (Officer)	5	5.0
W2 (Warrant Officer)	1	1.0
Job Title/Assignment		
Group #1	21	21.2
Group #2	15	15.2
Group #3	8	8.1
Group #4	6	6.1
Group #5	4	4.0
Group #6	8	8.1
Group #7	4	4.0
Group #8	4	4.0
Group #9	8	8.1
Group #10	4	4.0
Group #11	17	17.2

Psychiatric Diagnoses

The second research question asked the frequency of psychiatric diagnoses in military members hospitalized during the Persian Gulf War. The subjects were diagnosed in accordance with the multi-axial system of the American Psychiatric Association in the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R, 1987). In multi-axial evaluations, every case is assessed on several axes, each of which refers to a different class of information (American Psychiatric Association, 1987, p. 15). For the purposes of this study, only Axis I and Axis II diagnoses were used. Axis I and Axis II diagnoses constitute the entire classification of mental disorders. Axis I diagnoses are psychiatric clinical syndromes and Axis II diagnoses represent developmental and personality disorders.

The subjects in this research were diagnosed with a total of eighteen different Axis I diagnoses. These diagnoses were divided into six separate groups based on similarities among the diagnostic disorders. Three subjects had an Axis II diagnosis in addition to an Axis I diagnosis, and one subject had only an Axis II diagnosis.

Group I contained all the diagnoses of adjustment disorder. The majority of military members ($n = 53$; 53.5%) were diagnosed with an adjustment disorder including: Adjustment Disorder with Depressed Mood, Adjustment Disorder with Disturbance in Mood and Conduct, Adjustment Disorder with Anxious Mood, Adjustment Disorder with Physical

Symptoms, and Adjustment Disorder Not Otherwise Specified (NOS).

Group II included the military members with diagnoses of Post-Traumatic Stress Disorder and Panic Disorder. These diagnoses occurred with the second greatest frequency (n=17; 17.2%).

Group III consisted of subjects with a mood disorder. This included Major Depression, Dysthymia, and Bipolar Disorder (n = 10; 10.1%).

Group IV contained individuals with the diagnoses of Delusional Disorder, Paranoid Disorder, Organic Delusional Disorder, and Psychotic episode. The diagnoses occurred with the third greatest frequency (n = 12; 12.1%).

Groups V and VI contained diagnoses that occurred with the least frequency. Group V included military members with diagnoses of Schizophrenia, Schizoaffective Disorder, and Schizophreniform Disorder (n = 4; 4.0%), and Group VI consisted of two subjects diagnosed with Alcohol Abuse/Dependence (n = 2; 2.0%).

The last group, Group VII, included all military members diagnosed with the Axis II diagnosis of Personality Disorder Not Otherwise Specified (NOS). This was a small group consisting of only four subjects (4.8%), three of whom also had an Axis I diagnosis. Table 4-4 summarizes the frequency of psychiatric diagnoses in military members hospitalized during the Persian Gulf War.

Table 4-4

Frequency and Percent of Psychiatric Diagnoses in Military Members Hospitalized during the Persian Gulf War (n = 99)

Variables	Frequency	Percent
Group I	53	53.5
Adj. D/O, NOS	16	16.2
Adj. D/O, depressed mood	23	23.2
Adj. D/O, disturb. mood/conduct	9	9.1
Adj. D/O, anxious mood	3	3.0
Adj. D/O, physical symptoms	2	2.0
Group II	17	17.2
Post-traumatic stress disorder	16	16.2
Panic Disorder	1	1.0
Group III	10	10.1
Major Depression	6	6.1
Dysthymia	2	2.0
Bipolar Disorder	2	2.0
Group IV	12	12.1
Delusional Disorder	2	2.0
Paranoid Disorder	3	3.0
Organic Delusional Disorder	1	1.0
Psychotic episode	6	6.1
Group V	4	4.0
Schizophrenia	1	1.0
Schizoaffective Disorder	1	1.0
Schizophreniform Disorder	2	2.0
Group VI	2	2.0
Alcohol Abuse/Dependence	2	2.0
Group VII	4	4.0
Personality Disorder, NOS	4	4.0

Summary

Although the results of this study can not be generalized to the entire military population, some observations about the data can be made. The military members serving in the Gulf War who were hospitalized with a psychiatric diagnosis were mostly young white men. They were members of the U.S. Army and were on active duty status at the time of admission. These subjects were married and most had been in the Middle East for approximately 16 weeks at the time of admission.

