Ready, Aim, Fire! :

The Integration of Battlefield Acupuncture into

Contemporary Military Medicine

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Abstract

This report investigates the possibility of the integration of battlefield acupuncture into contemporary military medicine for the Air Force, Army, and Navy. First, the theories of contemporary acupuncture and military pain are introduced, recognizing that what they have in common is a bio-psycho-social approach. Next, the report uses evidence from the research of Col. (Ret) Niemtzow to identify that battlefield acupuncture should be integrated for its spectrum response to pain due to pain’s comorbidities in a military population, its fast results, and its use to reduce the instance of medication addiction as a military population phenomenon. Finally, the report identifies that both cost (of materials, research, and education) and the cultural acceptance of acupuncture as a treatment need to be evaluated. The report concludes that because of the strong psychobiological effects of acupuncture in domestic military care centers, the integration of battlefield acupuncture into military medicine would be a favored approach to pain management for this population.
Battlefield Acupuncture

Introduction

Pain is a challenging but absolutely necessary topic for today’s medical research, as it continues to affect the lifestyles of Americans on a day-to-day basis. Current research tends to conclude that pain has a bio-psycho-social basis, and in no other population can we evaluate these three approaches more so than in the military population, which has a very specific culture and exposure to physical and mental trauma that has the tendency to stimulate acute and chronic pain. Studies have shown that acupuncture may be a successful adjunct treatment for pain management within this population.

Acupuncture in the military made its first noticeable appearance in 1965 at the Second Surgical Center in Vietnam before being introduced as a treatment at the Walter Reed Army Medical Center in the 1980’s. However, the use of acupuncture did not gain traction in military care until the 1990’s. Upon request from former Assistant Secretary of Defense Sue Bailey, DO, to lecture about the use of acupuncture to treat breast cancer in 1998, Col. (Ret) Richard Niemtzow, MD, PhD, MPH, gained national attention for the use of acupuncture in soldiers. Niemtzow served as the Department of Defense’s first full-time military medical acupuncturist at the National Naval Medical Center in San Diego from 1998-2002. Niemtzow immediately relocated when the Air Force Surgeon General approved the establishment of a medical acupuncture unit at Andrews Air Force Base in Maryland, where he continues to practice today and has carried out multiple research trials.

Due to the efforts and research of Niemtzow, the Air Force instituted battlefield acupuncture as a treatment method in 2010, and in 2013, a conference was held by the Department of Defense (DoD), National Center for Complementary and Alternative Medicine (NCCAM), and National Institutes of Health (NIH) to educate and share ideas among approximately 70 expert
Battlefield Acupuncture attendees. Using the subtopics of this workshop as a guide, this paper will address theories which contribute to the basis of the argument for battlefield acupuncture. This discussion will lead to specific arguments for and against the expansion of this intervention among the branches of the contemporary Armed Forces.

**Pain in the Military Population**

Pain acts as an important sensation by functioning to protect the body from injury. A report titled “Acupuncture in the Military” by York et al. provides, from an external source, an accurate summary of pain sensation as “a system of avoidance and a system that promotes restoration or repair” (York et al. 3). In other words, the sense of pain causes the mind to 1) avoid causing further injury by utilization or causing risk to an area in pain in order to 2) allow the body’s physiological repair systems to act in their greatest potential. However, sometimes the pain system acts in non-harmed circumstances, becoming stimulated with non-harmful stimuli or for no physiological reason at all. Although this maladaptive pain is not tied to injury, it still leaves the body to be less functional by being unable to act comfortably.

Military men and women suffer from acute trauma and, due to the nature of their job, often suffer from Post-Traumatic Stress Disorder (PTSD), depression, and anxiety overlapping their injuries. York et al. refers to Jonas et al. in the distinct characterization of this pain leading to somatic dysfunction as war-related trauma spectrum response (wrTSR) (York et al. 3). It is emphasized in this report that direct trauma of war is not the only psychological cause of maladaptive pain and systemic malfunction; the stress of rigorous training, multiple deployments, family back home, and increased pace in work environment can activate pain senses. Therefore, a multi-systems approach to pain management such as acupuncture would be a beneficial adjunct treatment.
Contemporary Acupuncture Theory

Acupuncture is one of the oldest recorded healing treatments for pain. In the family of Eastern Medicine, this treatment derived from Asian countries including China, Japan, and Korea and is incorporated in the family of Complementary and Alternative Medicine (CAM). Traditionally, Chinese medicine states that the efficacy of acupuncture comes from its regulation of one’s Qi, or internal energies. Western medicine translates this as the return of the body to homeostasis; in terms of a state of pain, this would refer to pain modulation, or moving towards a pain-free state.

