Introduction and Overview: Posttraumatic Stress Disorder and Related Diseases in Combat Veterans

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Elspeth Cameron Ritchie

Tracking Bin Laden, by SFC Elzie Golden, courtesy of the Army Art Collection, US Army Center of Military History.

E. C. Ritchie (✉)
Department of Psychiatry, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, MD 20314, USA
e-mail: elspethcameronritchie@gmail.com

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Posttraumatic stress disorder (PTSD) is now a major topic in scientific literature and media, especially after the many years of the wars in Afghanistan and Iraq. This introductory chapter begins by covering some critical administrative and cultural competency issues. It briefly outlines the basics of prevalence, diagnostic criteria, evidence-based, and innovative therapy, in the context of the wars since 9/11. Later chapters delve into treatment with service members and veterans in far more detail. This introduction contains some caveats about the scientific basis of the therapies discussed.

Approximately 2.7 million service members have served in the conflicts since the planes dived into the Twin Towers and the Pentagon on 9/11/2001. Estimates of the numbers of service members who have deployed to Iraq and Afghanistan and have PTSD range from 15 to 25% [1–3]. The number of diagnosed and treated PTSD cases is always lower than those who report symptoms on anonymous surveys, probably related to the concerns of active duty service members about their careers in the military [1, 2].

While about 50% of recent veterans seek care in the Veterans Affairs (VA) health-care system, others do not, and/or get care in diverse settings. Some seek services in both the VA and through their job and educational (e.g., college and graduate school) clinic providers. Therefore, it is critically important that not just military and VA providers but also civilian mental health providers know how to recognize and treat PTSD.

PTSD does not occur just in combat veterans, of course. The symptoms of PTSD also follow sexual assault, crime, and disasters. However, this volume focuses on combat veterans. By combat veterans, we mean both active duty and those no longer on active duty (veterans), including those in the National Guard and reserves. The innovative therapies in this clinical casebook may also be useful in civilian populations, but that is not the focus of the volume.

1.1 Treatment Guidelines and "Refractory" Patients

There are well-established guidelines for the treatment of PTSD, developed by the American Psychiatric Association (APA) and the Department of Defense (DoD) and the Veterans Health Administration (VHA). These are often referred to as evidence-based treatments. These will be summarized later in this chapter and referred to in other chapters. However, there are many patients who are either unwilling or unable or do not respond to the evidence-based treatments.

While these patients may be called "treatment-resistant" or "refractory," it is the treatments themselves that are often not palatable to service members. That may be because of: (1) unacceptable side effects from medication; (2) difficulties with making frequent appointments, especially for the cognitive behavioral treatments; (3) the distaste of many service members to relive their trauma and/or talk about it; or (4) the stigma of seeking treatment from a mental health-care provider.

Thus this volume will focus on the more "refractory" patients, treated with newer and less conventional therapies, with a focus on how to engage reluctant veterans in treatment.

1.2 Administrative Issues and Medical Discharges

Service members need to be physically and mentally fit for duty, according to various regulations [4]. They need to be able to deploy to war zones and other austere environments. They may carry firearms, drive tanks, fly helicopters, and pilot ships.

Thus, if a service member has a severe mental illness, they usually will receive a medical evaluation board (MEB) to see if they are fit for duty. Severe mental illnesses include psychotic disorders, and may include mood disorders and PTSD. If found not fit for duty, they may be medically discharged. A medical discharge usually has some disability benefits attached.

They may also be "medically retired," depending on the severity of their condition. Retirement carries significant health-care and disability benefits (often at 50 % of their base pay). A medical retirement is generally a lifelong benefit. The medical/physical evaluation board, now called the integrated disability evaluation system, is a complex process [5]. Many chapters within this volume refer to the MEB process, which is why it is discussed here.

PTSD does not necessarily lead to a medical discharge. If a service member responds to treatment, he or she may be found fit for duty. Alternatively, with actual practice varying according to the service, they may be administratively discharged, which comes without benefits. The financial discrepancy between a medical and administrative discharge is substantial.

Many of the complex cases described in this book have been referred by their physician to the MEB process. Service members may or may not want a medical discharge, which offers both benefits and potential shame.