The majority of individuals with psychiatric diagnoses during the Persian Gulf War were enlisted with approximately two years in service. Although the duty assignments were extremely varied, the individuals that seemed most likely to be admitted with a psychiatric diagnosis were those with the job title of motor vehicle operator. Finally, Adjustment Disorder was the psychiatric diagnosis given most frequently to military members from the Gulf War.

CHAPTER V
DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

Discussion of Results

Combat stress and its related casualties are as much a reality of war as are physical wounds and even death. Although the outward appearance of combat stress and physical wounds are vastly different, the resulting incapacitation can be quite similar.

Many of the findings from this study are consistent with the literature on combat stress casualties from other wars. The largest age group of military members hospitalized with a psychiatric diagnosis during the Persian Gulf War was between 18 and 25 years old. This supports the conclusions of previous research which suggest that the age of the individual is related to their risk of developing combat stress, and that combat stress reaction generally increases with age up to 26-30 years old (Flora, 1985; Bey & Zecchinelli, 1974; Bourne, 1970; Gal, 1986; Levac, Greenfeld, & Baruch, 1979; Silverman, 1986; Solomon, Noy, & Bar-On, 1986). However, it should be noted that in this study, the second largest age group of military members to be hospitalized with a psychiatric diagnosis were between the ages of 26-30. Because there are no statistics on the actual number of military members of either age group who

went to the Persian Gulf, it is difficult to determine if this number is disproportionately high.

The findings related to the rank of the military members hospitalized with a psychiatric diagnosis in this study is also consistent with findings in previous research. The majority of individuals were of the lower enlisted ranks (E-1 to E-4) which is usually indicative of less time in the service and less education. Additionally, these military members would have to follow the orders of their superiors, thus having much less control over their own situation.

However, the findings in this study did not support the research findings of Buydens-Branchey, Noumair, & Branchey (1990) that black military members may be more susceptible to combat stress. The majority of military members from the Persian Gulf War who were hospitalized with a psychiatric diagnosis were caucasian, coinciding with the findings of Jorden et al. (1991).

Although the majority of military members in this study were men, there were a larger number of women hospitalized with a psychiatric diagnosis than this researcher initially expected. There may be several reasons for this occurrence. First, this is the first war that military women were actually able to perform combat related duties other than administration or medical, thus increasing the opportunity for women to be exposed to more combat related experiences. In fact, none of the women in this sample had medical job titles and only five had administrative job titles. The

second reason has less to do with actual combat than with the environment in which the women were located. Upon reviewing the charts, several women were diagnosed with post-traumatic stress disorder as a result of alleged rape by fellow male military members while in the combat zone. Although the alleged rapes were neither confirmed nor denied, these women experienced a great deal of psychological distress and post-traumatic stress disorder.

Lastly, several military women were hospitalized with a psychiatric diagnosis as a result of value conflicts related to personal behavior while in the Persian Gulf. Major Daniels (personal communication, May 6, 1991), charge nurse of the inpatient psychiatric unit at Wiesbaden Hospital, reported that several women were diagnosed with adjustment disorder or depression related to guilt feelings about promiscuous behavior during a crisis situation. These married military women were reported to have had sexual relations with another individual because they felt the need for security and comfort due to the stress of the war crisis. Since many thought their lives were in danger and they might not live to regret the experience, they engaged in behavior they may otherwise have shunned.

Surprisingly, the findings in this study revealed that a married marital status does seem to be related to combat stress. Similar to the study with Israeli soldiers (Ingraham & Manning, 1980), American married soldiers were also hospitalized more often with psychiatric diagnoses than

were their single counterparts. Instead of being more stable with a secure support system, married individuals appeared to have more anxiety and concern over their loved ones back home. According to Major Daniels (personal communication, May 6, 1991) and the chart review, many married individuals received letters from their spouses in the United States asking for a divorce. Because the medical air evacuation system is the most expedient war-time mechanism for getting a soldier out of the combat zone, apparently, many commanders allowed individuals to return home via medical air evacuation to work on their troubled marriages. In order to accomplish this, though, the soldier had to have a medical diagnosis. The diagnosis of Adjustment Disorder, considered to be fairly benign but appropriate for the situation, was able to effectively serve this purpose.

The length of time an individual has in the service prior to combat may be related to their vulnerability to combat stress. Based on the literature, the longer an individual is in the military, the more rank, combat training, and familiarity with military rules and regulations they would have, thus decreasing their risk to develop combat stress. The findings from this research tend to support this rationale. The majority of individuals hospitalized with a psychiatric diagnosis from this war had served only one to five years in the military, with two years seen most frequently.