The NIH sponsored a conference in November of 2005 in Bethesda, MD, titled “Neurobiological Correlates of Acupuncture.” The information about the physiology of acupuncture in the conference report leads us to believe that at the point of needling, connective tissue changes stimulate sensory nerves which signal the brain. A neural pathway between the hypothalamus and medulla is activated, and neurotransmitters including endorphins from the medulla may be released into the body to return it to a state of homeostasis. An alternative theory is the gate control theory, which asserts that by stimulating pain sensory regions with a larger connection to the brain, the pain sense from other regions of the body is dulled due to the brain’s larger inputs from the acupuncture treatment, stimulating the body’s chemical and hormonal pain relief mechanisms.

The NIH states in their guide to Acupuncture for Pain that in the United States, medical acupuncture has been scientifically affirmed to successfully treat pain, especially chronic low back pain and osteoarthritis of the knee, in the general American population. Further research is required, however, to affirm successful use in other conditions. According to the National Health Interview Survey in 2007, acupuncture was used by 3.1 million US adults and 150,000 children in
Battlefield Acupuncture

the previous year (2). Back pain, joint pain, neck pain, and headache are among the top conditions treated by acupuncture in the United States, with others including heart disease, asthma, dental pain, and postoperative and post-chemotherapy symptoms including nausea and vomiting. Acupuncture continues to be studied as a treatment for addiction, fibromyalgia, and stroke rehabilitation among other syndromes.

**Indications for Implementation of Battlefield Acupuncture**

**Spectrum Approach**

Acupuncture is based on stimulation of the nervous system, which is in itself a psychobiological system connecting the brain to the rest of the body and environment with neural pathways for sensory perception. The outcomes of an acupuncture clinical trial published by Niemtzow et al. in 2008 investigated the effectiveness of various acupuncture treatments on Department of Defense beneficiaries – active duty, dependents, and retirees – who experienced pain that was currently unresolved by standard treatment measures. Of 118 subjects, 58 had pain that was improved (54) or eliminated (4) by therapy. Seventy-five percent of patients regarded their treatment as “successful”, and further, quality of life scores for physical, mental, and general health as well as vitality all increased from baseline to follow-up. This shows that acupuncture treatment is successful in not only treating pain but by improving quality of life as a whole, including the ability to fully participate in work assignments and social life without pain as a barrier. The sooner medics can provide this effect to the injured soldiers, the more likely it is that soldiers will have successful pain cessation earlier in their treatment over time.

**Timely Effects**

The first advantage of acupuncture is that there is a very short length of time between administration and immediate effects. In 2006, Niemtzow et al. launched a pilot study evaluating
Battlefield Acupuncture
auriculotherapy as a pain treatment for those entering the emergency room of Andrews Air Force Base in Maryland presenting with pain requiring only outpatient pain management treatment as determined by a physician. Upon leaving the ER, those who had been treated with auriculotherapy had demonstrated a 23% reduction in pain before leaving the ER with the use of acupuncture as compared to no acupuncture. The conclusions of this trial speculate that this treatment may be a successful adjunct or replacement treatment as compared to narcotic therapy. Further, the fact that this study was blinded to medical personnel by the use of ear bandages on both the experimental and control groups shows that the treatment is minimally invasive and therefore has little room for side effects or risk to patients outside of allergy to needles or accidental puncture of organs other than skin when performed by trained clinicians. The speed of this medication also fits the description of American cultural needs as timely and targeted, therefore adding the necessary social element to the bio-psycho-social treatment.

Addiction Reduction

Addiction to medication in the military has a number of factors, including age demographic and medication restriction, which both lead to drug dependency. A report by the Army Pain Management Task Force showed that pain can be controlled by over-the-counter and prescription medications, but warns that the main military demographic of aged 18-25 troops is subject to overreliance on the medication which leads to addiction (York et al. 9). Military troops are restricted in the medications that they can ingest, especially in the Air Force, where side effects such as drowsiness can put the lives of many at risk. This leads to addiction to the few medications that are permitted as the body becomes resistant to the medication and builds up a tolerance for the initial dose.
Battlefield Acupuncture

