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BEHAVIORAL HEALTH: INCREASING RESILIENCY AND ENDURANCE

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Perspective

Commander's Introduction

MG Steve Jones

The Human Dimension of Combat

Soldiering during the past 13 years of war has been tough, as tough as during any other time in our history. Soldiers endured deployments that were too frequent and too long, and their time at home was too short. While at home, the pace was often so fast that they looked forward to the next deployment as a break. As a result, Soldiers never fully mentally reset or reintegrated into their families.[1]

Whether Soldiers see combat or not, every day on a deployment is "Groundhog Day." The monotony, long hours, and lack of time off take their toll. For some, boredom is interspersed with brief periods of high emotion and excitement.[2] The loss of a buddy can be particularly traumatic because it strips away the Soldier's feeling of invincibility. Continuous combat causes physical as well as psychological stress including sleep deprivation and both physical and mental fatigue. Many Soldiers live on energy drinks, some recover from operations by playing video games for hours into the night, others use alcohol and drugs.

Redeployment brings new challenges. The unremitting pace upon return coupled with reintegration issues cause additional stress. Soldiers return to a life that lacks the excitement and meaning they experienced in combat. They relinquish positions of authority—such as serving as mayor of a town—and in fact some of our Reserve Component Soldiers may find they have even lost their job. These issues occur in the face of normal post combat reactions which can lead to anger, violent behavior, and self-medication.

Genetic factors may increase the likelihood of developing PTSD in some individuals.[3] A shared genetic diathesis also leads to the association of PTSD and other behavioral health disorders. Genetic factors may also increase the exposure to trauma. Most of our Soldiers enlisted after September 11, 2001, and they joined our Army to fight. Some may have the high risk taking, high sensation seeking personality type known as the Type "T" personality.

Environmental factors also play a role in the development of high risk Soldiers.[4] Adverse childhood experiences increase the risk for PTSD. A dysfunctional home and poor upbringing may produce a recruit without a strong value system and with poor life decision-making skills. They may produce a recruit with poor self-control, one prone to impulsive behavior who now faces high risk operational and personal environments. Deployments provide an environment where taking life threatening risks is an everyday occurrence. Every time Soldiers leave the wire, they face the threat of death from an IED or an ambush. Their risk taking is rewarded, a Soldier who attacks an enemy position across open terrain, or the combat medic who treats a casualty while under fire are recognized for their courage. With frequent exposure they adapt. Their sense of danger erodes and they no longer worry about the risk. They lose their natural inhibition towards engaging in high risk behaviors, and they acquire the ability to commit violence on themselves and others

One of the classic studies on human behavior in combat is *The Anatomy of Courage*. It was written by Lord Moran, Winston Churchill's physician, based on his experience as medical officer of the First Battalion of the Royal Fusiliers in the First World War. He noted that courage is will power, it's like money in the bank and no one has an unlimited supply. You can make deposits, but are always spending, and when your courage is used up, you're finished.[5]

The most effective way to destroy psychological strength is through poor leadership. There is an unwritten moral contract between leaders and their Soldiers. Leaders are expected to take care of their Soldiers, treat them fairly, and share their hardships. In return, Soldiers follow orders—even though it may mean their death.[6] When leaders break that contract and fail to care for their Soldiers, when they mistreat them or cause unnecessary casualties, then they will find it impossible to maintain morale, respect, or discipline.

Lt-Col Sir John Baynes, a British military historian, studied how the British infantry in the First World War was able to retain its morale in the face of the terrible slaughter. He noted the value of training, particularly that which instilled esprit de corps. He listed 5 factors

important in maintaining high morale: regimental loyalty, the pride in belonging to a good battalion, high quality leaders who are trusted by their Soldiers, strong discipline, the sense of duty, and sound administration (providing adequate rations and ammunition).[7]

These studies show that psychological strength can be built and sustained. Establishing a good command climate with firm, fair, and consistent enforcement of discipline is the foundation for developing morale. Training instills Army Values, the Warrior Ethos, discipline, and self-control. It builds emotional as well as physical fitness. Good health, rest, and nutrition, and a strong support network also help sustain a Soldiers' strength.

The Army has implemented several primary prevention programs to build and maintain the resilience of Soldiers and Families as part of the Ready and Resilient Campaign. Comprehensive Soldier and Family Fitness develops an individual's ability to face and cope with adversity, adapt to change, recover, learn, and grow from setbacks. The Performance Triad promotes healthy behaviors including adequate physical activity, nutrition, and sleep. The behaviors improve physical and cognitive performance, resilience, reduce injuries and illness, and speed recovery. The Center for the Army Profession and Ethic promotes the Army Profession, Army Ethic, and Character Development.

The Army Medical Department plays an important role in building fitness, resilience and strength, in advising commanders, and serving as a safety net for Soldiers and Families. However, the ultimate responsibility remains with the unit commander, as noted in Change 1 to *Medical Field Manual 8-10, Medical Service of Field Units*, dated June 28, 1946: "Since the majority of the factors which determine mental health of troops fall within province of command, the main job of preventive neuropsychiatry must be done by commanding officers of the line."[8]

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Developing Effective Leadership Competencies in Military Social Workers

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Abstract

Military social workers are facing transformative times in that demand for military social work has increased and become more complex, challenging, and diverse due to the last 13 years of combat experiences. Developing military social work leaders must be deliberate, continuous, and progressive in order to impact and improve organizational performance in the healthcare delivery system. The transformational leadership model has been proven to be effective in both the military and social service organizations. The strength of this leadership model coincides well with the values of the social work profession. Incorporating leadership development in a clinical Master of Social Work program has the potential to improve service provision and offer strategies for military social workers to effectively manage the ongoing challenges in the field of social work.

Over the last decade, military social work became more complex, challenging, and diverse due to ever-evolving changes in military operations, budget constraints due to sequestration, and anticipated reductions in force structure. Furthermore, the consolidation of behavioral healthcare teams combined with ongoing media coverage of the psychosocial effects of wartime deployments have further intensified expectations from stakeholders. Demand for behavioral health services has steadily risen from operational and combat support brigade leaders, active-duty service members, and their families, all of whom reasonably expect clinical providers to understand the deployment and home front challenges imposed on them by an extended period of continuous conflict. To further compound matters, rising healthcare costs have necessitated constant review, analysis, and revisions to healthcare business practices. Relatedly, there is a persistent need to synchronize and standardize Army behavioral healthcare services which has led to the creation of multidisciplinary behavioral health departments and the integration of behavioral healthcare in primary care settings. Therefore, military social workers can expect to be called upon to perform in a variety of positions including clinical, staff, command, education, and training assignments. For these reasons, rigorous clinical education augmented with training in leadership models applicable to the human domain is increasingly important for military social workers. While many effective leadership models coincide well with the social work profession, transformational leadership emphasizes ways to manage more complex environments, improve performance, and influence organizational culture in a manner consistent with core social work values.

The Army-Fayetteville State University (FSU) Master of Social Work (MSW) Program educates future military social workers for the Army, Navy, and the Army National Guard. The program uniquely incorporates coursework in leadership development into a clinically-focused social work curriculum. Blending leadership skills with graduate level clinical education and training has the potential to increase organizational performance while enhancing the quality of care delivered to our military members and families. This article describes the current transformative times in military behavioral healthcare delivery and the challenges social work officers confront as members of the behavioral healthcare team. An evidence-based leadership model, and its connection to social work values, is presented as a best-practice approach to leading the behavioral health transformation. Implications for preparing military social work graduate students to meet the challenges of a demanding future are addressed.

Today's Behavioral Healthcare Environment

Today's military behavioral healthcare environment is undergoing a transformation that began with the attacks on 9/11/2001 and accelerated with the lengthy operations in Iraq and Afghanistan. There have been unpredictable and intense levels of urban combat and multiple, extended tours of duty which have resulted in behavioral health consequences[1-3] and increased utilization rates of behavioral healthcare.[1,2] Furthermore, research has shown that deployment stressors and combat exposure have inflicted significant health problems,[4,5] challenges in family and close relationships,[6] and can potentially impact a family member's ability to become a caregiver.[7,8]

Moreover, 13 years of combat deployments will most likely produce long-term consequences for those individuals who have served in the warzone. The National Vietnam Veterans Readjustment Study (NVVRS) demonstrated that combat exposure leads to problems in family functioning years after returning from the

combat zone.[9] Additionally, veterans with higher levels of war-related trauma and posttraumatic symptomatology exhibited more difficulties in family functioning and greater domestic violence than those without trauma.[9] Reanalysis of NVVRS data revealed that, in addition to PTSD, alcoholism, depression, and anxiety were prevalent maladies in both male and female Vietnam veterans.[9] Further research indicates that veterans exposed to high levels of warzone activity are significantly more likely to develop problems in psychosocial functioning than those with low exposure.[10] Further, those with PTSD are more likely to report marital, parental, and other family adjustment problems, including domestic violence.[11] In addition to psychosocial challenges, other potential long-term complications include physical difficulties and an increased risk for externally-caused mortality.[12-14] Evidence suggests that the association of wartime service with various physical and behavioral health problems portends that the demand for military behavioral health services will remain high for the foreseeable future.

As the military begins to transition from its combat mission in Afghanistan, the focus will shift to resetting the force while simultaneously experiencing troop reductions and resource constraints.[15] Anticipating these challenges, the Army Medical Command prepared "Army Medicine Strategy–The Road Ahead" based on 3 strategic imperatives: create capacity, enhance diplomacy, and improve stamina.[16] To this end, "Behavioral Health Service Line Policy, Consolidated Army Behavioral Health" was published to establish a seamless system of behavioral healthcare designed to address the residual effects of the war within a resource constrained environment.[17] The policy mandates a complete transformation from a traditional stovepipe* model of care to a proactive, integrated, metrics-driven and patient-centered behavioral health system. This more efficient structure unites psychiatry, psychology, and social work into a consolidated department of behavioral health within the medical treatment facility. Individuals qualified to lead a diverse behavioral healthcare delivery system will necessarily possess superior clinical expertise and the ability to efficiently manage limited resources while executing complex programs.[17] Leadership that maximizes performance improvement, manages precious resources and mitigates the stress experienced by the behavioral health team is perhaps the critical factor in successfully transforming the behavioral healthcare system.

Leading in a Transforming Environment

Successfully navigating through a transformative environment requires leadership that can influence organizations to successfully adapt to the new practice milieu. In this setting, effective leadership combines expert clinical knowledge, management abilities, and a positive attitude to coordinate the work of diverse, specialized professionals to produce patient-centered service delivery. Ideally, these skills inspire trust in leadership and excellence in practice. As defined by Northouse,[18] leadership is a process of influencing a group of individuals to achieve a common goal that is guided by the leader's core values. Without the ability to influence, leadership does not exist. Leadership is not a trait or list of characteristics that reside in the leader; it is a transactional event that occurs between the leader and their team.[18] Leadership in the current operational environment requires one to motivate a multidisciplinary team to provide quality healthcare services.

Transformational leadership emphasizes the interactive, relational aspects between the leader and the organization by inspiring the team to look beyond self-interest and work collectively for a greater purpose. Leaders and their team are transformed through a commitment to a higher set of moral values and a common goal.[19] The transformational leadership model has 4 components: idealized influence, inspirational motivation, individualized consideration, and intellectual stimulation.[20] Idealized influence involves the leader modeling appropriate behavior. Inspirational motivation entails the leaders' abilities to motivate not simply through rewards and punishment, but largely by effective performance.[21] Transformational leaders motivate their teams by encouraging them to transcend self-interests by making them more aware of desired outcomes and how their efforts impact the organization's goals. Individualized consideration demonstrates genuine need and concern for team members; relationships energize action and build cohesion. Intellectual stimulation manifests through challenging individuals to rise to higher levels of performance.[20] Leaders encourage others to think critically to introduce innovation and new ideas for improving outdated and unproductive practices. Transformational leaders activate higher order needs of the team by inspiring them to work toward common goals and encouraging individuals to reach their full potential while working within a value-based framework.[22-24]

Transformational Leadership and Military Social Work

Social Work Officers have played a leading role in delivering behavioral health services during the past 13 years of war, and have the potential to be transformative figures in shaping the future of military behavioral

*A stovepipe model refers to an organization that has a structure which largely or entirely restricts the flow of information within the organization to strictly up and down lines of control, inhibiting or preventing cross-organizational communication.

health. Much of their potential is rooted in the goodness-of-fit between transformation leadership and social work practice. Clearly, the social work profession's values of service, integrity, importance of human relationships, and dignity and worth of a person closely align with transformational leadership thinking. Similar to a transformational leader using inspirational motivation through a shared vision and goals, social workers are attracted to the profession with a passion to improve the lives of others. When in leadership positions, military social workers can use this passion and commitment to others to formulate a vision and arouse others to achieve these shared objectives. Military social work leaders derive professional, as well as personal, fulfillment from serving the organization rather than self-interests. As the transformational leadership model appreciates the importance of relationships, so to do social work professionals. In social work, the primary mission is to enhance well-being and helping to meet the basic human needs of all people.[25] As described by Pumphrey,[26] social workers believe that every person should be regarded as having infinite worth, and positive change can be accelerated by purposeful assistance and active encouragement from others. Relationships are the vehicle for positive change and growth. These core principles become instrumental in developing an organizational vision and are fundamental motivators for social workers in practice. Conveying this principle through "leading by example" provides others with a motivation, or purpose, greater than themselves. Transformational leadership focuses on the leader-team relationship in forming a foundation to work toward the greater good; the underlying belief is that all leadership, at its core, is relational.

Others have described the merits of transformational leadership and have provided empirical evidence to support incorporating it into human service organizations. Fisher encouraged social workers to learn more about motivation and leadership and identified transformational leadership as a framework to consider adopting in practice.[21] The values inherent in leading from a transformational perspective have made it a common theme among social work leaders with some supervisors intuitively applying its principles.[27,28] Research has demonstrated that factors associated with transformational leadership are significantly correlated with social work leader outcomes of effectiveness, satisfaction, and extra effort.[29,30] Qualitative data have shown that transformational leadership could be a contributing factor in understanding the potential impact that social workers may have in influencing positive change in the complex child welfare system.[31] This leadership style satisfies the need to identify and define core attributes of effective leadership in a simple, clear, relevant, and consensually acceptable manner.[32]

Developing Leaders in the Army-FSU MSW Program

In the Army, leadership development is a deliberate, continuous, sequential, and progressive process that occurs within a value-based framework.[33] In addition to providing direct clinical care, social work officers are expected to assume leadership roles with increasing levels of responsibility as they gain active-duty experience. Therefore, to develop military social workers prepared to succeed in today's complex and dynamic healthcare environment, it is important to augment traditional professional military education with specialized leadership training early in their careers.

The Army-FSU MSW program, based at the Army Medical Department Center and School, was established in 2007 to help fill a critical shortage of behavioral health providers with active-duty social workers. The program's curriculum was designed to produce clinical social workers with a concentration in mental health and substance use treatment. As the program evolved, it became clear that the clinical education and training should be supplemented with an additional emphasis on leadership. Therefore, leadership development strategies were infused throughout the curriculum and augmented with a distinct course on management and leadership. The course highlights unique aspects of managing behavioral health operations in a military environment that includes legal/ethical considerations, constructing a business case analysis, and exercising quality management with an emphasis on the credentialing process. Students learn principles of effective management styles that develop skills in team building, encourage participatory decision-making, and promote organizational productivity consistent with transformational leadership theory. As a way of establishing vertical integration between practice competencies, students are tasked to develop a comprehensive strategic plan to guide a community-based social service program they designed in a previous course. The assignment requires students to apply critical thinking to understand the importance of stating a clear vision, defining an organization's mission, and creating quantifiable objectives from a leadership perspective. Particularly relevant to social work leadership, an emphasis is placed on the importance of developing positive relationships with both supervisors and subordinates through effective communication that empowers others to make good decisions. The course's capstone assignment requires students to deliver a presentation that articulates their leadership philosophy and management style, and establishes clear expectations for team members.

In order to infuse leadership development throughout the curriculum, faculty members were purposely and

carefully selected. Currently, the 8 faculty members have over 160 years of clinical and leadership experience as active-duty social work officers. Their experience enables them to incorporate leadership principles and competencies in all foundation and concentration courses. Additionally, throughout the 14 months of education and training, senior military social workers are invited to lecture on proven leadership strategies that have been instrumental in improving organizational performance, policy development, and operational planning. To augment classroom leadership instruction during the Social Work Internship Program, students must complete 10 web-based modules from the Joint Medical Skills Institute which enhance their classroom instruction. Topics include labor relations, human resources, conflict management, coaching, counseling, and mentoring. Evidence thus far, based on the performance of the program's 131 graduates, suggests that the approach used by the Army's MSW program has been effective. As of March 2014, 96% have passed the Licensed Master of Social Work examination on their first attempt, surpassing the 82% national rate.[34] Perhaps more importantly, of the 38 who have further completed their 2-year Social Work Internship and have become independent providers, almost all have deployed with combat brigades to Afghanistan. Furthermore, they serve in vital positions in operational units located overseas as leaders of family advocacy teams within the medical treatment facilities and in command of a combat stress control detachment.

Observations and Conclusions

Leadership is an essential military skill. Therefore, skillful leadership can shape the well-being of military healthcare organizations and influence the quality of care provided. As the operating environment becomes increasingly challenging, positive leadership may be the decisive factor in determining future success. This is certainly true in today's military behavioral health sector. The transforming operational context, declining resources, evolving business practices, and increased demand for services have underscored the need for effective leadership strategies. For military social work to contribute to accomplishing our shared mission, the following observations are offered:

- Social Work Officers must develop evidence-based clinical competencies as well as leadership skills that are effective across a diverse range of operational and healthcare settings.
- Military social workers operate in a distinctive environment with unique demands and challenges. Developing professionals who can flourish under these conditions is best accomplished by training them in a military-centric training program early in their careers.
- Leadership skills can be learned through education and sharpened with experience. Integrating leadership training with social work core values in the Army's MSW curriculum prepares future leaders to solve tomorrow's problems.
- As social work officers demonstrate abilities to succeed in positions with increasing levels of responsibility, they should be assigned to leadership positions commensurate with their rank.

Social work officers understand the military culture and are prepared to provide consultation to unit commanders, advocate for service members, and lead behavioral healthcare teams. The strengthening of leadership talents in military social workers early in their career development has the potential to enhance behavioral health outcomes. While further program evaluation is necessary to fully understand the impact of incorporating leadership education into a clinical MSW curriculum, we believe that to effectively prepare officers for military social work practice, graduate education must include specialized leadership training.

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Evolution of the Combat and Operational Stress Control Detachment

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ABSTRACT

Medical units designed to provide combat and operational stress control services have evolved since World War II into the current Combat and Operational Stress Control (COSC) detachments. Yet the structure of these COSC detachments differ greatly between what is authorized in the table of organization and equipment (TO&E) and what is doctrinally described in the current field manual guiding combat and operational stress control operations. We therefore explore the evolution of the COSC detachment, compare the organizations found in current doctrine with that currently authorized on the TO&E, and conclude with a proposed structure of a modern COSC detachment that is functionally modular with more clear chains of command.

The structure of units providing combat stress control has continued to develop through lessons learned from various wars and conflicts since the Revolutionary War into the US Army's current Combat and Operational Stress Control (COSC) detachments. The Army learned in World War I that treating Soldiers far forward under the principles of brevity, proximity, and immediacy improved a Soldier's ability to return to duty while decreasing the likelihood of developing worsening psychiatric conditions.[1] Army behavioral health was then further influenced by lessons learned from Russia, France, and England, who also practiced providing behavioral health interventions far forward on the battlefield and experienced similar positive results.[2] Therefore, by the onset of World War II, psychiatrists had been placed in most Army divisions, and the first trials of restoration care for Soldiers were implemented in "Training and Rehabilitation [T&R] Centers." Soldiers sent to these T&R Centers practiced battle drills daily and maintained an exercise routine while at the site. Along with the value of restoration, World War II demonstrated that allowing Soldiers to remain a part of their unit positively affected unit cohesion and prevented further deterioration of psychiatric symptoms.[2] As such, the first battlefield psychiatric care units, called "KOs," were developed. These were teams of behavioral health providers who could deploy and maneuver far forward on the battlefield to provide consultive support. The first KO team deployed to Vietnam in 1965 was made up of 23 behavioral health personnel: a psychiatrist, a neurologist, a social worker, a psychologist, and a psychiatric nurse; and enlisted psychology, social work, and neuropsychiatric specialists.[2] Following the Vietnam War, the KO teams were renamed OM teams in the new table of organization and equipment (TO&E), and differed by the OM's increased ability to maneuver on the battlefield. The personnel required for the OM teams grew with the addition of the commander and executive officer, and could divide into 3 mobile consultation teams and one treatment section. This personnel structure is very similar to the personnel structure of the current COSC detachment.[2]

In 1989, the newly proposed TO&E renamed the OM to "Combat Stress Control" (CSC) units and detachments. The TO&E organized the new CSC's 23 personnel into a Prevention Section and a Restoration Section. The Prevention Section was designed to support troops far forward and the Restoration Section was designed to provide 1 to 3 days of restoration while also having the capability of sending behavioral health teams far forward to support prevention teams if necessary. This new TO&E was approved by the Department of the Army, however, it was not supported with resources until after the Persian Gulf War (1991). Consequently, at the onset of the Persian Gulf War, the CSC units had not been fielded with personnel and equipment, thus requiring the rapid deployment of personnel from multiple installations who had not trained as a unit prior to the deployment.[3] Lessons learned from the Persian Gulf War validated and supported the rapid fielding of personnel and equipment for the CSC detachments and units. On December 16, 1992, the 528th CSC was the first CSC unit activated.[3] Since then, many lessons have been learned during support of operations in Somalia, Haiti, Guantanamo, Bosnia, Iraq, and Afghanistan.

Today's combat stress control services operate under the doctrine established in *Field Manual (FM) 4-02.51*,[4] which was published in July 2006. While *FM 4-02.51* guides the COSC detachment doctrinally, the TO&E establishes the COSC personnel and equipment authorizations. The current COSC detachment TO&E was

Table 1. Current Combat and Operational Stress Control Detachment Organization and Structure as Established in *FM 4-02.51*.[4]

Headquarters Section		Fitness Section		Preventive Section	
AOC or MOS	Position	AOC or MOS	Position	AOC or MOS	Position
05A	Commander	60W	Psychiatrist	73B	Psychologist
70B	Field Medical Assistant	65A	Occupational Therapist	73A	Social Worker
68X40	Detachment Sergeant	66R	Psychiatric Nurse Practitioner	68X20	Behavioral Health NCO
92Y20	Supply Sergeant	68L20	Occupational Therapy NCO	68X10	Behavioral Health Specialist
42A10	Human Resource Specialist	68L20	Occupational Therapy NCO	73B	Psychologist
91B10	Wheeled Vehicle Mechanic	68X20	Behavioral Health NCO	73A	Social Worker
92G10	Cook	68X20	Behavioral Health NCO	68X20	Behavioral Health NCO
		68X10	Behavioral Health Specialist	68X10	Behavioral Health Specialist
		68X10	Behavioral Health Specialist	73B	Psychologist
		68X10	Behavioral Health Specialist	73A	Social Worker
		60W	Psychiatrist	68X20	Behavioral Health NCO
		65A	Occupational Therapist	68X10	Behavioral Health Specialist
		66R	Psychiatric Nurse Practitioner	73B	Psychologist
		68L20	Occupational Therapy NCO	73A	Social Worker
		68L20	Occupational Therapy NCO	68X20	Behavioral Health NCO
		68X20	Behavioral Health NCO	68X10	Behavioral Health Specialist
		68X20	Behavioral Health NCO		
		68X10	Behavioral Health Specialist		
		68X10	Behavioral Health Specialist		
		68X10	Behavioral Health Specialist		

AOC indicates area of concentration (officers).
MOS indicates military occupational specialty (enlisted).

approved in 2009 and has since undergone minor modifications. Interestingly, while the mission for the COSC detachment on the TO&E and *FM 4-02.51* are similar, there are significant differences in the structure and manning of the detachment between the 2 documents. This article explores the differences between the "doctrinal" structure of the COSC detachment as found in *FM 4-02.51* and the "TO&E" structure as found in the Fiscal Year 2015 (FY15) TO&E before presenting a proposed COSC structure that we believe better conforms to current operational needs.

