

Soldiers Can Take It – A Conceptual Analysis of Trauma

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ABSTRACT

Purpose: This article will analyze the concept of trauma, and illustrate distinctions between accepted definitions and actual meaning. For populations at high risk for exposure to traumatic situations, such as Special Operations Forces (SOF) and deployed military personnel, delineating the beliefs and environment-specific comprehension of trauma and its consequences is imperative. **Background:** Trauma is a common term in health sciences literature and in the social vernacular, but is often misunderstood and lacks specificity. Differences in perception of what trauma is and is not may exist even between civilian and military populations. Therefore, the concept of trauma warrants clarification, to define the terminology and to use it appropriately with full understanding. **Data sources:** EbscoHost, PubMed, CINAHL, MedLine, and Google Scholar. Only English-language results were accepted, and were limited to publications from the dates of 1975-2010.

INTRODUCTION

Misunderstood concepts produce bad science, and even worse care delivery.¹ For those who provide and study trauma care, the concept of trauma should be universally understood. Superficially, the term “trauma” appears to be a well-defined and universally understood concept. There is even trauma on television.

However, within theaters of combat, the perception and definition of trauma may be different. The earliest mention of trauma and traumatic experiences in the literature suggest that this concept may have been borne of Soldiers and their experiences in war. Yet we have managed to marginalize the concept of trauma, because with war comes violence, and with violence comes death and injury.

PURPOSE & GOALS

“If a concept is used without first being clearly defined, then any work on which it is based also will be unclear...”² We have to pick apart what we know to be true of trauma if we want to actually contribute positively to trauma science.³

How does trauma relate to views of injuries in combat, and the severity of those injuries and experiences? Can we add to the body of knowledge anymore? Is there evidence that needs clarification? A lot of the produced evidence demonstrates a lack of clear understanding of this concept.⁴ The way we toss around the term “trauma” stifles the gravity of the word and our understanding of what trauma does. We need to narrow and focus on an often-overused and tacitly accepted term to better define the strength of it. To better use the terminology in describing injuries sustained within military populations, we have to grasp the gestalt of the words in our clinical lexicon.

Special Operations Forces represent and sustain some of the most transparent examples of what is referred to as “trauma,” SOF may experience and have treated many of the most grave and complex traumatic injuries in combat. “Even the most novel and sophisticated methods in the pres-

ence of unclear thinking can impede scientific progress.”⁵ Despite the acumen of SOF medical personnel, all are at risk of providing sub-standard care if comprehension the basic concept is lost.

The first order of business is to assess what is known, which including identification of the phenomenon in question.⁶ What are the etiologic factors in trauma? How can we frame this question?

Haddon’s Matrix is especially salient to trauma in that it provides a strong framework for empirical study.⁷ To develop strategies to understand trauma, we first intersect the agent (harmful amounts of energy) with the host (Soldier) and the environment (combat). This narrows down many factors that contribute to trauma experienced in combat.

We can then define the actual event which causes trauma, determine mechanisms of injury, and then develop evidence-based interventions. Simply put, the process is to “(a) define the dimensions of the matrix; (b) review the literature; (c) use existing science and theory to identify and develop potential interventions. Ultimately... scientists test the effectiveness of the interventions to prevent, reduce, or control injury using rigorous scientific methods”.³

DEFINITIONS

The common use of the word “trauma” originates from the Greek “traumata,” meaning “to wound” or “I injure”.⁹ More specifically, trauma is explained as an “... event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others”.¹⁰ This concurs with the American Psychological Association’s criteria for trauma.¹¹ Both definitions indicate significant damage to the integrity of a person’s body or soul. Emotionally, trauma is “an extremely distressing experience that causes severe emotional shock and may have long-lasting psychological effects”.¹²

Generally, we know trauma comes from damaging events and progresses to more specific indicators of severity.

Non-clinical synonyms describe trauma as upset, disturbance, ordeal, suffering, pain, strain, distress, and damage.¹³ All definitions and synonyms for trauma indicate severity that's way beyond the scope of words like mild or moderate. Ironically, the opposites of trauma are what we hope to accomplish as providers: restoration, alleviation, healing, help, and relief.¹³

How does trauma fit in operational settings? What is an "operational setting"? "... A precise operational definition by its very nature increases the validity of the construct".¹⁴ Essentially, an operational definition describes how something is measured. If report that a patient has a LeFort Type II fracture, pretty much all trained personnel can envision the injury. Yet the military lags behind in operational definitions, and sometimes declares a definition operational when it has no such measurements in the description.