There are in general two major drivers of not seeking or seeking treatment, in my experience. Service members who want to stay in the military do not want to go near a mental health provider, as they fear for their jobs. For example, Marines refer to a psychiatrist or psychologist as the "Wizard," as he or she makes Marines "disappear." This often leads to a medical or administrative discharge.

However, those who are nearing the end of their enlistment, or are planning to retire, have many pressures to endorse PTSD symptoms. The pressures include the financial benefits of medical retirement as well as priority for VA care.

1.3 Cultural Competency

A theme throughout the book is of cultural competency. Especially if you are a civilian provider, how do you understand the military culture?

As a start, one of the easy ways is to ask the patient about their military occupational specialty (MOS). Ask about basic and advanced training, and where they have been stationed. Ask when and where they have been deployed. Do not assume that the official DD 214 (official discharge paperwork) will list all their battle assignments.

Learn what their military rank is or was, and ask how they want to be addressed. Some will prefer to be addressed by rank, others by their first name. Patients who

have been in the Special Forces, served at Guantanamo Bay, or have served in classified operations, may not be able to talk about the specifics of their experiences.

An important piece of cultural competency advice for providers: Today's combat veterans do not want to be seen as victims. Treat them as "battle-hardened" or maybe "battle-scarred." Respect their service [6].

1.4 Terminology and Health-Care Systems

The Military Health System (MHS) is separate and distinct from the VA health-care system, usually referred to as the VHA. The MHS mainly consists both of the direct health-care system, offered by hospitals and clinics on military posts, and also the purchased care system, commonly known as TRICARE. Technically, the direct health-care system and the purchased care system are all one in the MHS, but differences exist in eligibility. For example, retirees and dependents can go to the direct care system, but only if there is space available. Often they are referred to the purchased care system under TRICARE. (For more details on these health-care systems, see Ref. [7].)

"Service" refers to the branch of service, Army, Navy, Air Force, or Marines (although the Marines are actually part of the Department of the Navy). Correspondingly, the uniformed personnel are soldiers, sailors, airmen, or Marines. The term "service members" refers to all of the military personnel.

The term "veteran" has several uses. It usually means service members who are no longer on active duty. The term "combat veteran" is used for both service members and those no longer on active duty who have served in conflict zones.

Active duty service members wear the military uniform full time and receive care through the MHS. Reservists include many categories of reserve service members, as well as the National Guard. Reservists usually serve a weekend a month and 2 weeks a year, although there are many variations. Reservists may transition between active duty and veteran status. The National Guard belongs to their state, and may be mobilized in the event of state emergencies, or be called up to action for war.

All reserve components have seen deployments unprecedented since World War II. Their care is often complicated. They receive health care through the military health-care system while active, but are generally not eligible for care when on inactive status. However, they may be eligible for care within the VA system if they have served in combat, or met other eligibility criteria. Often reservists transition between the military health-care system, the VA, and civilian health-care organizations.

The cases discussed here are mainly of service members who have served in Iraq or Afghanistan. The Iraq War is usually called "OIF" for Operation Iraqi Freedom. Later, another term was Operation New Dawn. The conflict in Afghanistan was "OEF" for Operation Enduring Freedom.

But there have been many other conflicts in the last 20 years, including the first Gulf War (Desert Storm), Haiti, Somalia, and Bosnia. The latter three conflicts are often referred to as Operations Other than War (OOTW).

In addition, there have been many humanitarian missions that service members have been deployed to, such as the tsunami in 2004, and operations dealing with Ebola in West Africa in 2014 and 2015. They are not considered combat operations, but have their own share of trauma.

Again, overall, service members will not want to be seen as victims, or heroes, but as battle-hardened, or maybe battle-scarred.

1.5 Current Definition of PTSD

The *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)* is the 2013 update to the APA classification and diagnostic tool which, in the USA, serves as a universal authority for psychiatric diagnosis [8]. PTSD used to be classified as an anxiety disorder (DSM-IV). The DSM-5 now includes PTSD with trauma- and stressor-related disorders. Although the new DSM-5 appeared in 2013, it is only beginning to be widely adopted. The MHS and VA were scheduled to adopt it on Oct 1, 2014. However, the implementation throughout the psychiatric world has been uneven.

These changes are summarized as follows: DSM-5 criteria now identify the trigger to PTSD as exposure to actual or threatened death, serious injury, or sexual violation. The diagnosis of PTSD is currently based on eight criteria from the DSM-5.