Conflicting Structures of the COSC Detachment

Current doctrine as established in *FM 4-02.51*[4] splits the COSC detachment into 3 sections as shown in Table 1. The Headquarters Section consists of the primary command and control elements and limited support personnel. The Fitness Section is comprised of 2 teams of 10 personnel each: a psychiatrist, an occupational therapist, 2 occupational therapy noncommissioned officers (NCOs), 2 behavioral health specialist NCOs, and 3 junior behavioral health specialists. Finally, the Preventive Section is comprised of 4 teams of 4 personnel each: a psychologist, a social worker, a behavioral health specialist NCO, and a junior behavioral health specialist. The Fitness Section is designed with the capability of split-based advanced behavioral health treatment and restoration services primarily in an area support role, including operation of a psychiatric ward when necessary.[4] By contrast, the Preventive Section teams are designed to support brigade-sized units with more limited, though more mobile, behavioral health treatment and unit needs assessment services.

In contrast, the current FY15 TO&E* for the COSC detachment has a much different structure than that found in current doctrine. Table 2 presents the structures of the Main Support Element and the Forward Support

*Restricted access document

Table 2. Current Combat and Operational Stress Control Detachment Organization and Structure as Published in FY15 TO&E.

Headquarters Section		Main Support Element		Forward Support Element	
AOC or MOS	Position	AOC or MOS	Position	AOC or MOS	Position
05A	Commander	60W	*Psychiatrist	60W	*Psychiatrist
68X40	Detachment Sergeant	68L20	Occupational Therapy NCO	68X20	Team Chief
70B	Executive Officer	68X10	Behavioral Health Specialist	68X10	Behavioral Health Specialist
92Y20	Supply NCO	73B	*Psychologist	73B	Psychologist
91B10	Vehicle Mechanic	68X20	Team Chief	68X30	Behavioral Health NCO
91D10	Generator Mechanic	68X10	Behavioral Health Specialist	68X10	Behavioral Health Specialist
56A	Chaplain	73A	*Social Worker	73A	Social Worker
56M10	Chaplain Assistant	68L10	Occupational Therapy Specialist	68X20	Team Chief
		68X10	Behavioral Health Specialist	68X10	Behavioral Health Specialist
		67D	*Behavioral Science Officer	67D	*Behavioral Science Officer
		68X20	Team Chief	68X10	Behavioral Health Specialist
		68X10	Behavioral Health Specialist	68L10	Occupational Therapy Specialist
		66R	*Psychiatric Nurse Practitioner	66R	*Psychiatric Nurse Practitioner
		68X20	Team Chief	68L20	Occupational Therapy NCO
		68X10	Behavioral Health Specialist	68X10	Behavioral Health Specialist
		65A	Occupational Therapist	65A	Occupational Therapist
		68X30	Behavioral Health NCO	68X20	Team Chief
		68X10	Behavioral Health Specialist	68X10	Behavioral Health Specialist

*Position not staffed in garrison. Staffed with predesignated active duty health professionals by the AMEDD Professional Filler System for deployments.
AOC indicates area of concentration (officers).
MOS indicates military occupational specialty (enlisted).

Element, each of which have a nearly identical structure of 6 teams of 3 personnel each: a provider, an NCO, and a junior specialist.[5] Compared to the doctrinal structure in Table 1, the TO&E structure adds a chaplain, chaplain assistant, and a generator mechanic. Missing, however, are the human resource specialist and cook from the Headquarters Detachment. The TO&E structure therefore allows easier split-based operations between the 2 primary support elements, while maintaining simplicity by keeping nearly identical structures. In essence, each of these support elements acts as a "mini-COSC" detachment in that each is capable of both restoration and treatment missions in the split-based environment, compared to the doctrinal structure which functionally aligned restoration services into one section and treatment services into another. Moreover, the addition of a unit ministry team (chaplain and chaplain assistant) in the TO&E structure provides an additional resource for the COSC mission.

Proposed Structure of the COSC Detachment

In general, the authors' experience in recent conflicts in Afghanistan and Iraq support a COSC structure that includes a single primary restoration center capable of split-based operations only in extreme circumstances in a particularly large area of operations, as well as several modular treatment teams consisting of 1 to 2 providers supported by an NCO and a junior enlisted behavioral health specialist. Recent history indicates that 2 restoration centers are rarely necessary at the expense of more forward treatment teams. In those situations where the area of operations is large enough to support 2 restoration centers, it is often more reasonable to deploy a second COSC detachment. This was most recently seen in Operation Enduring Freedom during which the reduction from 2 Army COSC detachments to one (supported by elements from the US Air Force) only occurred after the closing of restoration services at Kandahar Airfield in 2013 after which all restoration services were consolidated at Bagram Airfield.

As such, the optimal structure of the COSC detachment would seem to be more akin to that listed within current doctrine with a functional organization consisting of a restoration-focused section and a separate treatment-focused section, rather than splitting these functional areas into 2 identical combined sections as per the current TO&E. Nonetheless, the addition of a unit ministry team to the TO&E has proven beneficial, and the addition of a generator mechanic is of obvious use in an austere environment.[5] The loss of a human resources technician in the move from doctrine to the current TO&E has resulted in the loss of orderly room functionality within the headquarters section, and there is also no one specifically identified in either the doctrinal or TO&E structure to handle training room functions in garrison. Finally, while a cook is likely not an important requirement when comparing the personnel in Tables 1 and 2, the addition of a communications specialist (MOS* 25U10) would be immensely helpful given the large amount of communication equipment required for the detachments including radios, Blue Force Trackers, and computers.

While these issues pertain primarily to the US Army rather than joint units and doctrine, the Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTmLPF-P) analysis process can nonetheless be used given that new materiel solution development is unnecessary, as delineated by the Joint Capabilities Integration and Development System (JCIDS) Manual.[6] To summarize the above discussion within the DOTmLPF-P context:

> Current doctrine is decidedly out of date given subsequent changes to the TO&E, while this TO&E organization of the COSC detachment is ill-suited for the current and foreseeable missions described above.
>
> Although training, materiel, and leadership and education issues are beyond the scope of this paper, it is evident that some personnel gaps do exist in the areas of communications and patient administration.
>
> Finally, there are no facilities issues identified herein, nor would any policy issues predictably affect the other 7 areas to any significant degree.

The Figure presents a proposed structure of a modern COSC detachment which we believe better matches current operational needs while minimally changing current manning requirements as documented in the FY15 TO&E. The Headquarters Platoon includes a communications specialist to operate and maintain the assigned communication equipment, as well as a patient administration specialist to track patients while deployed and to run the orderly room while in garrison. A behavioral health NCO is also moved to the Headquarters Platoon to maintain the training room activities. The Restoration Platoon in turn incorporates all the occupational therapy, treatment, and unit ministry personnel necessary to run a restoration center. Finally, the Treatment Platoon consolidates all other providers and behavioral health specialists into 4 treatment teams, each consisting of 1 to 2 providers, a behavioral health NCO, and a junior behavioral health specialist.

To better delineate a clear chain of command, an occupational therapist is identified as the Restoration Officer-in-Charge (OIC) while the authorized social worker is identified as the Clinical Operations OIC, both acting as platoon leaders in their respective platoons. The E-6 psychiatric technicians (68X30) are similarly identified as platoon sergeants in their respective platoons. Moreover, the proposed COSC structure in the Figure incorporates the functional modularity of the doctrinal structure compared to the TO&E structure, and can accordingly deploy sections of the detachment based on operational needs with ease. For example, the authors' experience with the FY14/15 Defense CBRN† Response Force mission for defense support of civil authorities missions within Army Northern Command has shown that while a restoration center may not be necessary in the relatively short duration deployments required for this mission, individual teams from the Treatment Platoon could easily be deployed depending on the size of the mission, while maintaining established chains of command.

Conclusion

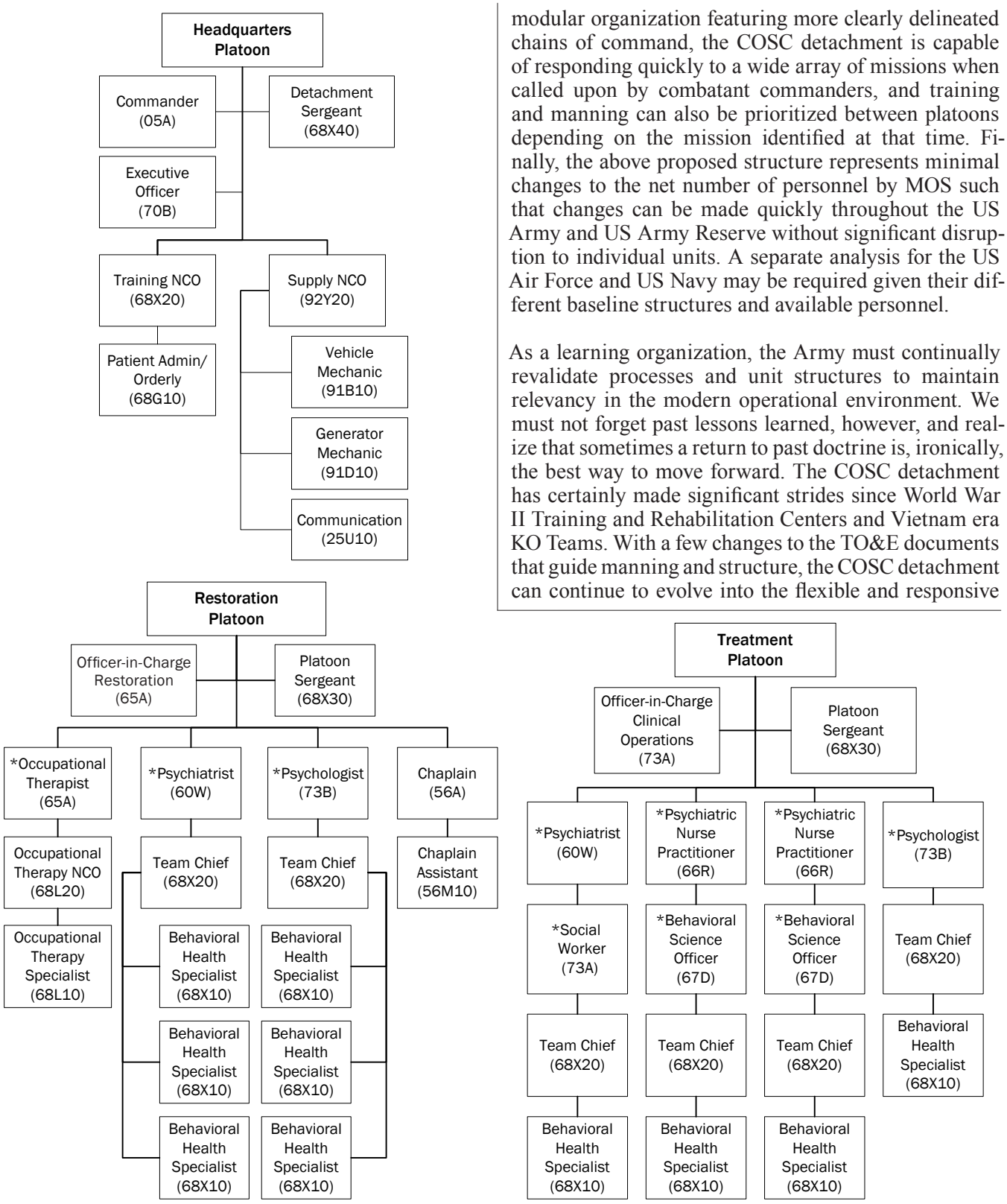
In a recent *AMEDD Journal* article, MG Steve Jones cited the need to "redesign medical units to make them more expeditionary and capable…. We will be flexible and responsive when supporting combatant commanders. They tell us the capabilities they need and we provide them quickly."[7] To that end, we must continually examine the structure of medical units such as the COSC detachment to validate their conformation to these guiding principles. In the case of providing combat and operational stress control in a wide range of missions—from defense support to civil authorities, to expeditionary care in an unimproved battlefield, to support of stability operations as recently seen in Operation Enduring Freedom and Operation Iraqi Freedom—this "flexible and responsive" structure is likely best achieved through a return to doctrinal principles with the addition of a few added capabilities as described above and illustrated in the Figure. With this proposed functional

*Military occupational specialty

†Chemical, biological, radiological, nuclear

modular organization featuring more clearly delineated chains of command, the COSC detachment is capable of responding quickly to a wide array of missions when called upon by combatant commanders, and training and manning can also be prioritized between platoons depending on the mission identified at that time. Finally, the above proposed structure represents minimal changes to the net number of personnel by MOS such that changes can be made quickly throughout the US Army and US Army Reserve without significant disruption to individual units. A separate analysis for the US Air Force and US Navy may be required given their different baseline structures and available personnel.

As a learning organization, the Army must continually revalidate processes and unit structures to maintain relevancy in the modern operational environment. We must not forget past lessons learned, however, and realize that sometimes a return to past doctrine is, ironically, the best way to move forward. The COSC detachment has certainly made significant strides since World War II Training and Rehabilitation Centers and Vietnam era KO Teams. With a few changes to the TO&E documents that guide manning and structure, the COSC detachment can continue to evolve into the flexible and responsive



Proposed structure for the Combat and Operational Stress Control Detachment. Designators in parentheses are either area of concentration (officers) or military occupational specialty (enlisted).

*Position not staffed in garrison. Staffed with predesignated active duty health professionals by the AMEDD Professional Filler System for deployments.

medical unit necessary for the wide variety of combat and operational stress control missions expected in the foreseeable future.

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The Psychosocial Challenges of Conducting Counterinsurgency Operations

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Abstract

Counterinsurgency (COIN) operations have served as the fundamental component of the nation's military strategy. Without the established boundaries of conventional operations, switching between diplomatic and combative roles can expose Soldiers to unique stressors when conducting COIN operations. An exploratory study of descriptive data obtained from a retrospective records review of 140 service members deployed to Operation Enduring Freedom identified and described problems in psychosocial functioning. Behavioral health records for the first 7 months of the deployment and throughout the first year of redeployment were reviewed. The most common problems reported by Soldiers were operational stress characterized by anxiety, fear, irritability, frustration, and isolation. Additionally, most of the Soldiers engaged services for psychosocial challenges within the first year of returning from deployment. Establishing reliable access to behavioral healthcare has emerged as an essential component of total force protection in COIN deployments.

Over the past decade, much has been written about the psychosocial sequelae experienced by military personnel during an extended period of continuous conflict. Shortly after operations commenced, Hoge and colleagues provided a first look at Soldiers and Marines that had deployed to Iraq or Afghanistan and found that many met the screening criteria for major depression, generalized anxiety, or posttraumatic stress disorder (PTSD).[1] Afterwards, others linked contemporary combat deployments to alcohol misuse,[2,3] sleep disturbance,[4] aggression,[5] risk-taking behavior,[6] mild traumatic brain injury (mTBI) and its related psychological and physical difficulties,[7] as well as supported the earlier findings of Hoge et al associating PTSD and depression with wartime deployments.[8-12] In a descriptive study of behavioral healthcare use by Soldiers conducting counterinsurgency (COIN) operations the authors reported anxiety and adjustment disorders to be common reasons Soldiers sought behavioral health support.[13] Deployment experiences such as combat exposure and multiple combat tours have been identified as contributing factors for exhibiting post-traumatic stress symptoms after returning home.[14] Evidence suggests that some individuals may be more vulnerable to psychological distress due to the role they play on the battlefield. Healthcare providers and those serving in combat occupations have been found to be at a greater risk for being diagnosed with new-onset PTSD and depression after serving in a combat zone.[15] Others believed to be susceptible to postdeployment difficulties, such as those who had expressed suicidal ideation, displayed behavioral disturbances, or experienced strained partner relationships while deployed, have reportedly benefited from early intervention to mitigate the risk of difficulties developing during the postdeployment period.[16] Furthermore, those who engage in warzone experiences that violate deeply held moral and ethical beliefs are thought to be at-risk for adverse psychological outcomes.[17]

While a great deal has been learned about the personal struggles stemming from current wartime service, we have yet to fully explore contextual influences on the development of psychosocial disturbances. This is potentially an important distinction given the evolution of the military strategy, tactics, techniques, and procedures employed over the course of 2 lengthy overseas contingencies. The wars in Afghanistan and Iraq began as conventional operations. However, beginning with the surge in combat deployments to Operation Iraqi Freedom in 2007, COIN emerged as the nation's prevailing strategic paradigm. Implementing a COIN strategy in Iraq, at the time considered somewhat controversial,[18] is widely credited with establishing a more secure and stable environment prior to the 2011 withdrawal of US combat units. In 2010, in an attempt to leverage lessons learned from the successes gained in Iraq, COIN was formally adopted in Afghanistan, supported by a modest troop surge of its own. Historically, the fundamental objective of COIN is to sever the connection between insurgents and the populace by providing security and enhancing local living conditions.[19] Adjusting tactics to fit the new strategy involved changing the operational

culture of coalition forces, reallocating resources, and overcoming bureaucratic challenges.[20] In both theaters of operations, transitioning from conventional to irregular warfare created multiple challenges for the small unit leaders and Soldiers tasked with achieving COIN objectives. To succeed in a population-centric environment, military forces must understand local cultural dynamics and develop skills to operate in the human domain.[21] Described as armed social work,[22] COIN needs leaders that are not only tactically proficient, but who are also able to exercise keen social skills to meet the dual demands of being combat effective and culturally competent.[23] From a tactical perspective, this means small unit leaders need the mental flexibility to interact with local sheiks and influential elders one day, and maneuver Soldiers to clear buildings of suspected insurgents the next.[24] Furthermore, developing skills in "detective work" is useful for gathering evidence to build a case to justify detaining a suspected insurgent and, perhaps more importantly, to cultivate tactical sources, or confidential informants, who can be helpful in locating improvised explosive devices (IEDs) before they can be detonated.[25,26] Moreover, executing the core tenets of COIN theory, to establish trust, improve life in the communities, and create a sense of security for the local populace, requires conducting dismounted patrols, targeted searches, and, when necessary, engaging the enemy within the constraints of strict rules of engagement to limit collateral damage.[25] Achieving these seemingly contrasting tasks involves inherent risks as combining security patrols with engaging the local people necessitates putting "boots on the ground" and exposing Soldiers to enemy attack.[26] Soldiers operating in such a fluid environment, which at times can seem counterintuitive, must be resilient and adaptable to the prolonged psychological and moral demands exerted by the COIN environment.[27]

Clearly, if COIN is to remain a central component of the nation's military strategy, it is necessary that we further explore the threats to healthy psychosocial functioning encountered by service members. To that end, in this study we describe the psychosocial problems reported by service members both during and after their deployment to Afghanistan. Additionally, we address the challenges experienced by the Soldiers from the perspective of the complex nature of COIN missions. We conclude by offering observations to consider in supporting future COIN deployments.

Methodology

In this exploratory study we used a retrospective records review protocol to identify and describe the problems in psychosocial functioning reported by 140 service members during and after their deployment to Operation Enduring Freedom. We closely examined the electronic health records of 139 Soldiers and one airman who were assigned to, or supported, an active component brigade combat team (BCT) that operated from a forward operating base (FOB) located in the Logar Province of Eastern Afghanistan. The study includes all personnel who engaged the behavioral healthcare system during the first 7 months of a deployment in theater from September 2011 to July 2012. The individuals received behavioral health support from the BCT's combat/operational stress control team comprised of a social work officer and 2 enlisted behavioral health specialists, augmented by a US Air Force combat stress team consisting of one active-duty social worker and an enlisted behavioral health technician. The deployment was split between 2 Army social work officers with the first one deploying for 7 months. The behavioral health providers supported a large geographical area that included the FOB and 12 combat outposts (COPs). Therefore, in addition to establishing a behavioral health clinic collocated with the FOB's level II medical facility, the teams routinely conducted battlefield circulations, remaining at each COP for about 48 hours to maintain contact with Soldiers assigned to the outlying areas. Using a client roster provided by the BCT's initial social work officer (one of this study's authors), 2 postgraduate social work interns assigned to Tripler Army Medical Center (TAMC) reviewed the clinical records and provider notes available through the Armed Forces Health Longitudinal Technology Application (AHLTA) system of those who received behavioral healthcare. Information pertinent only to behavioral healthcare received during the first 7 months of the deployment and throughout the first year after returning home was recorded on a review form developed specifically for this study. Data collected included demographics, referral information, presenting problem, primary diagnosis, exposure to combat, number of deployments, intervention provided, and postdeployment behavioral health follow-up. No personally identifying information was recorded to ensure anonymity. A consolidated database was created and sent to the author working at the Army Medical Department Center and School, Fort Sam Houston, Texas, for further review and coding. All 140 records were included in the final analysis. Frequencies and means were tabulated using SAS version 9.2 (SAS Institute, Incorporated, Cary, North Carolina). The Institutional Review Board of TAMC granted approval for this study.

Results

Demographics

The clinical population consisted of 119 (85%) males and 21 (15%) females. The average age was 28 years

with a range of 19 to 49 years. The vast majority, 92 (66%), were relatively young, aged between 19 and 29, with only 13 (9%) individuals over 40 years of age. Most, 56 (40%), self-identified as Caucasian, followed by 17 (12%) African Americans, 6 (4%) Hispanics, 3 (2%) Asian Americans, and 2 (1%) Native Americans. Twenty-four (17%) identified themselves as "other." Race/ethnicity was unclear in 32 (23%) records, a considerable number. Almost half, 64 (46%), were married. Forty-two (30%) reported being single, never married whereas 13 (9%), were either separated or divorced. Marital status was missing in 21 (15%) records. Many, 58 (41%), worked in support specialties such as military police, motor transport operator, wheeled vehicle mechanic, unit supply, or logistical specialist, with a significant number, 48 (34%), serving in the combat arms. Fourteen medical personnel, including combat medics who directly supported the COPs, comprised 10% of the clinical sample. Twenty (14%) records did not include military specialty. The overwhelming majority, 135 (96%), were enlisted with 37 (26%) being in the junior grades (E1-E3). Most, 93 (66%), were junior noncommissioned officers (NCOs) (E4-E6) while 5 (4%), as E7s, were senior NCOs. Only 5 (4%) commissioned or warrant officers received behavioral health care. The majority, 91 (65%), were serving their first combat tour but many, 47 (34%), had previous deployment experience with 21 having deployed 3 or more times. Number of deployments could not be determined in 2 (1%) records.

