War and post-traumatic stress disorder

War, like terrorism, instills fear and threat at both an individual and a societal level.

Soldiers of war and military peacekeeping forces are not only at risk for being maimed but also for witnessing, or suffering from, the aftermath of violence. While many soldiers function well under trying circumstances and remain asymptomatic, a significant number fall victim to a host of post-traumatic sequelae, of varying persistence and severity.[1] In 1952, following several accounts of combat stress reactions that occurred during World War II and the Korean War, the diagnosis of 'gross stress reaction' was introduced in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-I*).[2] 'Gross stress reaction' was a condition that described abnormal behaviour developing in previously healthy individuals who were exposed to extremely stressful situations, like war or natural disasters. Since its introduction in the original *DSM*, a variety of post-combat syndromes associated with the major wars have been categorised.[3] The polymorphic nature of these syndromes indicates that there is not one symptom presentation common to all of the modern wars of the past century; rather, the variation in clinical presentation across wars and battlefields is to some extent culturally conditioned, and influenced by the changing nature of warfare.[3]

Today, the two most conspicuous expressions of post-combat syndromes are arguably combat stress reaction (CSR) and post-traumatic stress disorder (PTSD). Combat stress reaction, also known as 'shell shock' and 'combat fatigue', is characterised by multiple cognitive (e.g. confusion, memory impairment, disorientation), affective (e.g. anxiety, depression), and behavioural (e.g. agitation, withdrawal, running amok) symptoms.[1] The definition of CSR is first and foremost functional and soldiers with the condition cease to function as combatants.[1] However, bizarre, grossly disorganised behaviour and marked symptom variability often confound recognition. The second type of trauma-induced reaction, PTSD, is a more widely accepted and empirically validated post-combat syndrome. In the *DSM-IV* it is defined by the experience of a traumatic event that threatens the individual's life or physical integrity.[4] Traumatic events in the *DSM-IV* thus include instances of witnessing trauma to others (such as witnessing battle or being involved in rescue operations). This is in recognition of the fact that the pathogenic effects of combat trauma are not only experienced first-hand but collaterally – that is, adverse outcomes are not limited to those who are exposed and directly afflicted but also have a bearing on relatives and friends who may become secondarily ('vicariously') traumatised.[1] Whether the mental health sequelae in individuals directly exposed to war are quantitatively and qualitatively different from those not directly exposed remains a major gap in our knowledge about military PTSD.

The diagnosis further requires an intense reaction involving intense fear, horror or helplessness, and the development of three distinct clusters of symptoms (intrusion, avoidance, hyperarousal). To meet criteria, the symptoms (which overlie the implicit difficulties that people with PTSD have in regulating their traumatic memories and its emotional content) must persist for at least 1 month and cause functional disturbance. The time course of the disorder provides the basis for differentiation of PTSD into acute (< 3 months), chronic (> 3 months) and delayed onset, with the start of the symptomatology more than 6 months after trauma.[4] PTSD secondary to combat is not uncommonly associated with a late onset of symptoms, a chronic course, delayed help-seeking behaviour, and substantial morbidity.[5]

In the USA, direct combat exposure accounts for a large proportion of the PTSD seen in men. Indirect exposure, such as witnessing the aftermath of violence and death, has been shown to create risk for anxiety, anger and aggressive behaviour and somatic complaints, as well as for PTSD.[6] Combat exposure (direct and indirect) also contributes to the presence of current major depressive disorder, substance use disorder, marital separation, divorce, and spousal abuse,[5] and the existence of other psychiatric disorders may increase the vulnerability to development of PTSD after exposure. In the Vietnam Experience Study,[7] 66% of those who met criteria for PTSD also met criteria for another anxiety or mood disorder and 39% had current alcohol abuse or dependence. The vast majority of soldiers with PTSD therefore meet criteria for at least one other psychiatric disorder.[8] Several hypotheses have been advanced to explain the high levels of comorbidity – one

such hypothesis, the self-medication hypothesis (i.e. turning to alcohol and drugs as a means of alleviating painful emotional symptoms), has been used to explain the connection between PTSD and substance use disorders.[8] Among PTSD veterans, the presence of high-risk behaviours such as suicide attempts, violence and substance use can persist even after treatment.[9]