The first four criteria pertain to the "actual event" and must result from one or more of the following scenarios, in which the individual:

- directly experiences the traumatic event;
- witnesses the traumatic event in person;
- learns that the traumatic event occurred to a close family member or close friend;
- experiences first-hand repeated or extreme exposure to aversive details of the traumatic event.

Fear, helplessness and horror, as a result of the stressor, are no longer required. The disturbance, regardless of its trigger, causes clinically significant distress or impairment in the individual's social interactions, capacity to work, or other important areas of functioning. It is not the physiological result of another medical condition, medication, drugs, or alcohol.

Symptoms that accompany PTSD should be present for 1 month following the initial traumatic event and include the following: reexperiencing, avoidance, negative cognitions and mood, and arousal:

- *Reexperiencing* covers spontaneous memories of the traumatic event, recurrent dreams related to it, flashbacks, or other intense or prolonged psychological distress.
- *Avoidance* refers to distressing memories, thoughts, feelings, or external reminders of the event.

- *Negative cognitions and mood* represents myriad feelings, from a persistent and distorted sense of blame of self or others, to estrangement from others or markedly diminished interest in activities, to an inability to remember key aspects of the event.
- Finally, *arousal* is marked by aggressive, reckless or self-destructive behavior, sleep disturbances, hypervigilance, or related problems [8].

A study by Hoge in 2014 [9] compared diagnoses of soldiers under DSM-IV TR and DSM-5. In brief, about a third of the soldiers who met DSM-IV TR criteria for PTSD did not meet DSM-5 criteria. Almost a third were in the opposite camp, meeting DSM-5 but not the older criteria. The main discrepancy is related to the new Criterion C, which splits up avoidant symptoms from depressive symptoms [9].

1.6 A Brief Discussion of Comorbidities

While there are a few service members who have "pure" PTSD, in the experience of most clinicians that is the exception rather than the rule [2]. For example, insomnia may lead to drinking to try to sleep. Numbing and avoidance leads to relationship problems and, often, divorce.

Medications used to treat PTSD often have sexual side effects, including erectile dysfunction. The contribution of sexual side effects to divorce and suicide is only beginning to be evaluated. More details follow in various chapters which discuss medications.

PTSD, traumatic brain injury (TBI), and alcohol problems have long been associated with each other. As noted above, patients who "only" have PTSD are rare [2]. Many of the following chapters discuss the treatment of these common but still complex cases.

The physical stresses of military service, including wounds and injuries, contribute to musculoskeletal problems, with corresponding pain and disability. The musculoskeletal issues have led to service members being treated with opiates, which of course can cause dependence and addiction. In both military and civilian populations, many switch from legal opiates to illegal heroin. Many service members, especially after discharge from the military, thus start a sad slide into substance dependence, unemployment, and homelessness. Unfortunately, death by heroin overdose is increasingly common [6].

There is also the question of missed diagnoses. The antimalarial agent mefloquine (Lariam) has been associated with many neurological and psychiatric complaints, covered in detail in a later chapter. Thus, mefloquine toxicity may be confused with PTSD or TBI [10].

1.6.1 Evidence-Based Treatment

There are several forms of evidence-based treatment, covered in well-established guidelines for the treatment of PTSD, developed by the APA and the DoD and the VHA. The principal ones include: (1) pharmacotherapy or medication and (2) psychotherapy.

Pharmacotherapy includes two FDA-approved selective serotonin reuptake inhibitors (SSRIs), paroxetine (Paxil) and sertraline (Zoloft). However, most clinicians use a wide variety of SSRIs, with the choice depending on their side-effect profiles. Many other medications are also used, including second-generation antipsychotics and other standard medications for sleep. (More details will be covered further in later chapters.)

The evidence-based psychotherapies include: (1) cognitive processing therapy, a variant of cognitive behavioral therapy and (2) exposure therapy. The first one involves telling the combat-related trauma, and reframing the trauma. The second includes reexposure to the trauma in a gradual process. A variant of the latter includes "virtual therapy," a computer-aided reexposure process. Service members often like the virtual therapy techniques more than the face-to-face traditional approach.