Referral Information

Most, 88 (63%), who sought behavioral health support did so as self-referrals. Medical providers from battalion aid stations and the Level II troop medical clinic referred 25 (18%) Soldiers. Unit leadership accounted for 23 (16%) referrals whereas Chaplains sent a relatively small number, 4 (3%), for behavioral health assistance. Nearly half, 67 (48%), of those seen by behavioral health had been involved in combat either through direct contact from IEDs, rocket propelled grenades, and small arms fire or indirect attacks by rocket or mortar rounds.

Presenting Problem

Operational stress, characterized by anxiety, fear, irritability, frustration and feeling isolated, was the most commonly reported problem affecting 39 (28%) Soldiers. Some of these individuals described themselves simply as "being stressed." Twenty-three (16%) individuals sought behavioral healthcare for depression or anxiety. A modest number, 18 (13%), requested help for various sleep maladies. Direct involvement in, or witnessing a traumatic event, including several who saw combat casualties and one who witnessed an Afghan soldier shoot and kill an American contractor, produced an array of psychological reactions including anxiety, depression, nightmares, exhaustion, trouble concentrating, and intrusive images of the event that led 12 (9%) Soldiers to ask for help. Eighteen (13%) personnel reported marital problems that either developed or escalated during the deployment, creating multiple symptomatic responses including anger, sadness, decreased appetite, sleep difficulties, guilt, and a sense of hopelessness. Significantly, 14 (10%) Soldiers presented as a risk to themselves or others with all but one threatening suicide. Those expressing suicidal ideation variously reported being depressed, irritable, on edge, frustrated as well as experiencing shame and guilt. Freezing in combat, being under investigation, and negligently discharging a weapon were circumstances that contributed to some who contemplated suicide. It should be noted that one Soldier assigned to the BCT did commit suicide but had not engaged behavioral health services. Intense anger, primarily directed at perceived leadership deficiencies and inadequate working conditions, led 4 (34%) individuals to seek help. Three (2%) Soldiers needed support to cope with the grief of a fallen battle buddy. Substance abuse, in spite of strict prohibitions against alcohol and drug possession, resulted in 2 (1%) referrals for evaluation; one for alcohol intoxication, the other for inhalant abuse. The remaining 6 (4%) individuals engaged behavioral health services for various reasons; 2 were concerned about having an mTBI, 2 reported somatic complaints, and 2 had concerns regarding family problems back home. One (<1%) individual asked only to refill psychotropic medication for social phobia that had been prescribed prior to the deployment.

Primary Diagnoses

This deployment predated the release of the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM); thus, these diagnoses reflect DSM IV-TR diagnostic criteria. Taking into consideration the demanding environmental and operational conditions, behavioral health providers were careful not to "over-pathologize" the chief complaints of those seeking help. Thus, Other Conditions That May be a Focus of Clinical Attention, commonly referred to as V Codes, such as Occupational, Life Circumstance, and Relational Problems, were used whenever possible. Those who reported various indicators of distress but whose symptoms did not constitute a formal DSM diagnosis were described as experiencing a combat/operational stress reaction. Some received no mental health diagnosis at all. Nevertheless, adjustment disorders and PTSD were the most commonly identified mental health conditions. A notable number of Soldiers met the diagnostic criteria for a Depressive Disorder, Not Otherwise Specified (NOS), with major depression and dysthymia used infrequently. Those who presented

with significant anxiety were viewed as most likely manifesting an Anxiety Disorder, NOS. Although many Soldiers reported disturbed sleep, Primary Insomnia was diagnosed for those interested only in improving the quality of their sleep and reported no other concerns. Partner Relational Problems, another V Code, describes those who presented with symptoms related to failing relationships. One individual seemed to be exhibiting the hallmarks of an Intermittent Explosive Disorder. Another deployed with preexisting Social Phobia. The diagnostic assessment had yet to be completed for a Soldier who was initially seen but unfortunately was later killed in action. Two records did not have a recorded diagnosis. The distribution of primary diagnoses is presented in the Table.

Intervention and Disposition

Behavioral health intervention was predominantly accessed on the main FOB but was also offered at the various COPs during battlefield circulations. Although some individuals, 36 (26%), were seen only once, on average, Soldiers attended 4 sessions, including the initial intake. Most, 77 (55%), were seen between 2 and 6 times for brief individual supportive therapy that used cognitive behavioral techniques. One Soldier needed more extensive support as evidenced by attending 25 sessions; however, the individual was able to remain in theater and contributed to the unit's mission. Group treatment, specifically for anger control and stress management, was sporadically conducted depending upon provider availability. Psychotropic medication, prescribed by battalion surgeons and Level II medical officers, augmented the treatment of 58 (41%) behavioral health clients. The division psychiatrist was accessible via telebehavioral health for consultation on cases involving medication. Overall, the vast majority, 117 (84%), remained on, or were returned to full duty. Only 3 (2%) had restrictions limiting them to duty on the FOB. Twelve (9%) Soldiers had to be medically evacuated for psychiatric reasons with 5 (3%) redeploying early for administrative purposes. Final disposition was unclear in 3 (2%) records.

Distribution of Diagnoses.

Primary Diagnosis*	No. Diagnosed (N=140)	%N
Occupational Problems	25	18%
Adjustment Disorder		
with Depressed Mood	8	6%
with Anxiety	3	2%
with Anxiety and Depressed Mood	4	3%
Unspecified	9	6%
PTSD	18	13%
Partner Relational Problems	15	11%
Depressive Disorder, NOS	10	7%
Major Depressive Disorder	1	<1%
Dysthymic Disorder	1	<1%
No Diagnosis	11	8%
Combat/Operational Stress†	9	6%
Anxiety Disorder, NOS	9	6%
Primary Insomnia	8	6%
Relational Problems	2	1%
Life Circumstances Problems	2	1%
Intermittent Explosive Disorder	1	<1%
Social Phobia	1	<1%
Missing Data	3	2%

*Criteria: Diagnostic and Statistical Manual of Mental Disorders IV-TR (DSM-IV-TR)
†Not listed in DSM-IV-TR.

Postdeployment Follow-up

Most of the Soldiers, 96 (69%), treated during the deployment engaged services for psychosocial challenges within the first year of returning home. Almost half, 69 (49%), were seen at behavioral health clinics for a wide range of problems including adjustment disorders, PTSD, depression, anxiety, sleep disturbance, and occupational stress. Four (3%) received follow-up at the Family Advocacy Program (FAP), 3 for spouse abuse and one for child abuse. Two (1%) individuals were evaluated at the TBI clinic. The Army Substance Abuse Program (ASAP) provided treatment to one (<1%) Soldier. Several needed support from multiple sources as 11 (8%) were seen by both behavioral health and ASAP, 6 (4%) by behavioral health and FAP, and 2 (1%) were followed by behavioral health and the TBI clinic. One (<1%) individual was treated at ASAP for alcohol abuse, behavioral health for depression and was evaluated at FAP for domestic violence. There was no documentation indicating that the remaining 44 (31%) Soldiers received postdeployment behavioral healthcare.

Comment

As expected, behavioral health clients treated in theater were typically young, male, enlisted Soldiers on their first deployment. They tended to pursue services at their own volition for an array of psychosocial problems that ranged from combat-related psychological trauma to family concerns back home. Consistent with previous reports,[6,13,16] officers were distinctly underrepresented in the clinical population. This observation suggests that officers either possess protective factors that minimize the impact of psychological distress during combat deployments, or social barriers-to-care continue to exist that inhibit them from seeking needed behavioral health support. Fully exploring the reasons officers, and perhaps senior NCOs, rarely engage the behavioral healthcare system while deployed warrants further study.

The increasing number of military suicides over the past several years is widely recognized; therefore, it is not surprising that suicidal ideation complicated the

clinical management of several Soldiers. Behavioral health providers, coordinating closely with unit leadership, initiated safety plans and provided treatment to mitigate risk so that those thinking of suicide could safely remain in country to hopefully achieve a sense of mastery over their distress and build resiliency by contributing to their unit's success for the remainder of the deployment. However, individuals assessed as being at high risk or who were unresponsive to treatment had to be evacuated to higher levels of psychiatric care. Nevertheless, the unfortunate suicide of a Soldier assigned to the BCT indicates that perhaps more can be done.

The combination of numerous deployment stressors such as a harsh climate, austere living conditions, and duty at isolated outposts, compounded by family separation, created conditions ripe for operational stress reactions. Additionally, while not unique to COIN deployments, physical separation from significant others can strain healthy relationships and may hinder the healing of those troubled prior to deployment. Experiencing the deterioration of an intimate relationship from afar seems to lead to a sense of helplessness and depression as Soldiers struggle with the inability to return home to save distressed relationships. Treating those who abused substances, albeit small in number, may be particularly challenging given the risks they took to use prohibited substances. The absence of specialized ASAP treatment programs in the combat zone places the onus on the behavioral health team to deliver services to this population and can jeopardize the continuity of care for those enrolled in the program prior to deployment.

Perhaps the most surprising feature of the deployment was the apparent frequency and intensity of combat engagements. Doctrinally, COIN missions focus on 7 lines of effort that emphasize stability tasks aimed at supporting local civil operations.[28] The extent to which Soldiers reported experiencing enemy contact indicates that the BCT may have operated in a more kinetic environment that required offensive and defensive measures to secure the local populace. The well-established link between combat and PTSD[1,29-31] suggests that enemy action most likely contributed to the development of psychological trauma and stress-related disorders. Additionally, any worries about insurgent attacks may have been exacerbated by a perceived insider threat spurred by the "green on blue" assault of an American contractor. As reflected in the Mental Health Advisory Team 9 report, as COIN operations evolve into an "advise and assist" role and exposure to combat declines, behavioral health problems should decrease accordingly.[32]

Nevertheless, there may be other intrinsic aspects of a COIN deployment that uniquely contribute to adverse psychological reactions. Leaders at the small unit level, perhaps represented by the NCOs in this study, must cope with the demands of performing the dual role of warrior-diplomat. This complex role entails seemingly divergent responsibilities. Leaders must conduct combat maneuvers to secure the local populace, enforce strict rules of engagement, exercise cultural competency when engaging local leaders, and work diplomatically with members of the host nation's security forces during joint operations. While today's military leaders are certainly capable of multitasking, demanding and at times conflicting role expectations can create stress leading to feeling tense, frustrated, and anxious.[33,34] Furthermore, The work of Nash et al[17] on moral injury adds another interesting dimension for considering possible threats to psychological health during COIN deployments. Changes in behavior and distress, or "inner conflict," can occur when an individual conducts acts contrary to, or fails to prevent others from violating, deeply held values and beliefs.[17] During this long period of armed conflict, the Army has cultivated a fighting spirit within its Soldiers, in part, by instilling a warrior ethos that becomes the foundation for the warrior identity. Principles inherent within the code include a dedication to one's mission, defeating the enemy, perseverance, and an obligation to take care of fellow Soldiers, particularly those who have fallen. Additionally, in COIN operations it is necessary to establish rules of engagement to constrain overly aggressive tactics that run the risk of creating new insurgents.[28] There may be circumstances when Soldiers are confronted with the dilemma of having to quickly choose to either fulfill deeply held beliefs about what it means to them to be a warrior, while being tactically sound, or adhere to the strategically imperative rules of engagement. Regardless of the potentially ethically ambiguous choice they make, an individual may experience frustration, guilt, and the anxiety of facing possible legal ramifications.

Establishing access to behavioral healthcare for Soldiers dispersed throughout a large geographical area is a daunting task. Working jointly with an Air Force combat stress team enabled the BCT providers to institute outreach to the outlying COPs while maintaining a behavioral health presence at the main FOB. Brief therapeutic interventions using cognitive behavioral concepts appeared effective in enhancing coping skills and strengthening resiliency as the vast majority of clients either remained on, or were returned to, full duty. Options for group therapeutic approaches were limited

only by the need to divide behavioral health coverage between supporting the main clinic and conducting outreach throughout the battle space. Psychopharmacologic treatment, incorporated as an adjunct to the combat stress program, was readily available through coordination with unit medical providers. Telebehavioral health proved to be an effective tool for engaging psychiatric consultation for the most complicated clinical cases. For many, it appears that the psychosocial challenges they experienced while deployed may have followed them home. It is heartening to learn that most continued to receive help after returning.

An exploratory study using descriptive data derived from a retrospective review of healthcare records certainly has limitations. This clinical sample cannot be construed as being representative of the entire BCT and therefore our ability to generalize beyond the study group is limited. Additionally, the sample only included individuals who received behavioral healthcare during the first 7 months of the deployment. Those who engaged care afterwards may have differed appreciably both demographically and clinically. Although care was taken to minimize mistakes, information extracted from health records are subject to recording and coding errors. Also, health records available in AHLTA only included those who received treatment within the military's behavioral healthcare system after returning home; others may have used civilian resources and were unavailable for review.

Observations

While recognizing that more rigorous analysis is needed before definitive actions can be recommended, we offer the following observations for further consideration:

- Accounting for behavioral health support should be a priority in planning a COIN deployment due to the uniquely complex and stressful operational characteristics, including combat exposure, that threaten psychosocial health.
- Establishing adequate behavioral health support will, in many instances, require working jointly with providers from others services, therefore, opportunities for joint training should be pursued.
- Effectively supporting COIN operations requires behavioral health providers who have clinical experience in military settings and are capable of adapting their practice to fluid environmental and operational demands. Proficiency in treating psychological trauma and conducting traumatic event management is essential.
- Innovative practices, such as telebehavioral health and circuit riding, need to be further developed and evaluated for effectiveness.
- Further development of a seamless system of behavioral healthcare is critical for ensuring early intervention and continuity of care for Soldiers determined to be at-risk for postdeployment challenges.

Conclusions

A military capable of conducting COIN to support emerging democracies is an essential strategic component of our nation's security. However, helping to build a democratic society may be more complex and difficult than simply defeating an enemy. Operationally, fighting an insurgency entails exposing Soldiers to a dynamic, multifaceted, and potentially dangerous environment that can mentally and emotionally strain those responsible for executing COIN tactics. Driven by a confluence of factors that threaten psychological health, behavioral health support has emerged as an essential component of total force protection. Thus, sufficiently supporting a COIN deployment requires establishing access to behavioral healthcare that can respond to a wide-spectrum of psychosocial problems. Given the complex features intrinsic to COIN missions, the behavioral health team should consist of experienced personnel who can respond flexibly and incorporate innovative procedures to support units dispersed across a vast area of operations. Further, it is important that those individuals believed to be at-risk for psychosocial challenges after the deployment are linked to services that can help facilitate a much-deserved healthy homecoming.

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Sleep and the Use of Energy Products in a Combat Environment

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Abstract

Background: The use of energy products appears to be widespread among deployed personnel, presumably to combat fatigue and sleep deprivation. However, these products have been associated with unpleasant side effects and adverse events, including insomnia, mood swings, fatigue, cardiac arrest, and even death.

Objective: To quantify the sleep habits and energy products used among deployed service members in Afghanistan from 2010-2011.

Methods: Participants completed an anonymous survey querying their demographic information, sleep habits, combat exposure, and energy product use.

Results: Respondent data: 83% experienced some degree of insomnia; 28% were using a prescription or over-the-counter sleep aid; 81% reported using at least one energy product daily. The most frequently consumed energy products were caffeinated coffee and soda. Only 4 energy products were used more frequently during deployment than prior to deployment: Rip-It, Tiger, Hydroxycut, and energy drink powders. On average, respondents who increased their use consumed only 2 more servings per week during deployment than they had prior to deployment. Only degree of combat exposure, not quantity of energy products consumed, predicted degree of insomnia.

Conclusion: Energy product consumption by service members during deployment was not dramatically different than predeployment and was not associated with insomnia.

Over the past decade, the use of energy products and metabolism-inducing dietary supplements, which often contain a cocktail of caffeine, taurine, riboflavin, pyridoxine, nicotinamide, B vitamins, and herbal derivatives,[1] has reapidly escalated worldwide. Energy drinks have led this trend, comprising a $4.8 billion industry in the United States in 2008, and was predicted to grow to $19.7 billion by 2013.[2] Alternative energy products, such as shots, gels, powder packets, pills, and gum, are also on the rise. Nearly 35% of teenagers, more than 50% of college students, and 45% of deployed service members are estimated to regularly consume energy drinks.[3-6] The military demographic is the prime target for energy drink advertising campaigns,[7] but as of this writing there are only 2 published studies addressing the use of energy products by deployed personnel.[5,6]

Troops have used energy products such as caffeine and nicotine for ages in an effort to combat the fatigue and sleep deprivation that is inevitable in a combat environment. Thirty-one percent of Army Soldiers in one recent study reported taking dietary supplements "to increase energy"[7] and the presence of sleep disturbances in deployed populations is well-established.[8-11] Investigators have demonstrated that individuals who have been awake for 23 hours have psychomotor impairments equivalent to people who are legally intoxicated.[12] Even continued partial sleep deprivation, ie, sleeping only 4 to 5 hours a night on a continual basis, can have demonstrable results on cognitive performance.[13] Since 2009, US Army doctrine has recommended the prescribed use of over-the-counter stimulants to promote wakefulness during sustained operations, defined as 2-3 days.[14] However, modern warfare often requires troops to remain highly alert for much longer periods of time, likely contributing to the growing popularity and expanding diversity of energy products on today's battlefield.

Commercially available energy products are infused with various amounts of caffeine.[15] Caffeine is characterized by the Food and Drug Administration as a "flavor enhancer," and therefore is not required to be quantified on food labels. It has been deemed by the US government to be safe in amounts below 72 mg per 12 fl oz.[16] However, while most caffeinated sodas fall below this threshold, many energy products clearly exceed it. In fact, only 3 of the 28 most popular non-soda energy drinks in America contain less than 71 mg of caffeine

per 12 oz.[16] Caffeine has a number of unpleasant side effects when taken in excess,[17,18] and energy products have been increasingly associated with serious adverse effects, including tachycardia, hypertension, seizures, bowel ischemia, mania, psychosis, cardiac arrest, and sudden death.[19-27] It has even been suggested that caffeine may contribute to the development of combat stress reactions such as posttraumatic stress disorder (PTSD).[28] Physiological risks seem especially high when energy products (including dietary supplements) are taken prior to vigorous exercise or combined with other psychoactive substances.[29] Since deployed troops often ingest energy products containing a cocktail of psychoactive substances, and since they are frequently physically active during deployment, it is imperative that their consumption of these substances be more closely investigated.

The authors endeavored to quantify the overall use of energy products among deployed personnel, as well as to see if environmental factors such as sleep habits, combat exposure, and sleep deprivation placed certain populations at risk for heavier use.

Methods

Research Design

This study involved the administration of an anonymous survey to evaluate energy product use and sleep behaviors among deployed International Security Assistance Force personnel. Although deployed personnel may have different reasons for consuming wake-promoting energy products and metabolism-inducing energy products, we chose to inquire about both types because they can both affect sleep and they share a similar adverse effect risk profile. The goal was to distribute as many surveys as possible in nonclinical settings (ie, in supported units' operational areas, at briefings, and in public areas such as gyms, MWR facilities) at forward operating bases visited by the investigators throughout Afghanistan.

Participants

Inclusion criteria included English-speaking military and civilian personnel deployed or working in Afghanistan in support of Operation Enduring Freedom. Local nationals, non-English speakers, and individuals aged less than 18 years were excluded from participation. Investigators emphasized that participation was entirely voluntary and that surveys were anonymous. Participants were recruited with flyers and verbally during walk-about missions (staging areas, motor pools, office areas, tactical operation centers, etc) and in areas encountered during daily activities (military quarters, dining facilities, recreation facilities, laundry facilities, flight terminals, etc). Anonymous survey boxes were also used at some locations.

Instruments

The survey administered was created by 2 of the authors (W. M. W. and M. B. G.) and included questions about demographics, occupation, frequency of shift changes, number of roommates, use of sleep aides, combat exposures, sleep habits, and energy product use. The survey incorporated the Combat Exposure Scale[30] and the Pittsburgh Sleep Symptom Questionnaire–Insomnia (PSSQ-I), also known as the Insomnia Symptom Questionnaire.[31] Study variables came directly from the survey.

Data Collection

Once recruited, participants were given the choice of returning their survey to the survey box or to the investigator. Completed surveys were secured by the investigators in their respective clinical areas. Data collection ceased once the target number of surveys was reached.

Results

Participants (N=183) in this study were mostly male with a median age of 27 years and an age range of 18-58. Junior enlisted service members were the most frequent respondents followed by noncommissioned officers, warrant and company-grade officers, and field grade officers. All participants were in Afghanistan at the time they completed the survey, but their length of time in country varied, with an average of 6.6 months. Other relevant demographic data is highlighted in the Table.

The majority of participants (66%) indicated that they were required to change their occupational hours at least once. Respondents reported the following rates of shift change: never=44%, less than once per month=25%, every 1 to 14 days=23%, and every 15 to 30 days=9%. Most participants had multiple roommates: 45.4% of the sample reported having 4 to 9 roommates, 19.7% stated they had 2 or 3 roommates, 13.1% stated they had only one roommate, 12.0% had 10 or more roommates, and 9.3% lived alone.

Figure 1 depicts the raw data of sample-wide number of consumers by product type reported by participants both 30 days prior to and during their deployment. There were raw-value increases in number of total consumers from the predeployment period to the deployed period for only 6 of the 15 assessed energy products (Figure 2). However, the total number of consumers across all energy products was statistically unchanged from the predeployment and deployment periods (t=0.402, P=.694). Nevertheless, energy products were consumed at a faster rate during deployment compared to predeployment: That is, 24.0 servings per week on average during deployment compared to 16.6 servings per week prior (t=-3.34, P=.001). The energy products that were

consumed most often by the entire sample, both during deployment and at home, were caffeinated coffee and soda. However, during deployment, there were significant increases in rates of consumption in the prework-out supplement Hydroxycut and the free and widely available energy drink Rip-It (t=-2.051, P=.042 and t=-3.434, P=.001, respectively).

Surprisingly, we found no statistical difference in energy product use among respondents of different rank, gender, or military occupational specialty. Additionally, energy product users were no more likely than nonusers to have frequent shift changes or use sleep aids. However, consumption of energy products was positively correlated with the total number of sleep-inhibiting bedtime habits (r=0.204, P=.006). Additionally, respondents with no roommates (P=.047) and those with 10 or more roommates (P=.047) were less likely to use energy products than those with one roommate, although the significance of this finding is unclear. Finally, despite the lack of statistical difference among different occupations, several groups were found to be particularly frequent (food service, transportation, signal/communications, and aviation) and infrequent (supply/logistics, military police/security, maintenance, detainee operations, and ground combat) consumers of energy products.

Participants were asked about their engagement in activities believed to either promote or inhibit sleep within one hour of bedtime (Figure 3). Two was the median number of sleep-inhibiting behaviors in which participants engaged at bedtime across the entire sample. Only 15 respondents denied having any negative bedtime habits. They were more likely to be female, older in age, and from the following occupations: ground troops, transportation, and medical.