In war, while many soldiers are distressed and challenged by their experiences, only some of them go on develop PTSD. In other words, exposure to the trauma of war is a necessary but not sufficient cause for the emergence of PTSD. Why one soldier may be resistant to the effects of war and another not requires an understanding of the relative contribution of risk and resilience in the development of the disorder. There is now convincing research to show that in veterans intrapersonal, historical, and environmental factors as well as post-traumatic recovery variables are as important in the causation of PTSD as is exposure to war trauma.[10] For example, both shared unknown genetic factors and shared adversity and familial disturbance contribute to risk. The demands of the war zone and perceived threat to life are also important determinants of long-term adaptation.[10] In addition, the specific nature of combat experiences (e.g. frequency and intensity of exposure), immediate subjective responses to these experiences, and the extent of acute stress reactions have all been strongly associated with the development of PTSD in combatants.[11] Although a whole series of risk factors for the development of PTSD have been empirically validated, only few systematic surveys exist on protective factors. One protective factor is social support, and the association between social support and the development of PTSD was shown in one study to be very robust in combat veterans compared with civilians who were exposed to interpersonal violence.[12] Veterans who actively engage in the community are also thought to be less likely to develop PTSD.[13]

This issue of *SAJP* carries two studies by Okulate and colleagues[14,15] on violence, PTSD and associated psychiatric sequelae among Nigerian soldiers. The first study investigates pre-traumatic and peri-traumatic socio-cultural factors and mental health attributes (e.g. stress-related disorders, history of violence, personality disorder, psychosis) that may contribute to the genesis of homicide – homicide on the battlefield committed against fellow soldiers. Homicide among military personnel is far less predictable than it is preventable. Although it is acknowledged that grief constitutes a large part of a homicide survivor's experience, that experience also includes homicide-related intrusive thoughts, avoidance of homicide-related stimuli, physiological arousal, and impairment in functioning.[16] In describing a case series of homicidal violence perpetrated during a military peacekeeping mission in Liberia and Sierra-Leone, the authors highlight: (*i*) the need for more careful scrutiny and mental health screening of soldiers sent on overseas missions; (*ii*) adequate management of identified stress-related disorders in mission areas; and (*iii*) the importance of promoting cohesiveness within troops. At present little is known about the short- and long-term effects of homicide survivorship among troops, and this is an issue that warrants further research.

It has been said that 'war is the ultimate in human aggression'.[1] The lasting psychological consequences, including the shame and guilt of causing destruction and of perpetrating violence, is an area that has been strikingly under-researched. Aside from survivor guilt and guilt about the commission or witnessing of violent behaviours, other aspects include: (*i*) guilt over acts of negligence or error; and (*ii*) guilt concerning one's thoughts or feelings during and after combat.[17] Guilt is one factor that is thought to mediate the relationship between participation in and/or witnessing atrocities during war, and an increased risk for developing PTSD.[17] The severity of combat guilt also relates positively to the severity of PTSD.[17] Two combat experiences that have been particularly associated with guilt and PTSD are single-handedly killing others and failing to prevent the death of others.[18] Notably, in clinical trials feelings of guilt associated with PTSD have been shown to respond favourably to antidepressant treatment.[19,20]

In the second study, Okulate and Jones document a prevalence rate of PTSD of 22% among Nigerian army patients evacuated home from Liberia and Sierra-Leone for medical reasons. Among these inpatients, the presence of PTSD was found to be significantly associated with witnessing fellow soldiers dying, longer duration of combat, and cannabis use. Survivor guilt in the men was associated with current use of alcohol, lifetime use of cannabis, and lifetime use of the combination of local brew and gunpowder. Further, witnessing the death of others and avoiding circumstances reminiscent of unpleasant experiences predicted the presence of survivor guilt. These findings point to the need for greater clinical attention to the role of guilt in the evaluation and treatment of army personnel with PTSD. Given the strong association between combat guilt and PTSD, further work is needed to elucidate its role in the initiation and maintenance

of PTSD. Guilt and symptoms of depression, anxiety, psychosis, and substance abuse may be precipitated or worsened by repeated or continued exposure to combat, and this can have important implications for effective intervention in traumatised war survivors with PTSD.

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