It is difficult to determine whether the military member's branch of service influences his/her vulnerability to combat stress. Military personnel in the Army were expected to have the highest incidence of combat stress based on past wars where they have been the branch of service most directly involved in combat situations, thus witnessing first hand the atrocities and violence of war. The Persian Gulf War, however, was mainly fought from the air, with only 100 hours of actual ground combat. Thus, the psychiatric casualties from this war could be expected to consist primarily of Air Force members. However, this was not the case. The majority of members with a psychiatric diagnosis were in the Army, and many had not engaged in actual combat. Perhaps an individual's branch of service contributes to their susceptibility to combat stress merely by the acknowledged mission of that branch and the soldier's awareness of the type of battle they would be forced to fight if called upon to do so. Additionally, perhaps the training, preparation, and support each branch receives may be different which may contribute to the soldier's vulnerability to combat stress.

The results of this study do not indicate the impact of a soldier's job title or assignment on his/her vulnerability to combat stress. The military members had such a variety of job assignments it is difficult to determine the relationship between this factor and combat stress. However, the largest single group of individuals who were

diagnosed with a psychiatric problem were motor vehicle operators. According to Captain Bryan Strong (personal communication, January 17, 1992), an active duty Army Infantry officer who served in the Gulf War, motor vehicle operators moved and delivered large quantities of supplies and resources very long distances to the most forward units. Because there was a shortage of these individuals, they immediately had to return to their original destination to repeat the process. Captain Strong reported that these individuals had virtually no let up, no breaks, and were extremely fatigued. Additionally, these individuals were continually at risk to be ambushed, and constantly exposed to the devastation and destruction caused from the air bombings. All these factors may have significantly contributed to the psychiatric difficulties experienced by this group of individuals. Further, this finding supports the idea that those soldiers directly exposed to the greatest physical dangers and atrocities of war may be more susceptible to combat stress, even when the majority of the war is fought from the air.

It is also difficult to determine whether or not the length of time an individual spent in the Middle East increased their susceptibility to combat stress. Data for this factor was not available on all subjects thereby decreasing total sample size. Additionally, the entire Persian Gulf War did not last four months, which was the mode time in the Middle East for the sample studied.

However, soldiers were in the Middle East preparing for war long before it actually began. According to Captain Strong (personal communication, January 17, 1992), preparing for war can be as rigorous and exhausting as the actual combat. Further, perhaps the boredom and anxiety of waiting, the uncertainty surrounding the situation, and fear of the unknown contributed to the development of a psychiatric problem.

Surprisingly, the majority of military members hospitalized with a psychiatric diagnosis were on active duty status. Based on the literature, active duty members have more training, discipline, and more group cohesion than their reserve or guard counterparts who are only 'part-time' military. Ironically, this did not seem to be the case as presented by the data. However, the data does not reveal some very important facts. Captain Strong (personal communication, January 17, 1992), who was responsible for the in-processing of Army units to the Gulf area, reports that mainly active duty units were sent to the most forward areas, and the mission of the reserve and guard units were combat support or combat service support. He further stated that the active duty units demonstrated far more superior knowledge, training, and discipline for their duties in the combat zone than the reserve or guard units. Unfortunately, the actual numbers of active duty members versus reserve versus guard are unknown, and it is impossible to determine if this number is disproportionately high.

The findings for prior combat experience and its relationship to the development of combat stress are sparse. Only five of the medical charts actually provided information about prior combat experience. In all five cases, having had prior combat experience was the reason given for the soldier's diagnosis of PTSD. For these military members, the Persian Gulf War appeared to be the triggering factor for delayed PTSD from the Vietnam War.

The psychiatric diagnoses of the military members hospitalized from the Gulf War were quite varied. There were a total of eighteen different Axis I diagnoses, which were later aggregated into six groups based on similarities between the diagnostic disorders. Ironically, the diagnosis of combat stress reaction was never officially documented on any chart, and the majority of military members were diagnosed with an adjustment disorder.

There may be several reasons for this finding however. First, as Major Daniels explained (personal communication, May 6, 1991), combat stress reaction is not an official diagnosis of the Diagnostic and Statistical Manual of Mental Disorders (DSM III-R). For the purposes of charting, the physician must use an official DSM III-R diagnosis, and Adjustment Disorder is appropriate in this case. Secondly, although the patients were not diagnosed with combat stress reaction per se, it does not mean they were not experiencing the symptomology indicative of combat stress. That is, the essential feature of an adjustment disorder is "a

maladaptive reaction to an identifiable psychosocial stressor, or stressors, that occurs within three months after onset of the stressor, and has persisted for no longer than six months" (American Psychiatric Association, 1987, p. 329). Additionally, the maladaptive reaction is indicated by impairment in occupational functioning, social activities, or relationships with others, or the symptoms of the reaction are in excess of what is normal and expectable to the stressor(s). Finally, the maladaptive reaction does not meet the criteria for any other specific mental disorder and is not merely one instance of a pattern of overreaction to stress (American Psychiatric Association, 1987). Each of the seven subtypes of adjustment disorder presents a different clinical picture.