Insomnia symptoms were assessed with the PSSQ-I. Based on established cut-offs, 24% of the sample met criteria for an insomnia diagnosis worthy of clinical attention. Proportions of the sample that reported moderate to extreme levels of insomnia symptoms are represented in Figure 4. Figure 5 details the distribution of moderate to extreme types of psychosocial impairment that respondents reported were caused by their insomnia. The most commonly reported impairments were feeling fatigued during the day, feeling sleepy during the day, finding the insomnia bothersome, feeling their concentration was affected, and feeling their occupational functioning was affected.

As many as 83% of the sample reported that at least one area of their life was negatively affected by their insomnia symptoms at moderate to extreme levels, and 63% indicated that at least one area of impairment was extreme. Eighty-three percent of the sample also indicated that at least one of their insomnia symptoms was at a clinically significant level, and 20% of the sample reported that the frequency of their symptoms was "Always" (5-7 nights per week). However, only 28% of the sample used either a prescription or over-the-counter sleep aid.

As expected, insomnia symptoms and severity were positively correlated with the use of a sleep aide (r=0.322, P=.005). However, no significant relationship existed between insomnia and any other pertinent variable, including frequency of shift changes (r=0.126, P=.295), number of roommates (r=0.18, P=.879), level of combat exposure (r=-0.041, P=.734), number of sleep-inhibiting bedtime habits (r=-0.150, P=.213), and quantity of energy products consumed (r=-0.145, P=.229).

Distribution of Demographic Data for Study Participants

Variable (N=183)	n	%N
Gender		
Male	148	81%
Female	22	12%
Not indicated	13	7%
Age (years)		
18-25	76	42%
26-35	71	39%
35-45	27	15%
46+ (maximum is 58)	8	4%
Omitted	1	0
Rank		
E1-E4	84	46%
E5-E9	76	42%
WO1-WO3	16	9%
O4 and above	2	1%
Military/Civilian		
Military	179	98%
Civilian	1	0
Not indicated	3	1%
Average time in theater	6.6 months	
Job in theater		
Ground combat operations	20	11%
Aviation	12	7%
Military police/ security	10	5%
Detainee operations	6	3%
EOD/mine clearing operations	0	0
Civil affairs	0	0
Maintenance	16	9%
Construction	1	0
Supply/logistics	27	15%
Personnel/ administration	5	3%
Military intelligence	3	2%
Food service	2	1%
Signal/ communications	6	3%
Transportation	10	5%
Medical	40	22%
Other	25	14%

Comment

To our knowledge, this is the first published comprehensive analysis of energy product use by military personnel in a deployed environment. It is a preliminary study conducted with a relatively small population, but nonetheless

yielded some noteworthy findings that have implications for future deployments and research.

The redistribution of energy product consumption toward a select "high-use" population was interesting but reasons for this finding were unclear. Product availability is believed to play some role, since 2 of the 4 products consumed more frequently and by more people during deployment (RipIt and Tiger) are widely available in Afghanistan but are very difficult to find within the United States. The other 2 products (Hydroxycut and energy powders) may have been popular among respondents due to their ease of use and storage compared to some other products listed on the survey. However, product availability is unlikely to be the only contributing factor to increased use since coffee and tea did not see significant increases and are easily found in even the most austere dining environments.

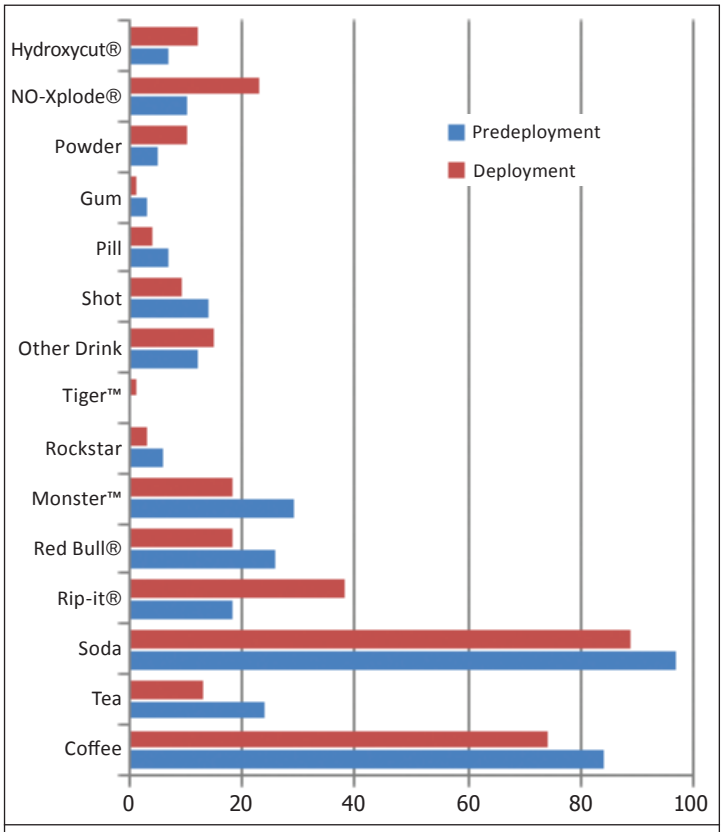

Figure 1. Total number of consumers of energy products by product type or brand name.

There was no statistical difference between the use of energy products and the presence of insomnia. This was somewhat reassuring given the high reported rates of insomnia and the potential health consequences of energy products. However, the high percentage of respondents reporting that their insomnia caused "extreme" levels of impairment is definitely concerning and warrants additional study, particularly given the complexity and hazardous nature of work-related tasks on the modern battlefield.

In addition to its effects on cognitive function and reaction time, sleep deprivation has recently been associated with hostility, violence, sexual dysfunction, and increased pain sensitivity.[32-34] These are problems frequently attributed to PTSD in combat veterans, but this data raises the question as to whether or not such problems may actually be due to sleep deprivation rather than trauma exposure. Clearly more research in this area is required.

We were surprised by the lack of correlation between insomnia and traditional sleep-inhibiting variables, including shift changes, roommates, combat exposure, bedtime habits, and quantity of energy products consumed. We were also surprised by the lack of positive correlation between insomnia and energy product consumption. We had predicted that respondents with insomnia would be high consumers of energy products because of their wake-promoting (and sleep inhibiting) properties, but such was not the case.

Although there was a positive correlation between insomnia and the use of sleep aids, 83% of respondents reported clinically significant insomnia while fewer than 30% reported regularly using a sleep aid, suggesting that more than half of the respondents were suffering the effects of chronic, unmitigated sleep deprivation. We considered the possibility that the relatively low use of sleep aids was because respondents did not want to impair their ability to function if awakened emergently from sleep. However, the use of sleep aids was actually highest in 2 populations most likely to be awakened emergently: ground combat troops (45%) and medical personnel (35%). Thus, reasons for this finding are unclear.

The facts that respondents engaged in an average of 2 sleep-inhibiting activities before bedtime and that nearly one-third of respondents changed shifts at least once a month were somewhat concerning. Perhaps similarly concerning was the fact that higher-ranking respondents consumed energy products at the same frequency as lower-ranking respondents. Enhanced education about healthy sleep habits, the consequences of insomnia, and the potential dangers of energy products may be warranted for both leaders and junior enlisted personnel.

Limitations of this study include its relatively small sample size, retrospective survey design, potentially

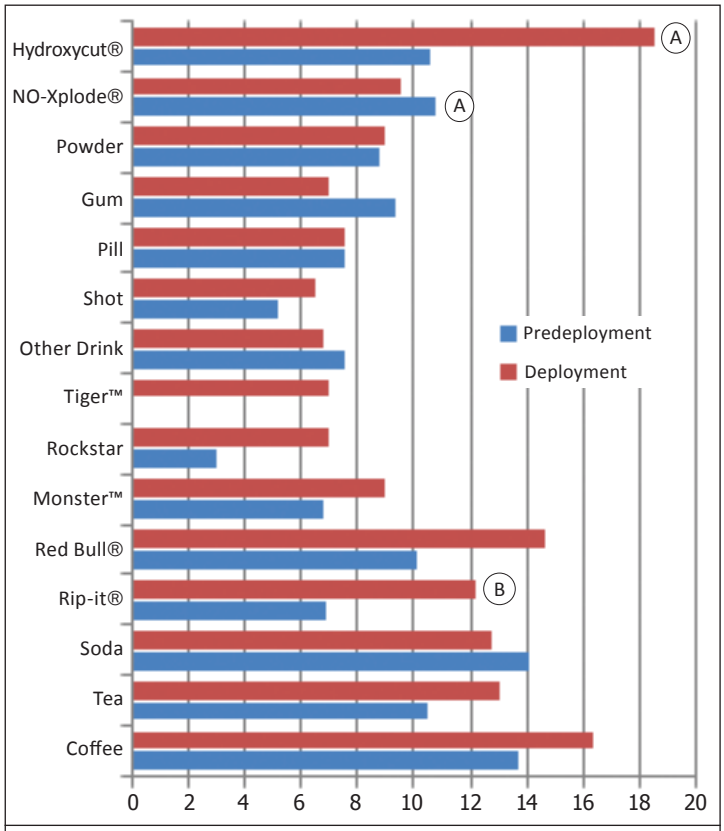

Figure 2. Mean number of servings of energy products by product type or brand name consumed per week.
Notes: A indicates Sig $P \leq .05$. B indicates Sig $P \leq .001$.

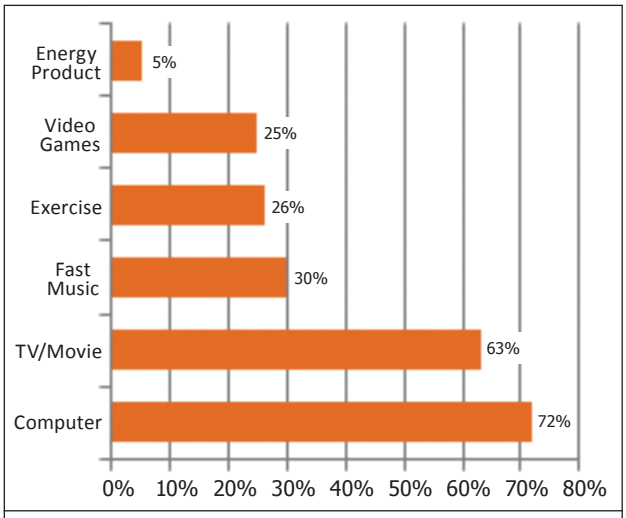

Figure 3. Percentages of study sample-endorsed sleep-inhibiting habits at bedtime, by type.

biased sampling (22% had a medical occupation), and reliance on self-report rather than laboratory measurement and direct observation. Future research is needed to improve upon these design elements and to further assess the relationship between insomnia, deployment environments, and energy products. Future investigations should assess the reason for individuals' use of energy products (ie, wake promotion vs weight loss vs workout enhancement), and whether or not there is any correlation between these reasons and outcomes such as sleep quality and duration. It would also be informative to track energy product use prospectively over time, including predeployment, during-deployment, and postdeployment consumption. Subsequent investigations should also include inquiries about respondents' desired amount of sleep, availability of sleep time, and satisfaction with sleep patterns. Finally, future research should endeavor to answer the question of whether or not prescription, wake-promoting medications have a role in modern combat operations.

Conclusion

Insomnia among our deployed population is ubiquitous and multifactorial. Surprisingly, we found the use of energy products during deployment to be neither extreme nor clearly associated with insomnia, though it could still be argued that these products have the potential for unexpected health consequences and may warrant better regulation. Sleep, whether during deployment or after one returns home, is imperative for the restoration and renewal of our physical and mental abilities. It is our hope that this article will contribute to the ongoing collection of information and research in this field and will be used as a basis for continued research in the future.

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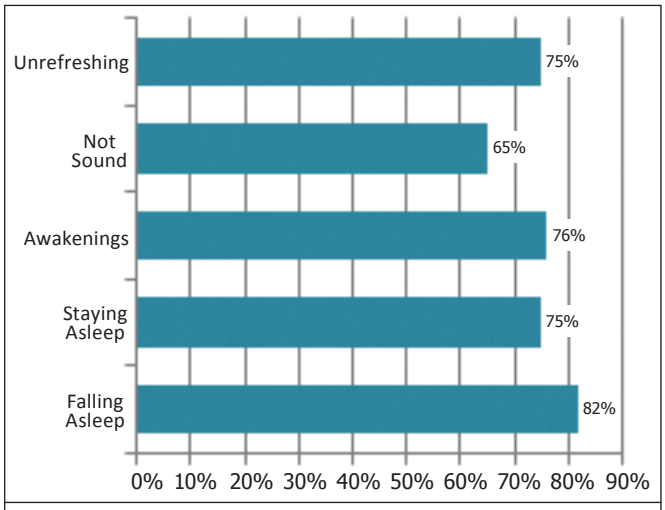

Figure 4. Percentages of study sample who endorsed insomnia symptoms at moderate to severe levels, by type.

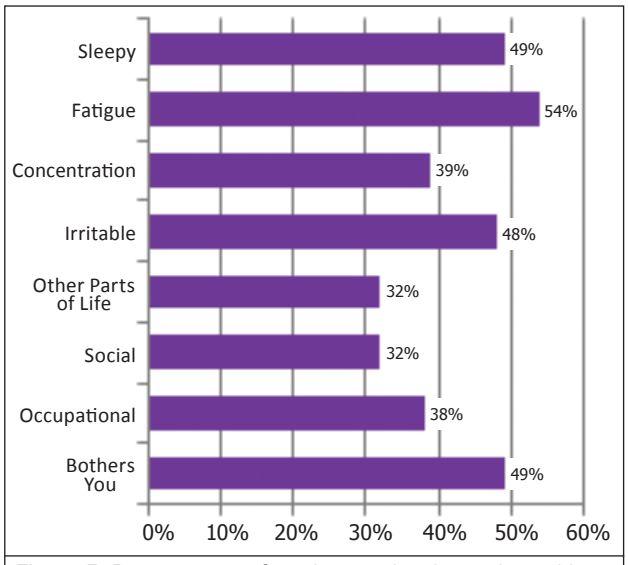

Figure 5. Percentages of study sample who endorsed insomnia sequelae at moderate to extreme levels, by type.

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Telebehavioral Health: Practical Application in Deployed and Garrison Settings

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We were introduced to telebehavioral health (TBH) by the outgoing Brigade Behavioral Health Officer upon our arrival in Kandahar, Afghanistan, in March 2012 for a 9-month deployment. She informed us that we would use the TBH system to support remote outposts throughout the deployment. We had been educated on telemedicine as a way to deliver care through technology in our respective social work and psychology programs. However, we both realized that we were reluctant to use telemedicine because of our prejudice that the use of technology is impersonal and could diminish skills we deemed necessary during the interview process between patient and provider. We quickly learned to set aside our preconceived notions and embrace telemedicine, specifically TBH, in order to deliver care to the Soldiers across our battle space. This article describes our experiences using TBH in both deployed and garrison clinical settings, the benefits, the challenges, and how we adapted our practice to incorporate its use.

Definitions

Telemedicine has been referred to as telehealth and telerehabilitation. Maheu et al[1] defined telemedicine as "clinical or supportive medical practices delivered across distances via telecommunication technology, performed by licensed or otherwise legally authorized individuals."[1(p6)] Telemedicine systems were established to deliver care for radiology, ophthalmology, dermatology, and psychiatry from a combat support hospital in Afghanistan to the Landstuhl Regional Medical Center in Germany as early as November 2002.[2] Gillert[3] pointed out that "most DoD medical centers operate telemedicine clinics…" and that roughly 25% of telemedicine consultation at the National Naval Medical Center was related to behavioral health services. With advances in technology over the past few decades combined with the identified need to provide medical consultation and treatment over distance in military settings, telemedicine allows delivery of behavioral health care to military forces deployed to various locations throughout the world.[4]

Although not an exhaustive list, behavioral health services delivered through telemedicine has been referred to as telepsychiatry, telemental health, virtual behavioral health, and psychotechnologies. According to Myers and Turvey,[5] behavioral health services is one of the most commonly used aspects of telemedicine, starting as early as 1957. Behavioral health care can be readily used through videoconferencing because other medical instrumentation such as x-rays or CAT scans is not required.[1] As applied in this article, TBH is the use of interactive videoconferencing software with a camera loaded on a desktop or laptop computer linked to a network transmitted over the internet to deliver care to a different physical/geographic location. The TBH system allowed us to communicate with patients in need of care similar to the way people communicate using internet applications such as Skype or Facetime. Behavioral health care services delivered over the TBH system included assessment, psychoeducation, monitoring, mental status exams, counseling interventions, and consultation for a wide variety of presenting problems and behavioral health diagnoses.

Advantages of TBH

There are many advantages described in the literature detailing reasons telemedicine should be adopted in mainstream clinical care. The 3 most frequently discussed benefits include expanding care to underserved populations or geographically remote areas, reducing overall cost, and improving access to care by bridging the gap between no services and services offered by specialty providers or disciplines. Besides Soldiers in combat environments, underserved populations or geographically remote areas that may be appropriate for telemedicine can include children, elderly in nursing homes, prisoners, survivors of natural disasters, people in rural areas, and veterans.[1,4-6] Cost reduction is demonstrated by a decrease in hospitalizations, emergency room visits, length of hospital stays, as well as less travel costs for both patients and providers. Specifically, costs within the military health system are reduced by avoiding unnecessary medical evacuation from theater and eliminating duplication of services across service branches.[1,4,6-9] With increasing shortages of specialty providers, telemedicine can help meet the demands of care and improve access with little to no disruption to the provider's clinical practice and workflow.[1,4-6,8-10]

Other benefits to TBH include its comparability to in-person encounters,[5,6] its demonstrated effectiveness in diagnosing and treating mental illness,[5] and its wide acceptance by patients and providers with high rates of satisfaction.[6,8,9] Telebehavioral health can be used across the care continuum from inpatient to outpatient clinics[11,12] to support a multidisciplinary approach extending beyond patient and provider, including consultation between providers[1,4,10] resulting in improved continuity of care.[1,4,10,11] Telebehavioral health can be implemented to protect patient privacy[5,13] and mitigate risk related to patient safety in emergent situations.[5,6] It also provides behavioral health support to help meet temporary surges in demand for services such as redeployment of large numbers of Soldiers.[4] Hoge et al[14] identified stigma as one of the barriers to providing behavioral health care to service members who met the screening criteria of a mental disorder before or after deployment. Reducing stigma through telemedicine is another benefit.[1,6] Soldiers perceive less stigma given the anonymity and ability to access care through primary care clinics rather than a designated behavioral health clinic at a distant location.

In order to maximize the benefits of TBH, one should consider the setting, technology/bandwidth, data protection, patient privacy, informed consent, and implementation of policies and guidelines related to the use of TBH including emergency protocols, staff training, and exclusion criteria for seeing a patient via TBH. According to Myers and Turvey,[5] telemental health should be conducted in a comfortable and private setting. They also recommend that a dedicated network with high bandwidth be used in order to optimize the quality of care and help to ensure patient privacy.[5] In their literature review of video teleconferencing (VTC) with patients with psychosis, Sharp et al[6] found that higher bandwidths were associated with better outcomes, specifically with acceptance and satisfaction for both the patient and provider. Encryption software and the use of a secure network should be considered to support data protection and patient privacy.[5,13] Patients should be aware of their rights to privacy and the limitations in the use of telemedicine through informed consent.[5,13] Gusarova[13] discussed that the patient has the right to refuse or consent to telemedicine services and recommended obtaining both written and verbal informed consent from the patient. If the patient refuses telemedicine treatment, other treatment options should be offered.[5] Although no patient safety issues associated with using VTC were reported, Sharp et al[6] recommend instituting emergency protocols. In order to address safety, emergency considerations should include clarifying procedures, roles, and responsibilities in psychiatric emergencies; addressing legal issues regarding care provided by local staff; and considering diminished control by the provider at another location compared to the interactions with local staff and the patient on site.[5,6] Myers and Turvey[5] discussed the importance of outlining inclusion and exclusion criteria, as well as when and where to refer patients if they are deemed inappropriate for TBH, such as those at higher risk for crisis, dysfunction, or noncompliance. If such considerations are not addressed, they easily become challenges identified in implementing TBH.

Challenges of TBH

The literature identifies several challenges of TBH. Some of those challenges involve legal and ethical considerations, such as patient privacy, appropriate private settings for treatment, data protection, informed consent, and problems within organizations with regard to policies and protocols.[5] Other obstacles to implementation include certification of providers or consultants,[3,10] lack of a streamlined process for licensure,[12] acceptance by the patient as it relates to comfort and familiarity,[4] and concerns regarding rapport, though little evidence was cited.[6] Resistance to or the lack of acceptance of the use of telemedicine by providers was another challenge cited due to the perceived threat of depersonalization, fear of diminishing the quality of the patient-client relationship, and overall resistance to change current practices.[1,5,6,10] Problems unique to the technology or network used such as unreliable equipment, distorted images, pauses in audio, and speech clarity were identified as significant issues with providing treatment and ultimately decreased rates of acceptance by patient and provider.[1,6] Other identified challenges include training and maintaining staff to use the equipment appropriately and seek consultation when necessary,[1,4,5] providing assistance or support to staff with expanded roles, including other medical or behavioral health staff at other sites,[4,5] and systemic problems of establishing TBH care that extend to multiple sites rather than one location or one special interest.[10]

With regard to certification and licensure, Brannon et al[12] pointed out that although telemedicine offers treatment to a mobile population, mobility does not reach beyond state licensures for providers offering the treatments. They highlight the lack of uniformity across state licensure requirements and delays and expense involved in obtaining a license, and they question who should be designated to streamline the process to facilitate interstate practice.[12] Though the Department of Defense allows federal employees with one valid state license to practice in any of their military treatment facilities (MTFs) worldwide,[8] it is still a lengthy process to transfer credentials to every MTF in which the provider practices. This is especially true of those who will work

using TBH, as they will necessarily have to undergo separate credentialing processes at multiple locations simultaneously.

Another challenge identified with the adoption of telemedicine into mainstream clinical care is the lack of research or the unreliability of research in early studies.[1] With more sophisticated and growing evidence-based research demonstrating the effectiveness of TBH, Myers and Turvey[5] predict that this along with other conditions will be more supportive to the adoption of TBH in mainstream clinical care. Trondsen et al[9] proposed to enhance research on the use of VTC in psychiatric emergencies through an on-call system with local access to a specialist assessment. This was the situation in Afghanistan with on-call services offered to Soldiers through TBH in our area of operations.

Applications During Deployment

Initially, 4 TBH sites were established within our area of operations, including the TBH system in the behavioral health offices located in the Kandahar aid station that served as our base of operations. By the end of our deployment in November 2012, the number of TBH systems had expanded to 10 as part of the effort to establish TBH at each aid station at every outpost. These numbers do not include the TBH systems established at the combat stress control (CSC) facility or the military hospital at Kandahar. The expansion in our area of operations was supported by the division psychiatrist and was successfully executed by our CSC team who supplied the necessary equipment and expert personnel to set up the TBH systems at distant sites where no systems were previously available. The TBH system was configured on a Medical Communication Combat Casualty Care laptop computer with Logitech camera and software. The 2-way video communication was transmitted over a secure, dedicated network, assuring that the patients' data were protected.