For example, in 2008, a memorandum to deployed United States forces in Iraq stated that medical management and "... diagnosis of concussion must include the military operational definition of (mild traumatic brain injury)...".¹⁵ Would everyone understand what mTBI is, based on the terminology provided? The terms are inherently conflicting: mild, traumatic, and injury. Trauma and injury sound similar, but trauma is grievous pain and disruption. Injury is the act of loss or hurt sustained by trauma.⁹ Mild denotes peaceable, placid, and soft gentility, in direct opposition to an event that is disruptive and damaging.¹² Why are we describing trauma with such oppositional terms?

Operational definitions are those in which the concrete and specific definition is constructed and worded in terms of the operations by which observations are categorized or measured.¹⁶ The observations of sustained trauma need categorical, measured systems to indicate severity of injury. Defining traumatic brain injury (TBI) as "mild" does not result in an operational definition.

Trauma is a concept that requires measurement by validated tools and instruments which can index and score acuity. Subjective antonyms of trauma confuse and detract from the implied gravity of the injury sustained. If we are going to develop and use indices to describe severity, our concept has to be crystal-clear and painstakingly analyzed.^{14,17} After the concept is clear, the tools that measure combat-specific trauma have to also be reanalyzed; the metrics have to match the concept.

HISTORICAL AND CULTURAL DEFINITION

Historically, the concept of trauma is defined by the military and their experiences in battle. Today, the same images of Soldiers in combat marginalizes trauma as an inherently damaging experience, because the concept of "Soldiers can take it" pervades, but few understand the traumatic severity. After years of war, both military and civilian populations have become numb and accustomed to images of warfare.¹⁸ This vicarious trauma tends to result in apathy.

The military sustains the majority of the most complex and injurious trauma. The suffering experienced by civilians who sustain trauma is often misperceived by the military. For example, it might be difficult for an SOF Operator

on his sixth deployment to Afghanistan to sympathize with the post-traumatic stress reactions of a bank teller who was once robbed at gunpoint.

Combat trauma is an expected consequence of operations and an accepted part of engagement. Hungarian psychoanalyst Sándor Ferenczi (1873-1933) caught this after World War I. It is interesting to note that Ferenczi's early writings on trauma were in connection with the war, and based on his experience with *Soldiers* who suffered ... look at the culturally defined field of common meaning that the notions of a Soldier, army and military have".¹⁹

In studying and writing about trauma, Ferenczi chose to use a common phrase in his mother tongue, "*Katonadolog*" (Soldiers can take it).¹⁹ Even early on, society's introduction to the concept of trauma was from witnessing Soldiers in war and after. "Soldiers can take it" highlights the divide between how the military and civilians perceive trauma. The context and culture in which trauma occurs produces the gravity assigned to it; the definition of civilian is "one who is not military".⁹

The very nature of unconventional warfare requires that SOF personnel willingly expose themselves to situations in which they are likely to sustain trauma, and to inflict it when required- without pause or question. "This seemingly disciplined subject can endure and obliterate everything, as a Soldier is expected to do...".¹⁹ Universal acceptance of trauma as an expected consequence of military engagement has quite possibly desensitized the public – and perhaps even the conventional military and SOF personnel – to the intense and damaging impact of the experience on the body and the soul.¹⁸

LITERATURE REVIEW

The initial literature review used the term trauma. The author soon discovered that most of the results related only to providing trauma care or PTSD. Therefore, the author identified attributes and synonyms to help in the search.

MeSH is the "the National Library of Medicine's (NLM) controlled vocabulary thesaurus".²⁰ It consists of "sets of terms naming descriptors in a hierarchical structure that permits searching at various levels of specificity".²¹ Twenty-one items were returned, and the heading "Wounds and Injuries" was selected. The MeSH definition provided was "damage inflicted on the body as the direct or indirect result of an external force, with or without disruption of structural continuity."²⁰

The subject heading was exported to a PubMed search, which returned 45,605 results. Application of Boolean operators "AND definition," returned 1,704 results. When "AND concept" was applied, none of the 69 returned results indicated existing literature specific to conceptual analysis of trauma. To ensure thorough review, the Cumulative Index to Nursing and Allied Health Literature (CINAHL®) was then searched to confirm the dearth of existing publications regarding the precise concept of trauma.²² The phrase "Concept analysis AND trauma" was used in several different search techniques through CINAHL®. One result returned, but the citation was the conceptual analysis of *risk* for trauma, emphasis mine.²³

Additional searches in CINAHL® and Google Scholar® were attempted in identical fashion, using identified synonyms and attributes of trauma, such as hurt, wounds, and injury. No results were returned that were specific to conceptual analyses of hurt, wounds, and/or injury. Many results indicated functional analyses of injuries, and other analyses of *hurt feelings* and similar terminologies. Ultimately, exhaustive review of the literature did not reveal previous analysis of concepts trauma, hurt, wounds, or injury.