Eye movement desensitizing processing (EMDR) is now also considered an evidence-based treatment. In the past it has been controversial. Many consider it another variant of exposure therapy. There is no separate chapter on it in this volume, because the senior editor could not find any military or VA authors who were practicing it. It is still used with some success in Israel. However, some consider accelerated resolution therapy (ART) an enhancement of EMDR. ART is covered later in the volume.

Acupuncture is now rising to the level of accepted therapies, but is not there yet. It is also covered in this volume. Another new and promising approach herein is stellate ganglion block (SGB). SGB has received considerable attention in recent years as an almost miraculous cure for some cases of refractory PTSD.

1.6.2 Select Populations: Female Service Members and Reservists

Approximately 15% of the military are female. At present, 15% of active military, 17% of National Guard/Reserves, and 20% of new recruits are women. The recent wars in Iraq and Afghanistan have engendered a growing population of female veterans seeking health care through the VA. Women are among the fastest growing segments of new users of VA health care; as many as 40% of the women returning from Iraq and Afghanistan may elect to use the VA. However, in the available literature, female soldiers have about the same rate of PTSD as males [11].

Certain occupations may lead to an increased rate of PTSD. Some of these occupations are disproportionately drawn from reserve service members. For example, at the beginning of the war in Iraq, truck drivers had an elevated rate of PTSD symptoms, often feeling very vulnerable, "like sitting ducks", to improvised explosive devices and snipers [12].

Medical staff, another high-risk population, are exposed to both horrifically wounded service members and the injured local population. Severely wounded service members are usually evacuated quickly out of theater to Germany and beyond. However, the injured locals stay in the military facilities, sometimes for many months. Injured include children, third party nationals, and detainees.

Detainee missions have their own challenges. The detainees may try to hurt their caregivers, for example by grabbing their buttocks or trying to stab them while they are trying to deliver care. The mission is considered a "dirty one" [13].

Individual augmentees and other reservists are often "cross-leveled" to various units who they do not know. Reservists were assigned to the truck driving missions described above. They have made up a large share of those assigned detainee missions, such as at Guantanamo Bay, Camp Bucca, and Abu Ghraib [12, 13]. Reservists may not have the support of a cohesive unit when they return home.

1.6.3 Moral Injury

The concept of "moral injury" will be referred to in various chapters in this volume. Moral injury is related to but different from PTSD. In general, most authors conceptualize it as an insult caused by either the shame of killing or the guilt induced by having fellow service members die, while one has survived. It may also be caused by the belief that one's unit, or the military as a whole, has betrayed the service member. While not well studied by the medical community, most agree that it is a corrosive condition that contributes to relationship difficulties and suicide.

1.6.4 Suicide

Suicides among US Army personnel have been increasing since 2004, surpassing comparable civilian rates in 2008. Suicide rates peaked in active duty troops in the past few years, but are still rising in reservists. Suicides are consistently highest among young white males but have been rising in older ages and females as well.

Risk factors for suicide among active duty members are well known, since data are systemically collected. These include relationship difficulties, financial and occupational problems, pain and physical disability, and access to weapons [14, 15]. As alluded to above, we hypothesize a contribution of sexual impotence to suicidal thoughts, but there are no systematic data.

Suicides among veterans no longer on active duty are estimated at 22 a day. Less is known about risk factors among these post-services veterans. Anecdotally, suicides among recent veterans have the same risk factors as with active duty service members. For older veterans, they seem to be related to depression and substance dependence, risk factors more similar to the civilian population.

1.7 Case Examples and Clinical Pearls

Case examples are used in the following chapters extensively, and, by design, form the core of the teaching points. These are generally composite case examples, to both illustrate teaching points and to conceal identities. If actual case examples are used, the patient has given permission to use them.

Clinical pearls, also by design, are what clinicians have found useful in their practices. They are not usually borne out of practice guidelines, but rather what clinicians have found to have worked in their practice with combat veterans.

1.8 Conclusion

This casebook broadens the treatment options for PTSD and related comorbidities, by describing complex cases seen in clinical practice. These treatments include mindfulness, canine therapy, novel psychological and psychopharmacological interventions, psychoanalysis, virtual reality, and SGB. These are often received well by veterans, but we do not know which works for whom.

A related warning: Many of the treatments in this volume do not have the research background to affirmatively mandate their use. They are not yet FDA approved. It is imperative that the more promising ones receive more research scrutiny and funding.

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