During the 9-month deployment, about a third of our patients were seen via TBH. There were various combinations in the provision of treatment among these patients. There were some cases in which the intake was conducted face-to-face and follow-up sessions via TBH. In other cases, care was initiated on TBH and the patient was then seen face-to-face when providers were at the patient's remote location during battlefield circulation.* In some cases, the patient was seen exclusively via TBH. The majority of our TBH patients seemed satisfied with the service. Only one patient refused treatment via TBH and a very small number openly complained about it when faced with connectivity challenges. Fortunately, there was a CSC provider at the location of the one individual who refused treatment via TBH, therefore, his care was easily transferred. In some instances, TBH was the only treatment modality readily available due to lack of behavioral health providers nearby, so another option may not have been possible for some other patients within our battle space. Despite some initial concern that care delivered via TBH would be substandard, we discovered that, in general, we did not notice substantial differences in our TBH experiences or patient care. Our ability to return TBH patients to duty, meaning the case did not result in evacuation from theater to a higher level of care, was not noticeably different from our face-to-face patient therapy. We also noted that patients generally conveyed positive therapy experiences and established treatment goals were met, including reduction of reported symptoms, regardless of whether patients were seen face-to-face or via TBH. From our perspective, the majority of patients who engaged in care via TBH were comfortable with the technology.

Despite our initial hesitation and discomfort with the unfamiliar mode of treatment, we soon discovered that while TBH care presented with challenges, there were many benefits as well. It improved access to care and minimized the need for patients and providers to make travel arrangements that ultimately would result in delay of care. It also allowed our small, 4-member behavioral health team (2 providers and 2 behavioral health specialists) to support a much larger area of operations, helped to provide care to a larger patient caseload in a more timely fashion, and protected against provider burnout through peer consultation, supervision, and reduced traveling requirements.

Through appropriate setup and interactions with medical personnel at remote aid stations, TBH could be used as a means for patients to engage in regular ongoing supportive counseling, brief check in, or follow-up appointments as needed. It could even be used for crisis evaluation if deemed appropriate by the behavioral health provider exercising clinical judgment after the case was staffed with the medics and provider at the remote aid station. If the case was deemed inappropriate for TBH, which most often occurred if the patient was acutely suicidal or homicidal, had intent to act on his or her ideations, and would not agree to a safety plan, the TBH provider recommended to the unit command that the patient be transported with unit escort via ground or air to a higher level of care within the theater of operations. A lateral move to the nearest behavioral health

*Battlefield circulation is the term for the movement of behavioral health personnel among smaller, remote locations such as forward operating bases and combat outposts to provide individual face-to-face contact with service members for therapy, education, and awareness, as well as allowing direct command consultation.

provider, such as the closest CSC unit, was not used in these cases as the higher level of care was typically necessary to address the crisis directly. Typically, crisis cases were related to safety concerns for individual patients, such as risk of harm to self or others. However, crisis events could also refer to critical incidents that took place as a result of combat, such as the loss of a Soldier. We did not use TBH to handle critical incident debriefings, often due to the functionality of the space where the TBH equipment was located. Most of the locations had the TBH equipment set up in small rooms that would not have been conducive to a group debriefing. When a critical incident occurred, we would use battlefield circulation to address the loss directly at the location, or locations, of the Soldiers and leaders most affected by the event. We would communicate face-to-face and coordinate directly with leadership on site to assess the needs of that population and appropriately manage these sensitive incidents.

Whether in crisis interventions or cases with no elevated risk, TBH helped to enhance the coordination between medical and behavioral health providers in providing patients with the best care and supported referrals for medication or other resources as indicated. If during the TBH assessment a referral for medication evaluation was indicated or if safety precautions should be implemented, we could communicate that directly to that aid station medical provider via TBH, who would then prescribe the medication or work directly with the chain of command at his or her location. We could also staff cases with other behavioral health providers and refer patients to psychiatric care that was conducted via TBH from the MTF on Kandahar. The use of other technology such as e-mail and secure voice over internet protocol also helped enhance communication among providers and our unit command teams.

Perhaps the most significant challenges we faced in delivering care via TBH technology were related to connectivity and network issues. There were many occasions in which the system was unavailable or the call was disrupted during an appointment. At times the video would freeze or the audio would malfunction. As a result, appointments sometimes had to be rescheduled, and, in a few rare cases, a crisis evaluation was postponed. This resulted in a higher burden on the on site care provider and chain of command. The patient had to be maintained within the on site aid station or company headquarters on one-to-one watch, using valuable unit resources, until TBH capability was restored and the patient could be properly assessed and triaged. In some cases in which the TBH system was not functioning, the decision was made by the aid station medical provider, the behavioral health provider, and/or the unit command to evacuate the patient to a higher level of care, especially in crisis care situations. In our experience, however, most of these issues could be adequately addressed via good communication and prior planning with the providers managing the TBH system at the on site location.

Other challenges using TBH in the deployment setting included determining the location of the TBH system at each site, determining priority of TBH when considering other operational variables, inability to use screening instruments unless coordinated through the on site medical team, and provider and patient comfort with the system.

The selection of the TBH system location had the potential to affect both the challenges and the benefits TBH offered at the site. The majority of the TBH sites in our area of operations were set up in aid stations. This allowed seamless transition of care between the behavioral health provider and medical provider at the patient's location, especially for medication referrals or safety concerns. The aid station was the optimal location to use TBH with patients expressing safety concerns due to the availability of medical staff and unit representatives on hand. The primary challenge of a TBH system in the aid station in a deployed setting is the lack of private rooms that can lead to a breach in confidentiality or mass casualties interrupting the care. On the other hand, using a location separate from the aid station had challenges with privacy as well, and detracted from the coordination between providers during the session. One site decided that due to the small size of their aid station and interruption of other medical care during TBH encounters, the TBH system was more effective in another building in a room with a curtain for a door. Another site designated a private room in their command operations building as their TBH setup; the patient obtained the key from the aid station, walked roughly 5 minutes to the building, and returned the key after the TBH session was complete. It is important to note that these same considerations concerning location to maximize privacy and care coordination during patient care also existed with face-to-face encounters during site visits on battlefield circulation.

Another challenge our unit encountered with TBH involved the number of dedicated, secure lines available at each location. For example, there were only 3 dedicated lines at one of the locations, and operations and intelligence had higher priority than TBH. The command team and medical assets on location initially tried connecting the TBH system to the network at their convenience, but since TBH required a dedicated line, the system was taken completely off the network. This resulted

in unavailability of TBH capability for 2 to 3 months which significantly affected access to care for patients at that location. Eventually, more dedicated lines were installed and TBH capability was restored.

Lastly, TBH slightly changed the delivery of care in the provision of screening instruments, handouts, and a portrayal of the therapeutic principles or models in session. For example, conducting the Beck Depression Inventory verbally was extremely difficult due to the amount of time required to conduct the screening instrument. We resolved this challenge by sending the screening inventories electronically to the provider on site to print and give to the patient. However, there were occasions when the aid station did not have printing capability or did not have time to return the completed screening inventory. These same challenges applied to patient handouts. Anecdotally we did not find that the assessment and interventions were greatly affected by the absence of screening instruments or handouts. When portraying a therapeutic model on paper, we realized that the image was mirrored, therefore, our hand gestures had to be the opposite of what we expected in face-to-face sessions. Additionally, the TBH communication was confined to viewing the shoulder and face of the other person which necessitated adjustment when using gestures, modeling behavior, or demonstrating therapeutic tools on paper. These challenges were overcome and diminished over time with increased provider experience.

Overall, the benefits and gains achieved using TBH technology, as well as the improved access to care for our Soldiers, outweighed the challenges we experienced in the process of becoming familiar and proficient with TBH capabilities.

Applications in Garrison

Upon redeployment, the Embedded Behavioral Health (EBH) model was implemented on Joint Base Lewis-McChord (JBLM), Washington. An EBH team is a clinic of mostly civilian behavioral health providers located within the footprint of a designated unit. The EBH team serves only Soldiers within their designated unit and operates under a model in which one provider is assigned to each battalion, providing care to any patients that come from that particular battalion. This allows providers to develop rapport with their unit leadership and is intended to help decrease stigma in the use of behavioral health services. The EBH model was implemented to improve access to care, to track trends in order to tailor support based on unit needs, and to foster relationships between behavioral health providers and command teams for the combined interest of the patient and unit readiness. Our EBH providers had an opportunity to use TBH at the Yakima Training Center for 4-6 weeks in the fall of 2013. The unit's behavioral health officers could not attend the training and TBH implementation became increasingly more valuable.

Implementing TBH in the training environment had some unique challenges and benefits. First, we needed to work with the Department of Behavioral Health at the Madigan Army Medical Center and our EBH lead to assign a dedicated laptop computer for TBH use. At the time we had only one behavioral health specialist assigned. She received a computer with the Tandberg Movi teleconferencing system and a camera. She then loaded the software necessary to conduct message and video exchange across the internet in real time and established an account. We coordinated with the signal support officer to determine if any network or bandwidth limitations could possibly affect use of TBH. We also learned that TBH conducted on an unsecured network required different informed consent forms.

There were limited network connections in Yakima for each unit, so we were not allocated a dedicated line for TBH use. To address this problem, we borrowed our medical command team's line for previously coordinated TBH encounters which did not interfere with company operations. We could only secure one computer with TBH capability at one location at Yakima to communicate with the EBH providers at JBLM. The location itself was inside a field tent that was collocated with other ancillary medical services (eg, preventative medicine and x-ray). The other medical services were asked to vacate the tent during a behavioral health or TBH encounter. The EBH team providing behavioral health care while the unit was training worked a set schedule from 7:30 AM to 4:30 PM. Therefore, any emergent behavioral health concerns outside of those hours were taken to the nearest emergency room or were managed by the unit which provided one-to-one watch until a TBH assessment could be conducted the next day. The behavioral health specialist conducted intakes or triaged the patient, then staffed the case with a licensed behavioral health provider via TBH in order to make appropriate recommendations for care. Despite the challenges, the benefits of offering some behavioral health care versus none outweighed the difficulties and supported the intended goals of the EBH model.

Another training opportunity presented itself when our brigade conducted a training exercise at the National Training Center, Fort Irwin, California. We considered using TBH to continue EBH support to the unit by

providing continuity of care, continuing coordination between command teams and their respective EBH representative, and to assist our behavioral health team in supporting over 3,000 Soldiers. However, we were unable to use TBH in this situation. The main challenge was again the network. We learned that it would be necessary to configure our JBLM/Madigan laptop on the Fort Irwin network. This required prior authorization which had not been obtained, so TBH could not be used. Therefore, only one provider and one specialist were available to provide support for the unit. During the first week at Fort Irwin, there was an unexpectedly large number of patient encounters in a short amount of time, several of which resulted in referral for hospitalization, and many of which required coordination with command and other medical providers. If the demand for behavioral health care had continued at that rate for an extended time, it could have easily led to provider burnout. Fortunately, the demand for behavioral health patient care did not remain at this pace for the duration of the training. Also, the Fort Irwin behavioral health team and command surgeon were very supportive in meeting the needs of our unit.

Outside of our unit's garrison application of TBH, efforts are underway to establish TBH capabilities on JBLM to improve access to care in the Western Regional Medical Command. Certain duty stations within the Region have less access to care due to smaller staffing and more austere environments, such as some locations in Alaska, for example. Consequently, a number of patients, both Soldiers and their family members, have been unable to receive timely behavioral health care at their assigned MTFs. They experienced increased wait times and were referred to the TRICARE network. Currently, a new clinic at JBLM is providing services for active duty military members and their families via TBH. Providers working in the TBH clinic are credentialed to provide care at 10 different facilities within the Western Region. The credentialing process is complex and can be lengthy, but multiple state credentials are essential to provide an increase in access to care and a decrease in wait times for military members and their spouses in locations where they would otherwise be referred to outside providers.

While the benefits and advantages of TBH technology contribute to TBH care in this capacity, there are also continued challenges. Despite being in garrison where a vast improvement in connectivity in comparison to a deployed setting is expected, network issues continue to present the biggest challenge. Calls still disconnect and video images freeze with surprising frequency.

Conclusion

Based on the research and our personal experiences, our opinion is that there are consistently more advantages than disadvantages in the use of TBH technology, regardless of environment or setting. Telebehavioral health capability is a valuable tool for the delivery of care to our patients, and both patients and providers will benefit from its continued development. Time, money, and energy invested in the improvement of software, hardware, and network capabilities of TBH technology will be resources well spent. Actively implementing solutions to expand TBH capacity and address challenges will result in expanded behavioral health care availability not only for Soldiers in deployed and garrison settings, but also to beneficiary populations in underserved areas and remote locations.

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Effectiveness of Telebehavioral Health Program Nurse Case Managers (NCM): Data Collection Tools and the Process for NCM-Sensitive Outcome Measures

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Abstract

As a part of our nation's pursuit of improvements in patient care outcomes, continuity of care, and cost containment, the case manager has become a vital member on interdisciplinary teams and in health care agencies. Telebehavioral health programs, as a relatively new method of delivering behavioral health care, have recently begun to incorporate case management into their multidisciplinary teams. To determine the efficacy and efficiency of healthcare programs, program managers are charged with the determination of the outcomes of the care rendered to patient populations. However, programs that use telehealth methods to deliver care have unique structures in place that impact ability to collect outcome data. A military medical center that serves the Pacific region developed surveys and processes to distribute, administer, and collect information about a telehealth environment to obtain outcome data for the nurse case manager. This report describes the survey development and the processes created to capture nurse case manager outcomes. Additionally, the surveys and processes developed in this project for measuring outcomes may be useful in other settings and disciplines.

As a part of our nation's pursuit of improvements in patient care outcomes, continuity of care, and cost containment, the case manager has become a vital member of interdisciplinary teams and in health care agencies. The case manager acts as the patient's key stakeholder in coordinating, collaborating, and communicating health care needs.[1] The Pacific Regional Medical Command/Tripler Army Medical Center integrated the nurse case manager (NCM) into the telebehavioral health (TBH) program. Where services may not otherwise be available, the TBH program links patients in need of behavioral health treatment to behavioral health providers using computers and video teleconferencing (VTC) technology over a secure network. There was a desire to measure patient care outcomes resulting from TBH, but processes to collect outcomes had not been fully developed, especially for the nurse case manager who was integrated into the multidisciplinary team.

This article is a report of the development of the processes and surveys that captured the outcomes of the nurse case manager's care in a telebehavioral health program. The project began with a systematic search of the literature by the authors, including general and military data bases on telebehavioral health, telehealth, nurse case management, nursing, social work, health promotion, and population health. Over 50 articles, chapters, reports, and policies were reviewed and consolidated by the project leaders for the survey development. The search provided substantial evidence for NCM outcome determination and identified critical core NCM functions, in addition to relationship-based care, self-efficacy, and patient empowerment concepts that are embedded in NCM care.

Four outcome surveys were developed, based on concepts that were synthesized by the project leaders from the literature, and using rigorous survey development methodology:

Patient Impact Survey (Figure 1)

Family Impact Survey (Figure 2)

NCM as Care Partner Impact Survey (Figure 3)

NCM as Consultant Impact Survey (Figure 4)

Also, an NCM Action Log (Figure 5) was developed. It became evident from the literature and initial planning that the challenge with collecting outcome information from telehealth programs revolved around the logistics of making the surveys available to patients, providers, and collaborators at multiple sites and centralizing the data for analysis.

Patient Telebehavioral Health Nurse Case Manager Impact Survey Please Circle Your Answer						
1. The Nurse Case Manager helps me get the services I need.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
2. The Nurse Case Manager understands my concerns.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
3. The Nurse Case Manager suggests additional resources, educational programs, information, and/or services to me as needed.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
4. I know how to contact the Nurse Case Manager when I need to.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
5. I am better able to get the services I need because of the Nurse Case Manager's help.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
6. I believe the Nurse Case Manager makes a positive impact on my well-being.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
7. I trust the Nurse Case Manager's suggestions.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
8. I feel like the Nurse Case Manager cares about me.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
9. I am satisfied with the Nurse Case Manager's assistance.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable

INSTRUCTIONS: Please circle the answer that best reflects your agreement with the statement indicated. This survey is confidential and will be collected by the administrative assistant for data collection purposes only. The Nurse Case Manager will have no access to your survey. Thank you for helping us serve you better!

Figure 1. Patient impact survey.

The purposes of this project were to develop nurse case manager impact surveys and determine the processes needed to capture the effect of the TBH NCM, as well as determine the feasibility of those processes to gather the necessary data to measure NCM effectiveness. In this project, the data sources were literature, other stakeholders consisting of providers, command (leadership from a service member's unit of assignment), and other care team members who partnered in care or consulted with the NCM. The data obtained were intended to develop valid and reliable NCM impact surveys and feasible processes to distribute, administer, and collect the surveys and analyze the data that could be obtained from the NCM impact surveys. Underlying the development of the processes was the requirement to maintain anonymity of the participants to mitigate any possible influence stemming from interaction of the NCM with the participants or staff involved in the conduct of the project. Before actual data collection occurred, the evidence-based practice (EBP) team submitted the EBP quality improvement application to conduct the project in accordance with the EBP approval procedures of the institution. The application was approved as an EBP project by the medical center's deputy chief of clinical services. This project maintained all HIPAA requirements relative to patients. Collecting patient satisfaction and outcome of care data is considered an acceptable and leadership encouraged practice at the Pacific Regional Medical Command. Survey participants were not asked for identifiers on any of the surveys.

Methods

The project began when leadership and staff members recognized the need to measure NCM effect on patient care. Direction came from telehealth/telebehavioral health (TH/TBH) leadership to measure outcomes. The TBH NCM responded by inviting others to join a project team, which included the senior nurse scientist and the regional telehealth clinical advisor. The 3 team members committed to leading the project, with their supervisors' support.

After the literature review, it was clear to the project leaders there was sufficient evidence to develop standardized processes and outcome surveys for telehealth at multiple sites. From this information, an action plan and timeline were formulated. To obtain a comprehensive view of the NCM's impact, it was determined that 4 different impact surveys were needed for patients, family members, care partners, and those who consulted with the NCM. The NCM as care partner was distinguished from the NCM as consultant, depending on whether the NCM was actively case managing and directly intervening with the patient or consulting without direct patient interaction.

Family

Telebehavioral Health Nurse Case Manager Impact Survey

Impact on my Family Member Please Circle Your Answer						
1. The Nurse Case Manager helps my family member get the services he/she needs.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
2. My family member is better able to help himself/herself get needed services because of the Nurse Case Manager's help.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
3. I believe the Nurse Case Manager makes a positive impact on my family member's well-being.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
Impact on Me Please Circle Your Answer						
4. The Nurse Case Manager understands my concerns as a family member.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
5. The Nurse Case Manager suggests additional resources, educational programs, information, and/or services to me as needed to help my family member.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
6. I know how to contact the Nurse Case Manager when I need to.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
7. I trust the Nurse Case Manager's suggestions.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
8. I feel like the Nurse Case Manager cares about me.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
9. I am satisfied with the Nurse Case Manager's assistance.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable

INSTRUCTIONS: Please circle the answer that best reflects your agreement with the statement indicated. This survey is confidential and will be collected by the administrative assistant for data collection purposes only. The Nurse Case Manager will have no access to your survey. Thank you for helping us serve you better!

Figure 2. Family impact survey.

It was also determined that an action log was needed to record the number and type of NCM activities.

Survey Development Methodology

Following a rigorous survey development methodology, 4 telebehavioral health NCM impact surveys were constructed using processes outlined by Waltz et al.[1] The survey development process included:

- Literature review and critique of prevailing critical core functional elements
- Expert review of critical elements
- Delphi process for consensus of content
- Content validity indexing
- Beta testing with representative populations
- Review
- Revision

The 4 impact surveys underwent 9 rounds of review to establish content validity. There was a 100% consensus that established a content validity index as 1.00. The individual items on each NCM impact survey were developed based on published research, meta-analysis; theory, standards of nursing, social work, case management literature, and expert opinion and critique. Multiple standards of practice related to nursing and case management served to identify customary critical core NCM functions for care coordination, collaboration, facilitation, and advocacy items.[2-5] Items inquiring about relationship-based care, the therapeutic relationship, and the caring aspects of the nurse-patient relationship were well documented in nursing and behavioral health literature.[6-9] Finally, items measuring patient education, patient empowerment, and self-efficacy stemmed from social change, health promotion, and population health models.[10-14] The impact surveys were beta tested with patients and providers and recommendations incorporated.

The NCM's action log (Figure 5) depicted the customary care elements that are provided by the NCM. Categories included were:

- Roles conducted by the NCM such as case manager, care coordination, and consultations.

Nurse Case Manager as Care Partner

Telebehavioral Health Nurse Case Manager Impact Survey

Please Circle Your Answer

1. The Nurse Case Manager understands the treatment plan I have in place for the patient.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
2. The Nurse Case Manager suggests additional resources, educational programs or information, and/or services for the patient as needed.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
3. I know how to contact the Nurse Case Manager when I need to.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
4. The Nurse Case Manager is skillful in supporting, educating, and assisting the patient.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
5. The Nurse Case Manager effectively coordinates the patient's care with me and other team members (eg, chaplain, family members, other providers).	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
6. The Nurse Case Manager effectively collaborates with me and other team members (eg, chaplain, family members, other providers) about the patient's care.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
7. I am better able to get services for the patient because of the Nurse Case Manager's assistance.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
8. The Nurse Case Manager adds value to the patient's care by providing logistical, social, and/ or emotional support.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
9. The Nurse Case Manager serves as an advocate for getting the resources needed for the patient.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
10. I trust the Nurse Case Manager's suggestions.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
11. The Nurse Case Manager makes a positive impact on the patient's wellbeing.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
12. I am satisfied with the Nurse Case Manager's assistance.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable

INSTRUCTIONS: Please circle the answer that best reflects your agreement with the statement indicated. This survey is confidential and will be collected by the administrative assistant for data collection purposes only. The Nurse Case Manager will have no access to your survey. Thank you for helping us serve you better!

Figure 3. Nurse Case Manager as Care Partner impact survey.

- Modalities used by the NCM to carry out interactions such as video teleconferencing, telephone, e-mails, or face-to-face.
- Critical dispositions of patients such as discharge planning, level of care changes, and diverting from emergency services.
- Critical safety interventions such as crisis intervention and emergency actions.
- Medication related discussions such as those related to adverse drug effects, medication adherence, medication education, medication reconciliation, pharmacy collaboration, and medication refills.
- Stakeholders contacted or with whom the NCM collaborated for/about patient care such as psychologists, psychiatrists, non-telebehavioral health NCMs, command, primary care managers, and family members.

The action log was beta tested by the NCM for one week to determine completeness and relevance to practice.

Process Development Methodology

The project leaders met with small group stakeholder teams to determine the processes needed. This phase involved determining the specific processes that were needed for each of the surveys used in the collection of outcome data. The following is a description of the involved staff and logistical processes developed unique to each survey.