In Adjustment Disorder with Depressed Mood, the predominant manifestation is symptoms such as depressed mood, tearfulness, and feelings of hopelessness. Nervousness, worry, and jitteriness are the primary symptoms of Adjustment Disorder with Anxious Mood. When physical complaints such as fatigue, headache, backache, or other aches and pains that are not diagnosable as a specific physical disorder are prominent, Adjustment Disorder with Physical Complaints should be made. Adjustment Disorder with Mixed Disturbance of Emotions and Conduct is made when the prevailing manifestations are both emotional symptoms (depression, anxiety) and a disturbance in conduct. Finally, Adjustment Disorder Not Otherwise Specified (NOS)

involves maladaptive reactions to psychosocial stressors that are not classified as specific types of Adjustment Disorder. Clearly, many of the same symptoms (e.g., psychological withdrawal, restlessness, gastrointestinal upset, sympathetic activity, startle reactions, and anxiety) of the various types of adjustment disorders are also those indicative of combat stress.

The last reason the diagnosis of Adjustment Disorder may have been used pertains to the future medical disposition of the military member. For the most part, military individuals who have a psychiatric diagnosis must meet a medical evaluation board. Usually a psychiatric diagnosis prevents a member from being considered 'world-wide qualified', and a medical separation/retirement or discharge ensues. However, the diagnosis of Adjustment Disorder is insufficient for a medical evaluation board or separation. If the individual can return to duty and readjust with no further difficulties, the commander may retain the member in his/her unit. Therefore, the diagnosis of Adjustment Disorder is considered to be fairly benign and will not affect an individual's career adversely provided he/she can readapt.

The second largest diagnostic finding in this study consisted of anxiety disorders which includes post-traumatic stress disorder and panic disorder (American Psychiatric Association, 1987). The diagnosis of Panic Disorder was given to only one military member, while the other

individuals in this group were diagnosed with post-traumatic stress disorder. Although several of the women were given this diagnosis as a result of allegedly being raped, and five of the members as a result of triggering memories from Vietnam, the remainder of the group was thought to have an acute onset of post-traumatic stress disorder directly from their experiences in the Persian Gulf War. Again, all the psychiatric diagnoses of military members during the Persian Gulf War are related to having been in the war.

Study Implications and Recommendations

The results of this study have implications for nursing practice and recommendations for future nursing research.

Implications for Nursing Practice

The data presented in this study have significant implications for military nursing practice. In general terms, combat stress is a function of the level of fear and danger a soldier experiences, tempered by the ability to resist that fear (Flora, 1985). The individual's ability to resist the fear is further a function of other factors affecting the level of combat stress - individual factors, morale factors, and the physical aspects of combat.

Although nurses have no control over the level of danger a soldier is exposed to, they may certainly have an impact on the soldier's ability to resist fear.

First, military nurses must educate soldiers on the normal responses to stress on the battlefield. If training exercises are made to simulate real-life war, soldiers will

not be surprised at their own normal feelings of fear and stress when they are actually in the war environment. Early identification of these responses will enhance the soldier's control and help prevent extreme reactions such as panic or breakdown (Flora, 1985). Additionally, soldiers who are able to identify normal reactions to the stresses of war will be able to detect when a fellow soldier is at risk of becoming a combat stress casualty.

Another area where military nurses may have some impact is in the building of unit cohesion. Soldiers need to be aware of how important unit cohesion is in preventing combat stress. Units that are having particular difficulties in this area may find the expertise of a nurse helpful. A military nurse could provide a unit with classes in assertiveness, communication, conflict resolution, and anger and stress management. Through training exercises and role playing, individuals could learn how to work out their problems effectively and develop support systems among themselves. Additionally, the more time the unit spends in combat training together, the more familiar they each become with one another's stress responses, thus helping with early identification of combat stress reaction.

Military nurses may also help to reduce the rate of combat stress casualties by providing special teaching and instruction to combat leaders. Frequently an officer is put in charge of a unit because of their rank, and may actually have very little or no combat experience. Leaders in combat

need to be aware of the impact they have on their troops, and their ability to instill confidence and increase morale is a critical function in reducing the effects of combat stress. "The physical presence and outward poise of an officer is critical to sustain most of the soldiers through the strain of fear. Men lean on their leaders for moral support. . . Just as fear is infectious, so too is courage" (Belcher, 1980, p. 53).