Given that a previous concept analysis of trauma wasn't found in the literature review, it's possible that we're providing care and producing science without fully understanding what trauma is and what it means.

ATTRIBUTES

Related concepts and defining attributes are characteristics of a concept that present repeatedly in the literature. Attributes of trauma include damage, grievance, wrong, hurt, upset, disturbance, distress, and pain.

ANTECEDENTS

Events or incidents occurring before the concept are antecedents.¹⁴ Further reviews of the literature to determine antecedents of trauma or traumatic events revealed little. Attributes of trauma were used to determine possible antecedents. Many models of epidemiology and public health methodologies appeared in the literature after the attribute injury was substituted as a search term. Haddon's Matrix was the most applicable antecedent, and it can be used as a model for studying injuries and injury prevention strategies.⁸ The framework of Haddon's Matrix mimics the characteristics of antecedents. By using the host-agent-environment model from the Epidemiological Triangle, Haddon's Matrix describes interacting factors that contribute to the injury process.⁸

The host is the person at risk for injury. The agent of injury is energy (causing trauma), transmitted to the host through a mechanism. The environment includes all the characteristics of the setting in which the traumatic event occurs; for SOF personnel, the environment would be mostly austere environments constituting theaters of combat operations.

Haddon's initial configuration refers to phases: pre-event, event, and post-event. The pre-event, or antecedent leading up to trauma, would be precipitating factors, or exposure to risk. Although we see Haddon's framework mostly in civilian injury research, it applies easily to deployed SOF personnel, or SOF personnel training in remote wilderness environments. For instance, the antecedent to combat trauma is risk and exposure—found easily in-theater.

Trauma is an "event or events that involve actual or threatened death or serious injury, or a threat to the physical integrity of self or others".¹⁰ Combining that definition of trauma with the antecedent of exposure demonstrates that direct injury is not necessary to precipitate trauma. Risk of harm or injury may be enough to replicate the event or produce a response.

For example, Special Operations aviation personnel might not sustain direct hits from small-arms fire while airborne, or sustain injuries from a ground-level explosion. Yet the exposure to the antecedent and threat of death, or constantly witnessing traumatic events, may be enough to initiate a traumatic response. We know repetitious exposure to trauma evokes similar bio-behavioral responses to actual trauma, even if the threat is indirect.

CRITICAL ATTRIBUTES

Critical attributes of a concept analysis provide the most insight.¹⁴ First, trauma is a disruptive and forceful event. Second, trauma does not always disrupt the integrity of an individual's body or mind. Proximity and exposure may be enough to damage an individual. Third, and especially salient to SOF populations, is expectation.

The expectation of exposure to violence and risk of trauma in SOF personnel is expected. Experienced Operators have keen situational awareness and comprehension of risks within the battle space. In the context of combat, we perceive trauma as less of a shock in the sense that it is expected—trauma and injury are consequences of military engagement. Trauma can also occur cumulatively: "trauma does not have to mean the occurrence of one, major, catastrophic event".¹⁸

CONSEQUENCES

Consequences of direct trauma to a person (host) by an instrument or vector can result in significant bodily injury, with ranges of severity from disruption of structural integrity to injuries that cannot sustain life. Trauma is a broad term, and used often to describe a stressful event. However, stress reactions in response to trauma are not necessarily outcomes from trauma, but more a variable and individual consequence of exposure to trauma. Behavioral consequences of direct or vicarious exposure to trauma include intrusive symptoms such as obtrusive thoughts, flashbacks, and nightmares; constrictive symptoms include feeling numb and dissociative.²⁴

We expect to see extreme disruption of the body in our patients. We know what the consequences of trauma are: they will be serious, disruptive, and grim.