1. Patient Impact Surveys would be e-mailed to the telepresenters (staff members at remote patient sites who facilitate the VTC connections between patients and providers). The telepresenters were to invite patients to complete the NCM impact survey after each NCM encounter. A script was prepared for the

Nurse Case Manager as Consultant

Telebehavioral Health Nurse Case Manager Impact Survey

Please Circle Your Answer

1. The Nurse Case Manager understands my treatment goals.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
2. The Nurse Case Manager helps me understand the services available for Behavioral Health patients.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
3. The Nurse Case Manager suggests helpful resources, educational programs, information, and/or services.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
4. The Nurse Case Manager suggests ideas for effective collaboration with other members of the patient's team (eg, healthcare providers, social services, and/or family members).	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
5. The Nurse Case Manager responds to my calls and e-mails.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
6. I am better able to get the services my patient needs because of theNurse Case Manager's assistance.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
7. I am better able to get services for the patient because of the Nurse Case Manager's assistance.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
8. I believe the Nurse Case Manager's consultation makes a positive impact on my patient's well-being.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
9. I trust the Nurse Case Manager's suggestions.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable
10. I am satisfied with the Nurse Case Manager's assistance.	Strongly Agree	Agree	Unsure	Strongly Disagree	Disagree	Not Applicable

INSTRUCTIONS: Please circle the answer that best reflects your agreement with the statement indicated. This survey is confidential and will be collected by the administrative assistant for data collection purposes only. The Nurse Case Manager will have no access to your survey. Thank you for helping us serve you better!

Figure 4. Nurse Case Manager as Consultant impact survey.

telepresenters to ensure standardized, noncoercive language which stressed voluntary and anonymous participation. The patient was instructed to return the survey to a designated location after completion.

2. Family Impact Surveys would be offered to family members who were distinct recipients of NCM services such as family education, resources, or support. At completion of interaction, the NCM would inquire if the family would be willing to provide feedback via e-mail. If so, the NCM would relay the name and e-mail address of the participant to an administrative assistant. The administrative assistant, using a specially created account with limited access, would send an e-mail with the survey as an attachment.

   The surveys include standard language about the voluntary, anonymous participation, as well as instructions for completion and return. Recipients' names would be shielded from identity by use of the e-mail BCC (blind-carbon-copy) function. Any recipient who desired to participate would save the PDF fillable survey and return it to the outcome e-mail account. The administrative assistant would then save the survey, delete the e-mail, and enter the data into a Microsoft Excel spreadsheet. Each survey would be assigned a sequential generic number upon receipt. If the recipient did not return the survey within one week, the administrative assistant would send a reminder e-mail. After that, no further contact would be made and the name deleted.

3. Either a NCM as Care Partner or a NCM as Consultant Impact Survey would be offered based on the NCM's role in care. The process internal to the TBH clinic itself would begin with a clinic briefing and provider agreement to receive, complete, and return the NCM as Care Partner or NCM as Consultant Survey appropriate to the type of NCM assistance. External care team members (providers not part of TBH clinic, command, and others), with whom the NCM partnered in care or provided consultation, would receive an e-mail detailing the purpose and the voluntary nature of the outcome survey after completion of the consultation or episode of care partnership with the NCM.

Nurse Case Manager Action Log
Part A: Roles, Modality, Continuity of Care

Active Case Management	Care Coordination	Consultation

Active Case Management: Perform all NCM functions, assessment, planning, facilitation, care coordination, evaluation, and advocacy.
Care Coordination: Perform continuity of care and facilitation activities (phone calls, e-mails etc.); limited patient engagement.
Consultation: Provide information, resources, advice, guidance, and/or directions to healthcare providers; no direct patient engagement.

Modality

VTC:

TC:

EM:

F2F

O:

VTC - video teleconference
TC - telephone call
EM - e-mail
F2F - face to face
O - other

Disposition Safety

DCP:	LOC:	CR:	Inpt:
DIV:	O:	ER:	DTS/DTO:
DCP - discharge planning DIV - diverted from ER	LOC: Level of Care change O: Other	CR - Crisis Intervention ER - Sent to ER	Inpt - Arranged Inpt Admit DTS/DTO - Danger to Self/Others

Comments

Figure 5. Nurse Case Manager Action Log, Part A

The process to identify potential recipients of the survey, deliver the survey, receive and enter returned data would be the same for those care team members internal and external to the TBH clinic. The NCM would create a list of the names and e-mail addresses, and identify the appropriate survey (NCM as Care Partner or NCM as Consultant) to be sent to each, and then e-mail the list to the administrative assistant on a weekly basis. The administrative assistant would follow the same process described in the Family Member Survey section.

4. The NCM Action Log would be completed each day by the TBH NCM to identify numbers and types of NCM functions. After each discreet encounter with the patient, family member, or care partner relating to patient care or consultation, the NCM would place tally (tick) marks on the Action Log in the appropriate categories to track activities. At the end of each week, the Action Log would be submitted to the administrative assistant who tallied and entered the data into an Excel spreadsheet. As a new, uncategorized item was listed under the "other" column, an additional category was created to allow for tracking multiple related instances.

Evaluation of Outcome Surveys and Processes Methodology

The evaluation of the surveys and processes were conducted after the completion of the project to obtain TBH NCM outcome data. Because of the extensiveness of the outcome data received, the actual NCM outcomes will be presented in a future article.

After the EBP project completion, final debriefing meetings were convened with the TBH providers, telepresenters, administrative assistant, and NCM to obtain qualitative data regarding the processes and surveys. After both qualitative and quantitative data were analyzed, the results were compiled and findings presented to leadership and other stakeholders.

Nurse Case Manager Action Log Part B: Medication Related Functions, Contacts/Collaborations		
ADE:		
ADH:		
ME:		
MR:		
Pharm:		
RF:		
Includes evaluating therapeutic/adverse effects, monitoring medication adherence, providing med education, reconciling medications, consulting with Pharmacy, and facilitating medication refills.		
ADE - Adverse Drug Effects ADH - Medication Adherence	ME - Medication Education MR - Medication Reconciliation	Pharm - Pharmacy collaboration MR - Medication Refills
ACS:		
CHAP:		
CMD:		
DX: (labs, imaging studies)		
FAP:		
Fam:		
IPMC:		
Legal:		
NCM:		
Patient:		
PCM:		
PEBLO/MEB:		
PSY:		
PSY MD:		
Rehab: (PT/OT)		
SPEC:		
SW:		
TBI:		
WTU:		
ACS - Army Community Services DX - Labs/Imaging IPMC - Integrated Pain Mgmt Clinic Patient - Patient Psy - Psychologist SPEC - Specialty Care	CHAP - Chaplain FAP - Family Assistance Program Legal - JAG/Ombudsman PCM - Primary Care Manager PSY MD - Psychiatrist TBI - Traumatic Brain Injury	CMD - Command Fam - Family Member NCM - Another NCM PEBLO - MEB Functions Rehab - PT/OT/ST WTU - Warrior Transition Unit

Figure 5 (continued). Nurse Case Manager Action Log, Part B.

Results

The surveys and processes developed were implemented. The following subsections discuss findings regarding the feasibility of the processes.

Survey Distribution and Completion

Patient Impact Survey

The surveys were distributed without incident. The Patient Impact Survey completion and submission had challenges relating to logistics which included the physical location of the telepresenter in relation to the patient's exit from the telehealth room, complex patient exit requirements (with multiple check points or procedures), or VTC rooms used as multipurpose facilities with no secure place for patients to leave surveys. All telepresenters indicated the need to provide additional written and verbal information to patients about the outcome survey's purpose and process. Additionally, the consensus was that information emphasizing the survey purpose and focus to evaluate the NCM services rather than the identity of the NCM should be in bold font on the information sheet. All telepresenters indicated there

was little to negligible burden on them and believed it was important to continue collecting outcome data.

Family Impact Survey

Two family members who were seen by the NCM during the 3-month time frame were e-mailed a survey without response. There was no further solicitation to provide feedback regarding completion of the surveys.

NCM as Care Partner Survey

Qualitative data gained from an after action focus group session with 8 providers indicated the survey was clear and easy to use/submit, comprehensive in capturing the elements of the NCM role, and not perceived as a burden to distribute or complete. There was concern that without patient identifying information, the providers could not always determine which patient or patient situation they were to consider in the completion of the NCM impact surveys. Also, the providers indicated that assessing isolated points in ongoing care was sometimes challenging.

NCM as Consultant Survey

No issues were identified relating to survey distribution or completion.

Action Log Completion

The Action Log was completed by the TBH NCM on a daily basis over the 3-month data collection period. In an after action debrief with the NCM, the mental focus needed and time required to complete the action log were identified as challenges. In addition, the newness of the process and usability of the Action Log were thought to affect completion since, according to the NCM, the survey required some editing and clarification. The NCM also noted that it was difficult to complete the Action Log each day, especially on very hectic days, and to capture the information immediately after the intervention.

Five of the surveys were completed on the day following receipt, which may have affected accuracy. The NCM suggested inclusion of action log elements into the documentation system (electronic health record) as a possible solution to reduce the burden of capturing care on a separate paper form.

Surveys Data Collection and Entry

Patient Impact

The telepresenters and administrative assistant reported that sending the completed surveys to the administrative assistant as a group of attachments in an encrypted e-mail at the end of the week worked well. All indicated that receiving a receipt of the scanned and e-mailed surveys was beneficial. The telepresenters destroyed originals once the administrative assistant downloaded, generically coded, entered the data into an Excel spreadsheet, and sent a receipt to the originating telepresenter.

Family Impact Survey

No issues could be identified since neither of the Family Impact Surveys was returned.

NCM as Care Partner Survey

In a debriefing session, the administrative assistant identified that data collection and entry became burdensome when the assistant's duties and assigned geographic location changed. The tasks related to this project then became additional duties. In addition, delays in distribution and survey return resulted when the provider list was not submitted in a timely fashion by the NCM. With regard to the one week reminder process to complete the Care Partner Survey, 2 recipients of the 21 reminder e-mails completed and returned surveys.

NCM as Consultant Survey

As with the Care Partner Impact Survey, the administrative assistant identified the administrative burden relating to collection of surveys and data entry when the lists of consultants were delayed. This affected the timing of distribution and potential return of surveys.

NCM Action Log

The Action Logs were given directly to the dedicated administrative assistant weekly when he/she was collocated with the NCM, and later by e-mail after the administrative assistant was relocated. The requirement to scan and e-mail the Action Log was a challenge for the NCM.

Comment

This project was able to collect Telebehavioral Health NCM impact data with the processes and surveys developed. The after action debriefing sessions with care partners, telepresenters, the NCM, and the administrative assistant yielded vital data to help identify the strengths and limitations of the project and provide future recommendations. Overall the feedback received indicated that the processes put into place worked well.

Recommendations

The authors' overall recommendation was to continue the NCM outcome survey distribution and collection, with the following process changes:

Patient Impact Survey Process

- Enhance buy-in from patients by providing a short orientation at the beginning of treatment, clarifying that they may be asked to provide feedback on their encounters to give them a voice in their health care, and provide data for program sustainability.

- Standardize procedures and language across all telepresenters for the collection and distribution of surveys. For example, each telepresenter would distribute a reminder slip to the patient to check out with the telepresenter.
- For future enhancements, rather than paper survey copy, develop a software application for phone, iPad, Facebook, or other medium for immediate survey distribution to the patient and return to TBH. This would necessitate a consent form for nonsecure, unencrypted forms of telecommunications unless a secure encrypted process was available.

Care Partner Survey Process

- Develop a secure, anonymous method to correlate the patient with each survey distributed to care partners so it would be clearly known for which patient-NCM interaction they were providing feedback. The use of generic IDs placed on the survey, sent with an encrypted master list with IDs sent to the individual providers, was suggested as a solution. Logistics of this process was found to be a challenge at this time.
- Implementation of a periodic summative survey process was suggested as an alternative to an individual patient-NCM interaction feedback survey from the care partners. Doing summative evaluations would require minor changes to the survey to reflect more general feedback of several patients for specific time periods, perhaps giving the instruction, "In general, provide feedback on the NCM care of your patients over the past 3 months on the following items."

Action Log Process

- Since completing the Action Log was seen as an important but arduous additional documentation task, reduce or streamline the NCM workload by developing an embedded template in the electronic medical record to capture stakeholder's interactions and NCM actions.
- Use drop down boxes in the embedded template collocated with mandatory documentation to allow input of actions in an efficient manner. Drop down boxes would also enable easy outcome data extraction of the number and type of actions taken for the patient's case management.

General Processes

- A dedicated assistant is required for outcome determination, outcome survey distribution, and data entry. Time must be allotted for these responsibilities. To enable standardized outcome processes, a standard operating procedure should be developed for remote sites for staff members who are not organic to the TBH program functioning as telepresenters and points-of-contact.

Conclusion

Timely, relevant, and robust outcome data related to NCM services delivered and received via telehealth can be obtained by following standardized processes and using standardized surveys. This article offers processes to capture NCM impact developed by a teleBehavioral program located at a military medical facility.

Implications for Practice

Although outcome measurement of NCM practice is clearly called for in case management standards, until now there have been no published standardized outcome processes or measurement surveys, and very little published outcome data. This EBP Project developed surveys using standardized survey development processes with items based on NCM scope of practice and standards, social change and health promotion theories, and relationship-based care. This project presents surveys and processes which may be of value in other healthcare settings as well.

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Military Service Member and Veteran Self Reports of Efficacy of Cranial Electrotherapy Stimulation for Anxiety, Posttraumatic Stress Disorder, Insomnia, and Depression

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Abstract

Cranial electrotherapy stimulation (CES) is being prescribed for service members and veterans for the treatment of anxiety, posttraumatic stress disorder (PTSD), insomnia and depression. The purpose of this study was to examine service members' and veterans' perceptions of the effectiveness and safety of CES treatment. Service members and veterans (N=1,514) who had obtained a CES device through the Department of Defense or Veterans Affairs Medical Center from 2006-2011 were invited to participate in the web based survey via email. One hundred fifty-two participants returned questionnaires. Data were analyzed using descriptive statistics. Participants reported clinical improvement of 25% or more from using CES for anxiety (66.7%), PTSD (62.5%), insomnia (65.3%) and depression (53.9%). The majority of these participants reported clinical improvement of 50% or more. Respondents also perceived CES to be safe (99.0%). Those individuals who were not taking any prescription medication rated CES more effective than the combined CES and prescription medication group. CES provides service members and veterans with a safe, noninvasive, nondrug, easy to use treatment for anxiety, PTSD, insomnia, and depression that can be used in the clinical setting or self-directed at home.

Cranial electrotherapy stimulation (CES) is a noninvasive, prescriptive medical treatment approved by the Food and Drug Administration for anxiety, insomnia, and depression. About the size of a smart phone, a CES device uses electrodes typically placed on both ear lobes to send a low level (less than 1 mA), pulsed electrical current transcranially through the brain.[1] An EEG analysis of 30 subjects who received one 20 minute CES treatment showed significant increases in alpha activity (increased relaxation) and decreases in delta activity (increased alertness) and theta activity (increased ability to focus attention).[2] These changes induce a calm, relaxed, yet alert state. A recent functional magnetic resonance imaging (fMRI) study provides irrefutable proof that CES causes cortical brain deactivation in the midline frontal and parietal regions of the brain after one 20 minute treatment.[3] Many psychiatric and sleep problems are thought to be caused by cortical activation from anxiety or attention disorders.[4,5] Thus, the fMRI study provides additional insight into the mechanism for the effectiveness of CES.

Since the early 2000s, Department of Defense (DoD) and Department of Veterans Affairs (VA) practitioners have prescribed CES for the treatment of anxiety, Posttraumatic stress disorder (PTSD), insomnia, depression, pain, and headaches.[6,7] CES is classed as a tier II modality for pain by The Army Surgeon General's Pain Management Task Force.[8] When CES is used primarily for centralized pain, it also can decrease anxiety, insomnia, and depression, common comorbidities of pain. Tan and colleagues[9] compared service members' and veterans' preferences for 5 different therapeutic modalities for decreasing stress, anxiety, insomnia, and pain at a veterans' outpatient pain management clinic. Participants could choose which device they wanted to use and could use a different device if they chose at future clinic visits. Cranial electrotherapy stimulation was selected 73% of the time (n=144), while the other 4 stress reducing modalities were selected from 4% to 11% of the time (n=53).

The purpose of this nonprobability, purposive sampling survey was to examine service members' and veterans' perceptions of the effectiveness and safety of CES for the treatment of anxiety, PTSD, insomnia, and depression. It was part of a postmarketing surveillance report for the Food and Drug Administration.

Safety

Cranial electrotherapy stimulation has an excellent safety profile. Electromedical Products International, Inc (EPI) (Mineral Wells, TX) reported, based on a survey

Financial Disclosure

Dr Kirsch is a major shareholder and officer of Electromedical Products International, Inc.
Dr Marksberry is an employee of Electromedical Products International, Inc.

Table 1. Alpha-Stim CES studies on anxiety.

Principal Investigator	Total (n)	Subjects	Study Type	Findings
H. J. Kim (2008)[11]	60	Preoperative patients	RCT, IB	CES group had significantly lower scores from baseline on the Likert Anxiety Scale than control group at end of study ($P<.01$, $d=-0.88$).
R. C. Cork (2004)[12]	74	Fibromyalgia patients	RCT, DB, OL	CES group had significantly lower scores from baseline on the Profile of Mood States Scale (POMS), indicating less anxiety, than sham group at end of study ($P<.01$). Open label CES group had significantly lower scores on POMS at posttest from baseline scores ($P<.001$).
A. S. Lichtbroun (2001)[13]	60	Fibromyalgia patients	RCT, DB, OL	CES group had significantly lower scores on the Profile of Mood States Anxiety Subscale (POMS-A), indicating less anxiety, from baseline than sham group at end of study ($P=.02$, $d=-0.60$). There was no significant difference in Open Label crossover group from pretest to posttest on POMS-A ($P>.05$).
R. L. Winick (1999)[14]	33	Dental patients	RCT, DB	CES group had significantly lower scores from baseline, indicating less anxiety, on the Visual Analog Scale ($P<.01$, $d=-0.61$) and higher scores on Likert Anxiety Scale, indicating less anxiety ($P<.01$) than sham group at end of study.
A. Bystritsky (2008)[15]	12	General anxiety disorder patients	OL	Anxiety scores decreased significantly on the Hamilton Anxiety Rating Scale from baseline to end of study ($P=.01$, $d=-1.52$). Anxiety scores were significantly lower on the Four-Dimensional Anxiety and Depression Scale at end of study from baseline ($P<.01$, $d=-0.75$).
S. J. Overcash (1999)[16]	197	Anxiety disorder patients	OL	Subjects rating of anxiety was significantly less on Numerical Anxiety Rating Scale, 0-100, from baseline to posttest ($P<.05$).Subjects' physiological measures of anxiety–EMG, EDR and Temp–changed significantly from baseline to posttest indicating less anxiety ($P<.05$).

RCT indicates randomized control trial; IB, investigator blind; DB, double blind; and OL, open label clinical study.

Table 2. Alpha-Stim CES studies on insomnia and depression.

Principal Investigator	Total (n)	Subjects	Study Type	Findings
Insomnia CES Studies				
A. G. Taylor (2013)[17]	46	Fibromyalgia patients	RCT, DB	CES group had significantly lower scores on General Sleep Disturbance Scale (indicating less sleep disturbance) than sham from baseline at end of study ($P<.001$, $d=-0.30$) and completed the study with scores below the range of insomnia.
A. S. Lichtbroun (2001)[13]	60	Fibromyalgia patients	RCT, DB, OL	CES group had significantly higher scores on Numerical Sleep Quality Rating Scale, 0-10, than sham group at end of study ($P<.02$, $d=-0.54$).
Depression CES Studies				
R. R. Mellon (2009)[18]	21	Jail security and patrol officers	RCT, DB	CES group had significantly less depression from baseline than sham group at end of study on Beck Depression Inventory ($P<.01$) and on Brief Symptom Inventory Depression scale ($P<.05$).
A. Bystritsky (2008)[15]	12	General anxiety disorder patients	OL	Depression scores were significantly less on Hamilton Depression Rating Scale at end of study from baseline ($P=.01$, $d=-0.41$).

RCT indicates randomized control trial; IB, investigator blind; DB, double blind; and OL, open label clinical study.

of Alpha-Stim CES users, that during 2007-2011 there was a total of 8,248,920 Alpha-Stim CES treatments (1,982,520 individual users treatments plus 6,266,400 in-office treatments by practitioners). Any side effects that occurred were mild and self-limiting. Reported side effects from all sources (EPI survey and the scientific literature) are 1% or less. These include dizziness, skin irritation at electrode sites, and headaches. Headaches and dizziness are usually associated with a current setting too high for the individual. The symptoms normally resolve when the current is decreased. Irritation at the electrode site can be decreased by using alternate sites for placement of electrodes. There have been no serious adverse effects reported from using CES during 31 years on the market in the United States.[10]

Efficacy

The first scientific investigations of the effect of CES were performed by Russian scientists in the 1950s and 1960s. These studies focused on the effect of CES on inducing sleep. After the 1966 International Symposia for Electrotherapeutic Sleep and Electroanesthesia in Graz, Austria, American scientists began investigating the effectiveness of CES for treating anxiety, insomnia, depression, and substance abuse. Numerous publications on these topics appeared during the 1970s. These early studies were typically small and had methodological limitations reflecting the research designs used in the time period during which they were conducted. However, the findings from the studies were consistently positive, showing CES decreased anxiety, insomnia, and depression.[1]

Over the past 15 years or so, the sophistication of the research designs and the quality of CES research improved substantially. Four randomized clinical trials (RCTs) investigated the efficacy of CES in treating state anxiety (Table 1).

Three of the RCTs, used a double-blind sham controlled design, while one RCT used an investigator-blind design. In these RCTs, the active CES group had significantly lower scores on state anxiety outcome measures than the sham or control group. Three RCTS on anxiety included Cohen's *d* effect sizes that ranged from *d*=-0.60 (moderate) to *d*=-0.88 (high). Two open clinical studies found a significant difference from baseline to the endpoint of the study, with subjects having lower state anxiety scores at the endpoint of the study. Bystritsky and colleagues reported Cohen's *d* effects sizes for 2 anxiety outcome measures: *d*=-1.53 on the Hamilton Anxiety Rating Scale (very high) and *d*=-0.75 (moderate) on the Four-Dimensional Anxiety and Depression Rating Scale. Cranial electrotherapy stimulation was also shown to significantly decrease insomnia and depression (Table 2). All studies that investigated the effect of CES used reliable and valid scales for the measurement of outcomes.

Methods

The CES Device

The Alpha-Stim CES device with ear clips electrodes (0.5 Hz, 100–600 μA, 50% duty cycle, biphasic asymmetrical rectangular waves) was used in this study. Two electrodes that clip onto the ear lobes are used to send a mild electrical current through the brain. Treatment duration is a minimum of 20 minutes, but may be an hour at least one time daily. PTSD patients sometimes do a one hour CES treatment several times a day. During acute PTSD episodes, patients may use CES for extended periods of time (several hours) until symptoms decrease. While CES treatments should last a minimum of 20 minutes to achieve the desired effect, extended use of CES has no adverse side effects and is well tolerated.