Additionally, the effectiveness of a medication is best described as its ability to have a desired effect by directly causing change to a target body function. Therefore, the effects of a spectrum syndrome, such as wrTSR, are difficult to control with one medication. Soldiers with wrTSR are treated for symptoms including not only pain but also anxiety and depression – along with other symptoms specific to each case – and are therefore prescribed multiple medications for multiple symptoms. These addictions not only put the soldiers’ health at risk during battle, but if medical treatment is needed at any point, medications could inhibit treatment for acute injury or illness. Acupuncture could serve as a single treatment to treat multiple effects, perhaps not eliminating the use for medications but instead for reducing dosage or frequency of medication use to eliminate the risk of addiction. The side effects of acupuncture are also more minimal as compared to the disturbing or even lethal side effects of many medications, which when used on the battlefield would prevent troops from staying prepared and alert.

Contraindications for Integration of Battlefield Acupuncture

Cost

In his 2006 study, Niemtzow et al. identified that the cost of the Aiguille semi-permanent (ASP) needles used was approximately $1.52 per patient and therefore, both the treatment use and research of needles is not costly. Currently, the list price for a box of 80 sterilized gold ASP needles is $55, which makes the price for a 4-needle treatment (2 per ear, in accordance with the study) about $2.75. Acupuncture, therefore, is still not costly to use or research, especially when compared to medication. However, the cost to certify physicians and advocate the use of CAM in base clinics with marketing or educational seminars for the soldiers may cost larger amounts of money. If CAM education is incorporated into training and pre-deployment procedure, it may cost
Battlefield Acupuncture

less. The overall cost of installing the acupuncture practice should be considered by experts, and analysis of whether or not the benefits outweigh the costs should also be evaluated.

The integration of acupuncture in terms of economic viability would be heavily influenced by forces of the DoD. The Army Pain Management Task Force determined in their 2006 report that integration of this technique into military healthcare will be best pursued if headed by a DoD-VHA [Veteran Health Affairs] partnership. As of publication, there lacked a “comprehensive pain management strategy that addresses current deficiencies” in the military healthcare system, and “As a result, pain management initiatives are fragmented, often driven by local champions and subject to retirements, changes of command, and annual budget priorities for their continued existence” (York et al. 9). The initiative has to last long enough with enough strength to be put into practice, which is variable depending on several uncontrollable factors. Therefore, education about acupuncture has to be widespread and continuing in order to convince on present and future leaders in military healthcare change that it is a necessary practice for maintaining the vitality of the American Armed Forces.

Military Medicine Culture

Firstly, a barrier to medical care at all from soldiers is a cultural phenomenon of pain tolerance or; that is, soldiers put off care for any medical injuries until it becomes absolutely unbearable to be without treatment for pain. York et al. identifies that this “transient nature” includes “both patients and providers, [making] continuity of care a challenge for military medicine” (9). Because American culture is so attuned to pharmacological relief of symptoms and reaching for OTC or prescribed medication, so too do American soldiers ask for medication when their pain becomes intolerable which, as aforementioned, can lead to addiction or other unfavorable side effects. The most attractive feature of a medication relief is physical
Battlefield Acupuncture

independence; while medications can be self-administered to adults with little reservation, self-administered acupoint therapy requires further research and cannot be used without clinical training.

Next, CAM in Western medicine is not fully accepted by patients as a treatment favored over pharmacological relief. The ability to successfully integrate medical acupuncture into the military medical system would rely on the soldiers’ willingness to accept the treatment. Disbelief in the use of acupuncture for pain relief will not allow the body to return the homeostasis upon injection, as a result of a reversed placebo effect sometimes referred to as a “nocebo” effect. These men and women are part of our nation’s military because they are strong willed, so if they do not fully believe in the analgesic effects of acupuncture, the treatment will not work.

Conclusion

Within the past ten years, studies by Niemtzow et al. have shown that acupuncture is an effective method of pain relief for members of the Armed Forces. Because pain is a bio-psycho-social process, the treatment of pain must fit this model, and acupuncture fits this treatment description as a timely and targeted process with little to no risk of side effects. Acupuncture would also work to reduce instance of medication addiction as a side effect of pharmacological pain management by standard practice in the military. The costs and implications of acupuncture as a part of CAM must be investigated before bringing it onto the battlefield. However, the general and population-specific evidence both prove that battlefield acupuncture as a treatment would be effective in its strong defense against pain and would keep America’s soldiers well enough to continue defending our country.
Battlefield Acupuncture

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