MODEL CASE

Case examples demonstrate the critical attributes of trauma. In a model case, the most pure and obvious example of the concept is presented.¹⁴ In the following model case, the critical attributes of disruption, exposure, forcefulness, and expectation are presented to demonstrate a model case of trauma experienced by an SOF element.

An SOF task force team prepares to enter and clear a one-story building in Khost Province, Afghanistan. As the team members enter the structure, a pressure-plate IED detonates. The IED was poorly constructed and placed against a non-load bearing wall. The first team member takes the brunt of the detonation, and is killed instantly. Two team

members are blown to the floor and suffer amputation of lower extremities, caused by shrapnel secondary to the blast wave. The three remaining team members on the inside are knocked unconscious and sustain various penetrating injuries from shrapnel.

BORDERLINE CASE

Borderline cases demonstrate the concept as it is understood from almost all attributes save one or two.¹⁴ In the following borderline case, the same critical attributes are utilized, but serve to identify misconceptions that may surround the concept.

An Infantryman is driving a large military vehicle to an on-post facility, where the Soldier will wash the truck.

While driving the vehicle within accepted operational speeds on a domestic road in the United States, the rear tire of the truck is punctured and violently tears off from the wheel's rim. The truck swerves off the road and rolls down into an irrigation ditch, causing the driver to smack his head on the window and lose consciousness. This Soldier was not expecting this event to occur, and the consequence was not an expected possibility.

RELATED CASE

Related cases are similar to the specific concept, but they do not contain all the defining attributes, despite connections to the model case and similarities to the main concept.¹⁴ The following related case shows surrounding concepts to trauma, but differences are evident.

The year is 2007. A personal security detail is riding in a convoy of vehicles along Route Irish in Baghdad. Military explosive ordinance disposal (EOD) team members halt the entire convoy. The EOD team notifies the convoy commander that there is an improvised explosive device (IED) buried underground fifty meters in front of the convoy, and the EOD team will neutralize the device. The convoy commander stands outside of his assigned vehicle and watches the planned detonation.

Ten pounds of military-grade explosives detonate one hundred pounds of IED explosive material, which exponentially compounds the blast's force. The combined blast pressure unleashes a concussive force beyond the fifty-meter radius. The convoy commander is knocked to his knees but does not lose consciousness, nor does he sustain any external wounds.

CONTRARY CASE

Contrary cases show exactly what the concept is not, as demonstrated by the following case.

A medical student in the United States gets into his car after class, and drives home. E very traffic light is green, a police cruiser is traveling the same route as the student, and the roads are clear. The car's radio is playing his favorite songs, and the car's engine is finely tuned and runs smoothly. He arrives home without incident.

REVISED DEFINITION

All definitions and the literature indicate that trauma is a concept that carries gravity germane to the disruption it causes. Therefore, the revised definition will include several key attributes most salient to the concept: *Trauma is a measurable event in which significant amounts of damaging energy transfers to a host, causing considerable disruption to physiological, structural, or psychological integrity. Outcomes from traumatic injury include physiologic and emotional responses of varying magnitudes, but exclude those of inconsequential and negligible natures.*

For Special Operations personnel, this revised definition serves to refute subjectivity suggesting that combat trauma has insignificance, and avoids dismissal of signs indicating exposure to trauma, labeling it as "mild" or "moderate". The way we currently use terminology regarding trauma has been minimized to the point that those words no longer serve to define.

CONCLUSIONS

Trauma is a concept of different meanings in different populations. Trauma differs between civilian and military medical professionals, and possibly even between conventional and unconventional military medical structures. Not everyone knows intrinsically what trauma actually means, or in what contexts it exists. Two wars' simultaneous operation has produced unprecedented advancement in technical trauma science. However, both research and theory require precise definitions and concept analysis to standardize and guide exploration and study of this phenomenon.

Neglecting to analyze the concept of trauma is the first misstep in the production of bad science. Accurate measurement of variables can occur only after painstaking clarification of the concept in question precedes the quantification. Extensive research exists specific to human responses to trauma in militarized situations. However, application of concepts with clear definitions is a key component in delivering trauma care and predicting recovery from traumatic injuries sustained in combat.^{25,26}

Said Alice to the Cheshire Cat: "Would you tell me, please, which way I ought to go from here?" she asked. "That depends a good deal on where you want to get to," responded the Cat. "I don't much care where," answered Alice. "Then," said the Cat, "it doesn't matter which way you go," (p. 62).²⁷ If we care little for the basic concepts that define Special Operations medicine, then we have very little to guide us.

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