The Questionnaire

One thousand five hundred fourteen (N=1,514) active duty service members and veterans who obtained an Alpha-Stim CES device through the DoD or VA medical centers from 2006 to 2011 were invited to participate in the web-based survey via email. Email addresses were obtained from prescription information for CES devices that was on file at EPI, the manufacturer of the device. All of the potential participants had been taught, using a standardized DoD or VA CES protocol, how to use self-directed CES at home. Participants either voluntarily chose to respond or not to respond to the questionnaire. Survey Monkey is the professional website (http://www.surveymonkey.com) for survey research that was used for this study. Respondents completed the questionnaire on-line from September 1, 2011, to October 1, 2011. Of the 1,514 persons who were invited to participate in the survey, 152 (N) responses to the questionnaire were received, yielding a response rate of 10%. Although response rates vary by the population sampled, a response rate somewhere between 15% and 40% is common for web-based surveys.[19,20]

The questionnaire contained 27 questions that covered demographic information, prescription medication use, and current exercise activity, as well as questions asking respondents to rate the effectiveness of CES technology for treating anxiety, PTSD, insomnia, and depression. A single item, 7-point Likert scale, which has established validity in the literature,[21] was used to measure respondents' perceived effectiveness of CES for anxiety, PTSD, insomnia, and depression. A sample question follows:

> If you are using CES for your PTSD, since starting CES, rate your improvement as:
>
> a. Worse (negative change)
>
> b. No change (0%)
>
> c. Slight improvement (1% to 24%)
>
> d. Fair improvement (25% to 49%)
>
> e. Moderate improvement (50% to 74%)
>
> f. Marked improvement (75% to 99%)
>
> g. Complete recovery (100%)

Results

Data were analyzed using descriptive statistics. The characteristics of respondents, their use of CES technology, conditions for which they used CES, how often they used CES, and the length of time they had used CES are shown in Table 3. In addition to analysis of improvement-related questions on anxiety, PTSD, insomnia, and depression, questions were also interpreted in consideration of respondents' use of prescription medication while using CES. There were 152 responses to the questionnaire. Seven questionnaires did not include any effectiveness and safety data. Thus, the valid sample size was N=145 for the analysis of these questions.

Safety and Overall Perceived Efficacy

Of the 145 persons responding to "Do you consider CES safe and effective?", 99% reported that they view CES as safe and effective. Of the 1% of respondents (n=2) reporting CES as unsafe or ineffective, the reasons given were (1) that they were never shown how to use CES properly, and (2) CES was ineffective for their medical condition.

Table 3. Respondent characteristics and use of CES.

Characteristics	n (%N)	Characteristics	n (%N)
Military status (N=152)		Conditions for which respondents used CES technology* (N=145)	
Active duty service members	109 (72%)	Anxiety	114 (78%)
Veterans	43 (28%)	Depression	89 (61%)
Age (N=152)		Insomnia	98 (67%)
Range: 19 to 67 years (mean=38, SD=10)		PTSD	88 (60%)
Gender (N=152)		How often respondents used CES (N=145)	
Male	114 (75%)	Once a day	72 (50%)
Female	33 (22%)	Twice a day	35 (24%)
No response	5 (3%)	2 to 3 times a day	6 (4%)
Currently using CES? (N=152)		3 or more times a day	4 (3%)
Yes	125 (82%)	No response	28 (19%)
No	23 (15%)	Length of time using CES (N=145)	
No response	4 (2%)	90 days	19 (13%)
Currently taking at least one prescription drug? (N=152)		4 months	9 (6%)
Yes	112 (73%)	5 months	5 (3%)
No	40 (27%)	6 months	17 (12%)
Currently exercise regularly? (N=152)		9 months	5 (3%)
		1 year	31 (21%)
Yes	116 (76%)	2 years	20 (14%)
No	31 (20%)	3 years	7 (5%)
No response	5 (3%)	No response	32 (22%)

*Use of CES for the following conditions was reported as 4% or less: attention deficit disorder, spasticity, antibiotic, anti-inflammatory, acid reflux, narcolepsy, Parkinson' disease, erectile dysfunction.

Anxiety

Thirty-one subjects (21.3%) reported that they were not currently using CES for anxiety. One hundred fourteen subjects (combined sample taking and not taking prescription medications regularly) using CES for anxiety responded to, "If you are using CES for anxiety, since starting CES, rate your improvement as …." Figure 1 shows the results for the total group (N=114), the CES only no medication group (n=26), and the CES and medication group (n=88).

Posttraumatic Stress Disorder

Fifty-six of the subjects (38.6%) reported not using CES for PTSD. Although PTSD is an anxiety disorder, it was included as a separate variable because of its importance in the treatment of service members and veterans.[22] Eighty-eight subjects (combined sample taking and not taking prescription medication regularly) using CES for PTSD responded to "If you are using CES for PTSD, since starting CES, rate your improvement as...." The findings of the total group (N=88), CES only no medication group (n=18), and CES and medication group (n=70) are shown in Figure 2.

Insomnia

Forty-six subjects (31.7%) reported that they did not use CES for insomnia. Ninety-eight subjects (combined sample taking and not taking prescription medication regularly) who used CES for insomnia responded to , "If you are using CES for insomnia, since starting CES, rate your improvement as…." The findings of the total group (N=98), CES only no medication group (n=21), and CES medication group (n=77) are shown in Figure 3.

Depression

Fifty-six subjects (38.6%) reported that they were not using CES for depression. Eighty-nine subjects (subjects combined sample taking and not taking prescription medication regularly) using CES for depression responded to "If you are using CES for depression, since starting CES, rate your improvement as…." The findings of the total group (N=89), CES only no medication group (n=13), and CES medication group (n=76) are shown in Figure 4.

Determining Important Clinical Improvement

Dworkin and colleagues[23] defined the criteria for important clinical improvement as follows:

> Improvement of moderate clinical importance is 30% to 49%, and improvement of substantial clinical importance, the highest category, is 50% or more.

While the criteria were developed to evaluate clinical trial outcomes on chronic pain, it provides a useful framework for the assessment of clinical improvement in anxiety, PTSD, insomnia, and depression as well. For this study, improvement of moderate clinical importance was defined as 25% to 49% because the Likert scale which has been validated for use in measuring CES outcomes used 25% increments for categories. Using a conservative approach, the "Slight Improvement" (1% to 24%) category on the 2011 Alpha-Stim CES service members and Veterans survey was excluded, leaving the top 4 categories of "Fair Improvement" (25% to 49%), "Moderate Improvement" (50% to 74%), "Marked Improvement" (75% to 99%) and "Complete Improvement" (100%). Participants reported clinical improvement of 25% or more from using CES for anxiety (66.7%), PTSD (62.5%), insomnia (65.3%), and depression (53.9%). The majority of service members and veterans who reported improvement of 25% or more had improvement in

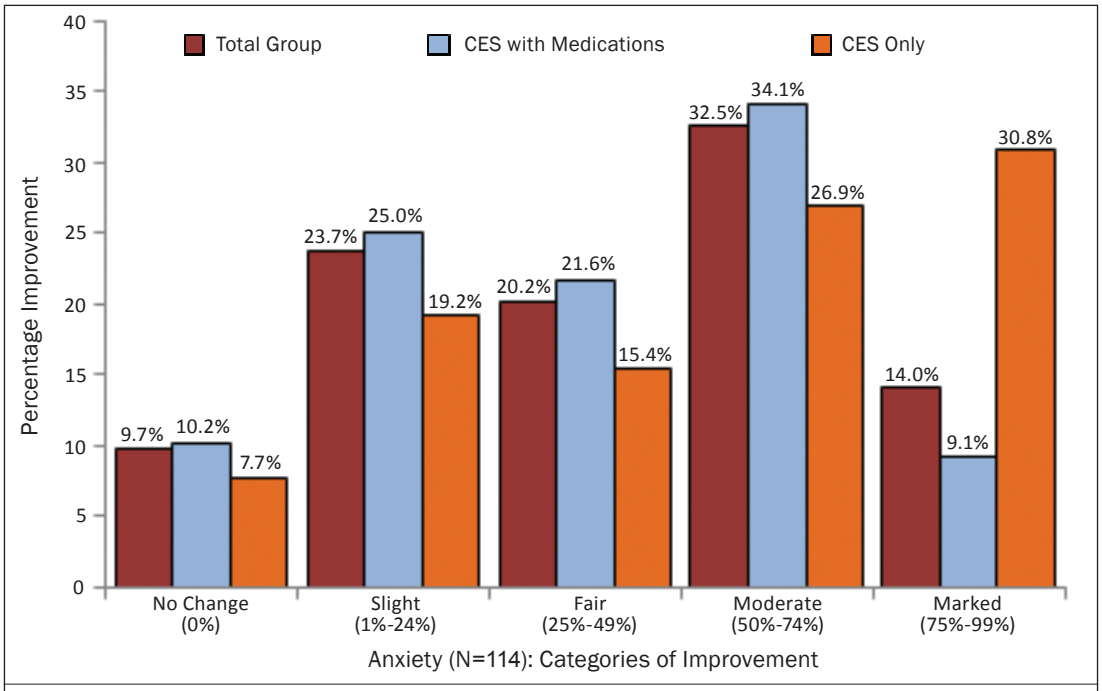

Figure 1. Perceived Improvement in anxiety with use of CES by group.

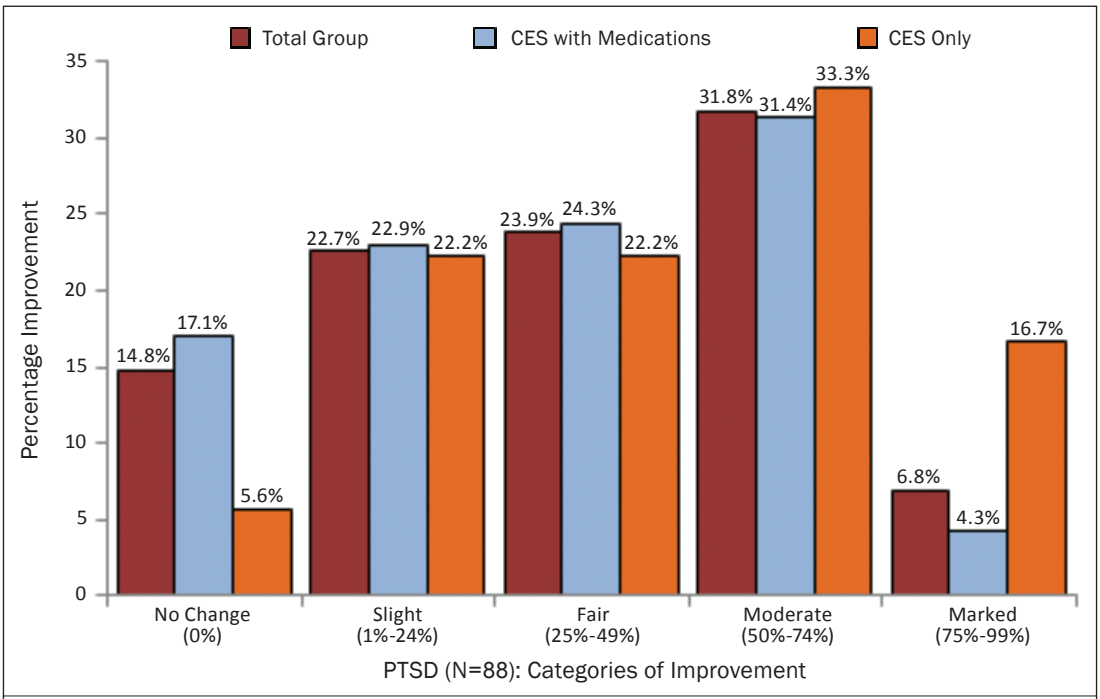

Figure 2. Perceived Improvement in PTSD with use of CES by group.

the highest category, "substantial clinical importance," (50% or more) on all variables: anxiety, PTSD, insomnia, and depression, as shown in Figure 5.

Prescription Medication Use

Of the 112 respondents who reported they took at least one prescription medication, 98 provided the name of the drug or condition for which it was taken. The number of prescription medications taken ranged from one to 11, with a mean of 2.6 and a median of 2.0. The types of medications taken are shown in Table 4. Medications that are used clinically for anxiety and depression were placed in the anxiety category.[24] Medications used primarily for depression were placed in the depression

category. Only those medications categorized as sedative hypnotics were placed in the insomnia category. Only those drugs specifically approved for migraine headaches were included in the migraine headache category, while all narcotic and other pain medications were included in the pain category, the subject of a separate paper.

Table 4. Prescription Medications Use by Condition.

Anxiety	45.9%
Depression	44.8%
Pain	38.7%
Insomnia	27.5%
Hypertension	16.3%
Seizure Control	11.2%
Migraine Headache	9.0%
Schizophrenia/Bipolar	9.0%

Comparison of CES with Drug Therapy

Several of the most common drugs used to treat anxiety, PTSD, insomnia, depression, pain and headaches were compared to the findings of the Alpha-Stim service member and civilian surveys as shown in Figure 6. CES data from October 2011 Military Service Member and Veterans study (N=152) and the CES Civilian User Survey (N=1,745) August 2011 were used. Pharmaceutical Survey Data were obtained from on-line WebMD user surveys (http://www.WebMD.com/drugs).

The Alpha-Stim CES civilian survey was conducted in August 2011 from data collected between July 2006 and July 2011 (http://www.alpha-stim.com). The final sample size from the civilian survey was 1,745 responders from a mail survey of 4,590 (38% useable responses). The WebMD drug survey asked civilians the question: "This medication has worked for me?" Respondents could choose to answer in one of 5 categories, with "1" being the lowest to "5" being the most effective. The sample size for the drugs selected ranged from N=62 to N=2,238. The CES survey questionnaire asked respondents to rate their improvement for a specific condition based on using CES. Subjects could choose one of 7 categories: worse (negative change), no improvement (0%), slight improvement (1% to 24%), fair improvement (25% to 49%), moderate improvement (50% to 74%), marked improvement (75% to 99%), and complete recovery (100%). While the questions in the WebMD and CES surveys were slightly different, all surveys asked questions about effectiveness. The WebMD data were changed to percentages and ranged from 1% to 100%. Two categories were excluded from the CES survey as they were not included in the WebMD survey: worse (negative change) and no change (0%). The categories of "worse (negative change)" or "no change" reflected less than 1% of the responses in all instances (ie, on all questions). The upper 5 categories which ranged from 1% to 100% were used for comparison. The scale was the same, 1% to 100% for the data from all surveys. The comparison of the data from the 2 surveys is both appropriate and justifiable based on the item content (ie, content/construct validity) and the format of item response.[19]

Comment

It is not surprising that the response rate to the survey was not higher. The majority of persons asked to participate in the survey were active duty service members.

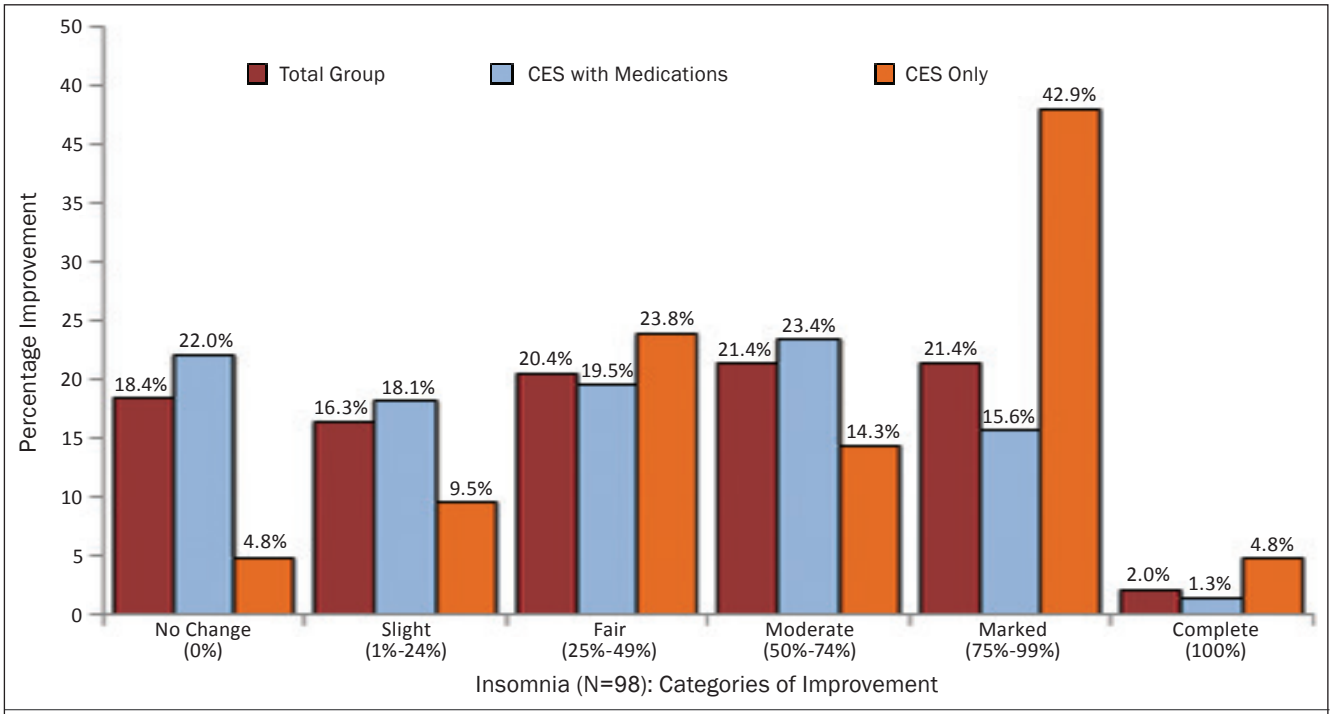

Figure 3. Perceived Improvement in insomnia with use of CES by group.

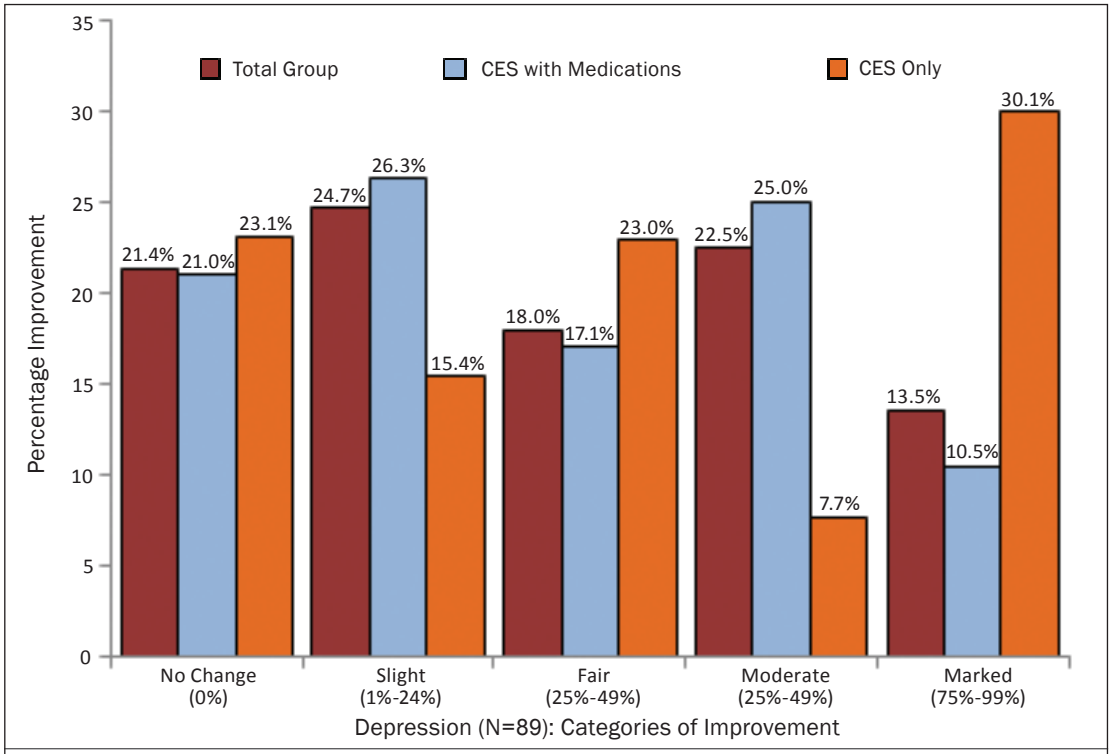

Figure 4. Perceived Improvement in depression with use of CES by group.

Many email addresses may not have been valid because the survey covered a 6-year period and some may have moved, were discharged, or may have elected not to respond to the email if they were no longer using CES. This study supports the efficacy and safety of CES technology for the treatment of anxiety, PTSD, insomnia, and depression in service members and veterans. The findings are consistent with findings of previous research studies on CES. The effectiveness of CES in a military population was comparable to the effectiveness of drugs commonly used in the treatment of the same conditions in the civilian population.

Ninety-nine percent of subjects in this survey considered CES technology to be safe. An important safety benefit of CES is that it leaves the user alert and relaxed after treatment, in contrast to drugs that can have adverse side effects and affect service members' ability to function on missions that require intense focus and attention.[25] This is particularly true in the combat theater of operations.

The information on prescription medication use provides a general view of drugs used by respondents for their specific condition(s). The findings that a high percentage of respondents took prescription medications for anxiety (45.9%), depression

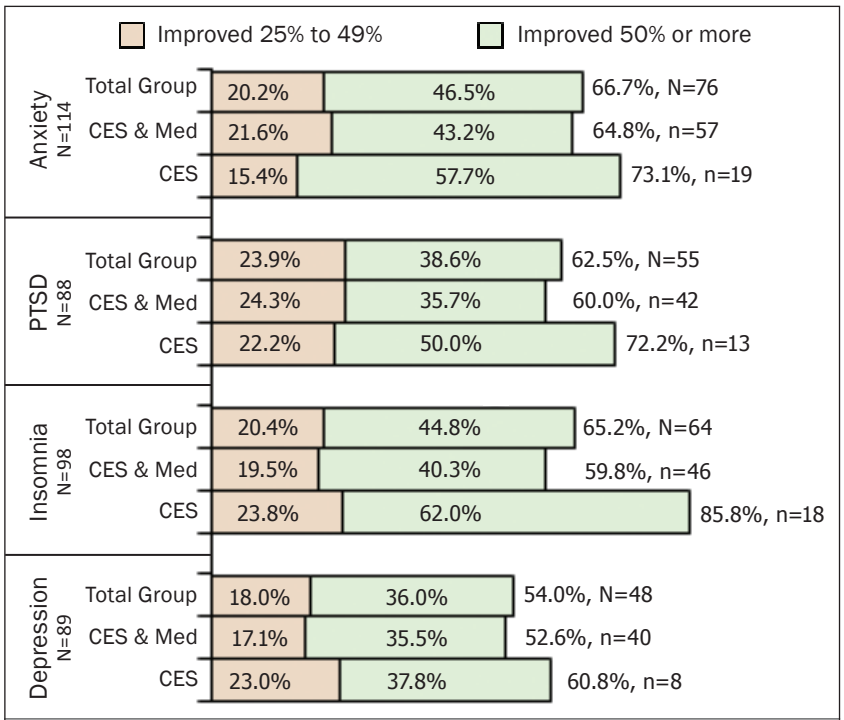

Figure 5. Service members and veterans who had improvment of moderate (25% to 49%) and substantial (50% or more) clinical importance.
Note: CES & Med indicates CES and medication. CES indicates CES alone.