Military nurses can educate combat leaders on the effects of fatigue. Based on the findings of the motor vehicle operators, combat leaders should have a thorough understanding of a soldier's limitations and their ability to conduct continuous operations over an extended period. Leaders should be aware that a soldier's overall efficiency significantly decreases if they are not given at least a brief opportunity to rest and recover. Further, fatigue is a major contributing factor in the development of combat stress reaction, and reducing fatigue can dramatically reduce the development of combat stress.

Nurses can also provide education and support to the families of military members in a war area. Based on the large number of married military members who had family problems while they were in the Persian Gulf area, nurses are in an excellent position to teach the spouse at home how to communicate effectively with their loved one in the war area. Classes could be offered to spouses so they become aware of the effect that negative communication has on their

loved one in the war area. Nurses can also initiate support groups for families to talk with one another and share similar feelings and experiences. Nurses are in an excellent position to identify certain family members who are having an exceptionally difficult time and provide proper therapy and counselling. Further, military nurses can teach family members ways to manage and cope with the stress, fear, and anxiety of having a loved in a war area.

Finally, both military nurses and civilian nurses who work with a military population can utilize the concepts and principles of crisis intervention theory to help a soldier effectively recover from the war experience. That is, when a soldier is hospitalized as a result of combat stress, they are unable to resolve a problem by using coping mechanisms that have worked before. When an individual's past coping mechanisms fail, he/she becomes increasingly more frustrated and anxious, finally reaching a point where a crisis ensues and the individual is unable to take any action to solve the problem. At this time, the person is extremely receptive to therapeutic influence. Prompt and skillful intervention on the part of the nurse may not only prevent the development of a serious chronic disability, but may also help to foster and develop new coping patterns that are more effective than those prior to the crisis (Aguilera, 1990).

Recommendations for Future Nursing Research

There appeared to be several personal characteristics common to the majority of military members hospitalized with

a psychiatric diagnosis during the Persian Gulf War. They were mostly young white enlisted men on active duty status in the Army. These members were married and most had been in the Middle East approximately 16 weeks.

Future nursing research is indicated to explore the differences between units that had psychiatric casualties in the Persian Gulf War and those that did not. Additionally, further research could be done on those units that did have psychiatric casualties and compare the characteristics of those members who had a psychiatric diagnosis and those who did not. Future nursing research is indicated to follow a sample of individuals who did have psychiatric diagnoses and those who did not, to determine if any develop PTSD, and at what rate. Finally, nursing research should study the benefits of education and training provided by military nurses to soldiers, on recognizing, reducing, and possibly preventing combat stress reaction.

APPENDIX
DATA COLLECTION TOOL

RANK:
(i.e. E1-E9, W1-W4, O1-O10)

SEX: M F

AGE:

MARITAL STATUS: S M D W

RACE: B H A C O

BRANCH: A N AF M

STATUS: AD R G

TIME IN SERVICE:
(months)

TIME IN MIDDLE EAST:
(weeks)

PRIOR COMBAT EXPERIENCE: Y N
(If YES, Where?)

JOB TITLE:

DAY OF ADMISSION

DIAGNOSIS(ES):

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Julie K. Strong received her Associate in Nursing degree and Outstanding Nursing Student Award from Lake Superior State University in Sault Ste. Marie, Michigan, in 1984. In 1985, she graduated high honors with her Bachelor of Science in Nursing degree from Lake Superior State University, and was then commissioned as a Second Lieutenant in the United States Air Force. While stationed at Wright Patterson Air Force Base, Ohio, she pursued graduate studies offered from Central Michigan University, receiving a Master of Science in Administration degree in 1990.

Julie is a member of Sigma Theta Tau, Alpha Theta Chapter and Alpha Chi, Michigan Gamma Chapter. She is active in the National Alliance for the Mentally Ill and the Air Force Society of Mental Health Nurses. Her professional experience and interests are concentrated in adult psychiatric and mental health nursing and she is currently a Captain in the United States Air Force.

This thesis was submitted to the Graduate Faculty of the College of Nursing and to the Graduate School and was accepted as a partial fulfillment of the requirements for the degree of Master of Science in Nursing.

May 1992

Dean, College of Nursing

Dean, Graduate School

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a thesis for the degree of Master of Science in Nursing.

Karolyn L. Godbey
Karolyn Godbey, Chairperson
Associate Professor of Nursing

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a thesis for the degree of Master of Science in Nursing.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a thesis for the degree of Master of Science in Nursing.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a thesis for the degree of Master of Science in Nursing.

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