(44.8%), pain (38.7%), and insomnia (27.5%) is consistent with the literature.[6,7] The importance of controlling for medication type and dosage in future CES studies is a valuable outcome of this survey. It would also be helpful to classify the severity of illness of the subjects in future studies. While it appears that medication may influence the effectiveness of CES technology, it is possible that respondents taking prescription medication had far more serious symptoms and medical and psychological conditions than the no medication group. The group sizes were unequal. The "CES only, no medication" group was considerably smaller, ranging from 13 to 26 subjects, in comparison to the CES medication groups that ranged from 53 to 88 subjects. This may account for the differences in scores between the groups. However, the effect of medication appears to be an important confounding variable when investigating the efficacy of CES.

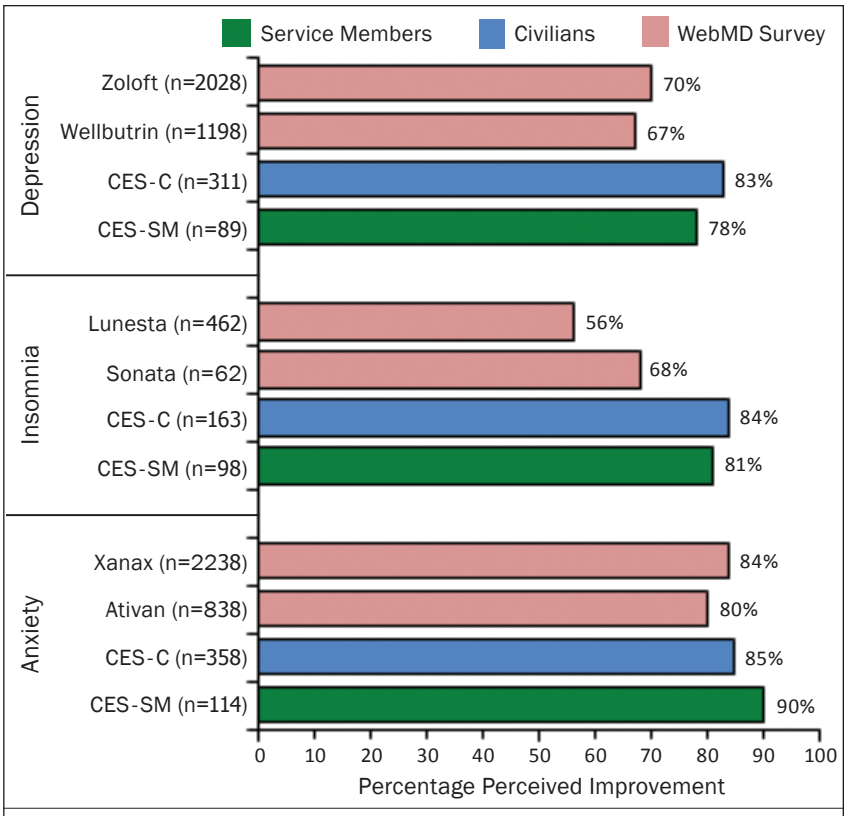

Figure 6. Comparison of service members' (SM) and civilians' (C) perceived responses to Alpha-Stim CES and drug therapy. CES data from Alpha-Stim Military Service Member Survey (N=152) and Alpha-Stim Patient Survey (N=1,745), October 2011. Pharmaceutical survey data from WebMD (http://www.WebMD.com/) accessed October 28, 2011.

Conclusions

The results of this survey are compelling and provide the foundation for a rigorous placebo controlled RCT that investigates the effectiveness of CES for treating anxiety, PTSD, insomnia, and depression in service members and veterans. In addition, this study also examines the influence of medication on CES efficacy outcomes. This study provides evidence that service members and veterans perceived CES as an effective treatment for anxiety, PTSD, insomnia, and depression. CES can be used either as an adjunct to pharmaceutical therapy or as a standalone therapy, providing service members and veterans with a safe, noninvasive, nonpharmacologic treatment for anxiety, PTSD, insomnia, and depression that can be used in the clinic setting, including the wartime theater clinics, or self-directed at home.

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Raising the Clinical Standard of Care for Suicidal Soldiers: An Army Process Improvement Initiative

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Abstract

From 2004 to 2008, the suicide rate among US Army Soldiers increased 80%, reaching a record high in 2008 and surpassing the civilian rate for the first time in recorded history. In recent years, the rate of Army suicides rose again; the year 2012 reflects the highest rate of military suicides on record. There is a need to assess current behavioral health practices to identify both effective and ineffective practices, and to adapt services to meet the needs of the Army behavioral health patient population. This paper discusses a process improvement initiative developed in an effort to improve clinical processes for suicide risk mitigation in an Army behavioral health clinic located in the catchment area of the US Army Southern Regional Medical Command.

It has been estimated that in recent years up to 15% of casualties in the wars in Afghanistan and Iraq were the result of suicidal behavior and completed suicide.[1] According to the 2010 Department of Defense Sentinel Event Report (DoDSER),[2] 22.42% of Soldiers who died by suicide (n=63) and 44.15% of those who attempted suicide (n=381) had received outpatient behavioral health treatment during the prior month. The former US Army Vice Chief of Staff cited a document produced by the National Institute of Mental Health entitled "Opportunities to Improve Interventions to Reduce Suicidality: Civilian 'Best Practices' for Army Consideration"[3] to illustrate the current lack of suicide-focused, empirically validated clinical treatments. In response, a number of suicide prevention initiatives have been enacted throughout the Army. Suicide prevention efforts within the Army aim in part to reduce suicidal behaviors through education, encouragement of help-seeking behaviors, and destigmatization.[4,5] This is evident in the materials and publications developed by the US Army Center for Health Promotion and Preventive Medicine (now the Army Public Health Command) in conjunction with the American Association of Suicidology, and in multimedia publications from the Defense Centers of Excellence. These initiatives largely focus upon the identification of early warning signs in order to implement early intervention, namely, a referral to behavioral health. In spite of the development of these suicide prevention initiatives, Army service member suicide continues to rise. In 2012, a total of 349 US military suicide deaths were recorded across the branches; the largest portion of these deaths, 182 potential suicides, comprised of members of active duty Army.[6,7] These findings, coupled with the lack of suicide-focused clinical treatments for the military, prompted a flourish of research to understand suicidal behaviors within the military.

Suicide risk may concentrate more in Army Behavioral Health (BH) patient populations for several of the reasons that make military experience unique when compared to civilian life. When suicidality among military members accompanies behavioral health conditions associated with sleep disturbances, concentration problems, and physical symptoms that impact on daily functioning, this can lead to reduced occupational performance, physical conditioning, and combat readiness. Soldiers who are suicidal may also experience somatic concerns and related problems that result in a higher frequency of medical or sick call visits. This may then contribute to increased work stress and increased conflict with coworkers and family members, affecting morale and well-being. Special populations within the military community, such as Wounded Warriors, have their own unique set of risks including chronic pain, decreased level of functioning due to injury or other health problems, and potential prescription drug abuse. Psychological and physical pains are both likely contributors to suicide. Previous factor analytic research with suicidal inpatients has shown the important psychometric role of

psychological pain in acute suicidal states.[8] In addition, in an analysis of risk factors for suicide in the Army, Retired COL Elspeth Ritchie notes the role of physical pain and disability as a precipitant for suicide, especially among older Service Members with higher rank.[9]

Soldiers who experience suicidal behaviors or who complete suicide have a disproportional effect on military communities. Units are primarily affected by a suicidal Soldier or by the loss of an integral team member which can have significant effects on surviving Soldiers and may lead them to experience a range of emotional reactions such as grief, guilt, and anger. This reduces work performance and contributes to increased vulnerability for a range of health-related problems including suicidal behaviors (ie, "contagion" effects).[10] The contagion effect occurs when one suicide leads to a subsequent suicide.[10] Factors that may support to the contagion effect have been researched and include documented clusters of suicides in close temporal or geographic proximity, exposure to media coverage of suicides and exposure to suicidal peers.[10] Research has been focused on adolescents and young adults due their tendency to learn behavior by observing and modeling the behavior of others.[10] This is of particular concern for military leadership due to the large number of military service members who are young adults under the age of 25.[11] There were indications of possible suicide clusters in the military among Army recruiters in 2008 and in 2009 within a National Guard unit, though these incidents have not been formally studied.[11] Additionally, the death of a Soldier by suicide often brings increased media and congressional attention leading to an increase in scrutiny of the chain of command. Finally, the military population is a highly transient population which translates into the high mobility of Soldier suicide risk. This often leads to disjointed treatment services that create challenges in the coordination of care for a Soldier between duty stations, as well as between clinics in a military medical treatment facility (MTF). Early and efficient treatment and intervention of suicidality can therefore improve occupational performance and mission effectiveness, while also having a positive effect on the health and well-being of a wide spectrum of the military community.

This paper discusses a process improvement (PI) initiative developed to meet the above noted needs and contribute to Army suicide prevention, as well as raise the clinical standard of care through improved clinical processes for suicide risk mitigation in an Army BH clinic located in the catchment area of the US Army Southern Regional Medical Command. What follows is our step-by-step approach systematically to endeavor to raise the clinical standard of care in an outpatient Army BH clinic.

A Process Improvement Initiative

Development of a Needs Assessment Report

The initial phase of the PI initiative included a thorough and systematic evaluation of existing clinical practices related to suicidal Soldiers and their care. The evaluation was conducted to understand the unique needs of a military outpatient BH clinic and current clinical practices, both effective and ineffective, in order to tailor services to the needs of the Soldiers at risk for suicide.

Similar to many Army BH clinics, this was a busy outpatient clinic setting with a high volume of complex cases, including Soldiers who were actively suicidal. At the time of the needs assessment, no aggregate data and few formal policies and procedures that were specific to tracking number of Soldier attempts at suicide, methods of suicide, or completed suicides existed, in part, due to the low incidence of the events. Anecdotal reports indicated that there may have been "3 or 4" Soldiers seen at the clinic who completed suicide over the past "2 or 3 years." The clinic leadership acknowledged that this information was included in the root cause analysis and the DoDSER which was completed following the death of a Soldier seen in any BH clinic, but not tracked locally

It was determined that the procedure in place to track suicidality at this clinic was a minimal paper and pencil self-report screening completed at the intake evaluation, during which the patient was asked only a single question about suicide. When suicidal ideation was endorsed, the clinic's standard operating procedures (SOPs) required an assessment of suicidal risk using a local form derived from the Suicide Status Form-II that was then scanned into the electronic medical record. Routinely, no level of risk was assigned to the Soldier. The primary intention of the risk assessment was to assist in assessing safety and need for hospitalization. Although some suicidal patients were entered into a database developed by a psychologist within the BH department called the high interest patient database and monitored by a treatment team, not all individuals with suicidal ideation were included. Thus, there was no existing system for the tracking of ongoing suicide risk among suicidal patients, and there was no systematic methodology for recording when and if suicide risk had resolved in a patient. Extensive review of the clinic's available procedures found guidelines for the hospitalization of a patient in the military hospital and in the community, as well as line of sight procedures for the emergency room for military personnel. There was no specific information available to the providers on instructions for weapons access or to aid in risk mitigation. Each provider passed along information informally to each on how to manage these situations or consulted

with the clinic chief for guidance. Some providers did periodic checks on the patients by phone, but there was no standardized procedure for this action. As a result of these findings, the team determined a great need for the development of SOPs with specific information available to all providers.

Treatment for suicidal ideation and behaviors generally followed the provider's theoretical orientation and most often focused on treatment of depression or coping with situational or relational concerns which may have minimized the risk posed by other factors such as pain and anxiety. Patients experiencing anxiety or posttraumatic stress-related symptoms were often placed in group treatment due to the limited number of providers available for individual treatment because of high workloads. Patients with pain problems were typically referred outside the clinic to a specialty care pain clinic at the hospital. Suicidal Soldiers were routinely hospitalized for brief inpatient stays at an MTF managed by active-duty personnel. A memorandum of understanding (MOU) was also negotiated with a private psychiatric facility where clinic patients may be hospitalized, seen in a day treatment program, or receive other outpatient services. There was no established or routine use of "postvention" (a systematic supportive intervention that follows a patient's death by suicide) to assist clinic staff who were affected by a loss.

Overall, the clinic's processes for working with suicidal Soldiers at the time of the needs assessment were relatively typical when compared to other Army MTFs and reflected the standard of care for similar civilian settings (ie, what reasonably prudent practitioners do with comparable patients in comparable settings). However, it seemed existing practices did not reflect optimal clinical care that could be provided in such a setting. In order to provide a more thorough consideration of what might constitute optimal care, a series of sensing sessions were conducted with clinic staff and Soldiers with current suicidal ideation or a history of ideation or attempts. The results of those sessions are described in the following sections.

Staff

Clinical staff indicated that their caseloads were full and challenging. Treatment providers, including psychology technicians (military occupational specialty 68X), described an average of 14 years of practice with an average of 1.6 years at this specific treatment facility. They estimated the rate of Soldiers with suicidal ideation or behaviors in their current practice as 21%, with a range of 0 to 85%. The lifetime rate of patient completed suicides ranged from zero to two, with an average number of lifetime patient attempts per provider at slightly over three. Providers estimated that they completed an average of 9 hours of continuing medical education on suicide over the course of their careers.

Problems described by clinical staff mostly centered on the volume of complex, high-risk cases and the overall sense of being "spread too thin." New civilian clinical staff with little military background experienced challenges connected to acclimating to the military culture, including rules, regulations, and military acronyms. Providers noted various challenges in dealing with unit commanders and observed that commanders, for a variety of reasons, can implicitly or directly undermine BH treatment. Clinical staff struggled with threats of suicide that Soldiers used for secondary gain or as a means of avoiding further deployments. Some clinicians perceived a culture of blame vs being supported or understood after an adverse event. Clinical consultation was usually done informally with peers and senior clinicians. However, many clinicians expressed a desire for more support and for regularly scheduled formal consultation opportunities with subject matter experts. The perceived delay in medication consultation was also noted as a major challenge to the delivery of effective care.

Leadership

Clinic leadership recognized the high operational tempo of the clinic environment, the need for more staff support, and the development and use of postvention strategies following a suicide event in the clinic. There also was a sense that unit commanders would benefit from better education about BH in order to support—not undermine—BH care.

Service Members

Soldiers were interviewed individually by the external consulting team in the presence of their clinic BH provider. Between October 2009 and August 2010, the overall number of outpatient BH encounters was 4,951. Soldiers were primarily male (69%). Thirty-seven percent of patients ranged from ages 26-35 years, 29% were in the 36-45 year age group and 22% were in the 18-25 year age group. Due to limitations of the records system, there was no method for accurately tracking demographics on race, ethnicity, and marital status. Ranks most often seen by outpatient BH providers were E4 to E7 for enlisted and O3 to O5 for officers. The top 4 diagnoses for patients were: (1) adjustment reaction, (2) episodic mood disorders, (3) depressive disorder, and (4) anxiety. The modal number of visits fell in the 1 to 5 range, far exceeding the next category of 6 to 10 visits. There were issues with relatively high no-show rates (leadership estimated up to 33%) among clinic patients.

Point of service for entry into the clinic for Soldiers occurred through walk-ins, referrals by commanders, or transfers from other medical treatment providers. Many Soldiers were in a state of personal and/or professional crisis and were having considerable problems at work and with their command. There were vocation-specific issues implicated in their suicidality, including the effect of multiple deployments, posttraumatic stress disorder (PTSD), and traumatic brain injury, as well as problems at home (ie, marital, parenting, and financial stressors). A major barrier to care for suicidal Soldiers was the perceived lack of support or even the undermining effect of their command. A number of the Soldiers interviewed readily acknowledged that their clinic treatment had been very helpful while others seemed somewhat critical of the larger military's response to their mental health situation.

Perceived strengths of the clinic were the quality of the staff and the excellent care the Soldiers received. The dedication and advocacy of clinical staff on the Soldiers' behalf was noted as a particularly helpful aspect of their treatment. Various evidence-based treatments used in the clinic (eg, prolonged exposure for PTSD) were found to be helpful. The perceived major weaknesses of the clinic were described as the staff being over-extended, very long wait times for medication consultation, and delays in referrals to specific treatments.

Outside Providers

Mixed reviews were provided about outsourced care. The MTF inpatient stays were relatively brief and oriented to short-term stabilization The MTF inpatient staff reported that there were no treatment or therapies offered. There were very positive reviews of the care provided in the private setting that had established a military-specific treatment unit that catered to the culture and needs of active duty Soldiers. The MOU with the private center and the collaborative consultations had created a user-friendly treatment environment about which Soldiers and providers felt quite positive due to the availability of inpatient services and programming. Another private facility that did not have an MOU arrangement seemed to provide much less satisfactory care that largely reflected standard contemporary psychiatric care (ie, not tailored to the unique needs of active duty Soldiers).

Recommendations for the Process Improvement

Based on the initial evaluation of clinic practices and focus groups, a number of recommendations were developed by the consultation team for consideration to enhance BH-related care of suicidal Soldiers. These included recommendations to establish written suicide-specific policies and procedures, increase the use of screening tools to identify initial suicidal risk, and track ongoing risk across the course of care and to apply an electronic health record version of the Suicide Status Form (SSF) for the Collaborative Assessment and Management of Suicidality (CAMS), which is an evidence-based assessment of suicide risk. Additional suggestions included the use of CAMS-based therapeutic tools to stabilize outpatient care, problem-focused interventions and treatment of suicidal drivers, tracking of clinical outcomes, and overall improvement of clinical documentation. In addition, creation of a procedure for postvention for adverse events was proposed to support clinical staff and garner lessons learned. Lastly, effectively engaging commanders, family members, and supportive peers in support of clinical care of suicidal Soldiers (which may require separate educational efforts and the cultivation of collaborative working relationships with a Soldier's support structure) was considered as essential to successful remediation of the suicidal risk.

Another critical recommendation for a successful suicide-specific PI effort was to provide an opportunity for all clinical providers to attend a weekly telephonic clinical consultation meeting with the external consultation team members who are expert in the treatment. The external consultants would eventually withdraw from this consultation meeting once the meeting is clearly established and the use of the intervention has become routine. Such a meeting should be primarily case-focused, input on clinical strategies and related risk management issues should be encouraged to facilitate adoption of a new evidence-based clinical practice across the clinical staff. We observed that even the most reluctant clinical staff members eventually engaged in the use of the evidence-based approach when they heard about improvements in other providers' suicidal patients and saw growth in confidence among their peers cases with this new approach, even in the face of some very challenging circumstances.

A recommendation was also made for the implementation phase of the PI initiative, including a series of follow-up CAMS training sessions for the clinical staff by Dr Jobes and members of the Catholic University Suicide Prevention Laboratory. These training sessions emphasized the "nuts and bolts" of using CAMS and used a practical, hands-on approach featuring role-plays, video illustrations, and case examples. The primary learning objectives for training were: use of the SSF for risk assessment; development of Crisis Response Plans and problem-focused interventions targeting "suicidogenic" issues; use of the SSF to track suicide risk over the course of care; update crisis response plans and treatment plans as needed; and use of CAMS and the SSF to achieve optimal clinical outcomes.

Development of a Clinic Advisory Team

A well-intended PI effort to raise the clinical standard of care related to suicide risk can be potentially doomed by taking a purely top-down approach. In other words, if the chief of the clinic or the commander of the military treatment facility directs or orders clinical staff to embrace wholesale changes in their clinical practices, resistance in the form of subtle or even overt push-back is likely unavoidable. However, some of the anticipated resistance to changing clinical practices may be moderated somewhat by abject fears of losing patients to suicide. In addition, such resistance may be even more constrained by the prospect of malpractice litigation and/or a root cause analysis that attributes a suicide to failures in clinical care. But, even in the face of suicide risk, there are often challenges encountered when changing from familiar clinical practices to a new approach to treatment. Preparatory actions for the formation of a clinic advisory team can be taken to increase the likelihood of successful implementation. A successful PI initiative may be rooted in the ability of the consulting team to successfully engage key clinic providers as members of an internal advisory team within the overall PI effort. This can not be merely a symbolic gesture. It should be a genuine effort to engage a small group of invested staff members to help shape and tailor the PI efforts to the culture of the clinic. This allows the generation of a "bottom-up" effort as the advisory team is a key part of meaningfully shaping and influencing the changes that come with efforts to improve clinical practices. To avoid undesirable inefficiency and redundancy, the advisory team should not be too large, perhaps 3 to 5 members depending upon the size of the clinic. Beyond the formation of this internal team, we have also seen the critical need of an identified individual clinician "champion" who leads the internal team and serves as a point of contact to the external consulting team. Ideally, this champion is someone who has the respect of clinic staff and also has the requisite energy and ability to lead the effort and the work of the advisory team.

It is critical that the facility is prepared to make an ongoing commitment to successfully raising the standard of care through the PI initiative. The clinic advisory team must have strong leadership support and the necessary authority to make systemic changes and exact minimum requirements for success from clinic staff. As previous literature indicates, success or failure in the use of evidence-based practices begins and ends with sufficient behavioral reinforcements for providers to risk changing what they ordinarily do.[12] One of the biggest implications in this regard is that many evidence-based practices are labor intensive and require more front-end engagement, sometimes including longer session durations. An almost certain way to undermine a PI effort is to require busy clinicians to do more on top of more; such an approach will only breed resentment and resistance, dooming the potential success of the PI. Systemic changes and potential modifications of policies and procedures, such as modified schedules including longer sessions initially, must be pursued so as to "reward" clinicians for engaging in an evidence-based form of care. While these providers may see fewer patients—which is an obvious problem in many over-run systems—there are ways to offset the effect by triage, risk stratification, and matching patients to different kinds of treatments (group vs individual) of different intensities and "doses" of care in direct relation to the risk that they present. There should not be a "one-size fits all" approach to effectively treating the range of suicidal risk. In 2012, the National Action Alliance for Suicide Prevention published clear guidance about specific systemic changes to better accommodate and facilitate the treatment of suicidal risk across treatment settings.[13]

Selecting an Evidence-Based Approach

As discussed in previous reviews,[3,14] there have been surprisingly few empirically-supported treatments for suicide risk published in the professional literature. Among the limited options, dialectical behavior therapy and a suicide-specific form of cognitive-behavioral therapy (CBT) are the leading approaches with the best empirical support. Specific to suicide risk among military personnel, a newly adapted brief CBT approach is now being studied in randomized clinical trials for suicidal service members in outpatient[15] and inpatient[16] clinical settings. As noted in the review by Schoenbaum and colleagues,[3] other approaches such as Stanley and Brown's safety planning intervention[17] and CAMS developed by Jobes[18,19] are being studied in Department of Defense (DoD) and Veterans Affairs (VA) settings within rigorous randomized clinical trials.

The PI effort described in this article featured the use of CAMS because, as described by Jobes and colleagues,[20] this is a flexible clinical intervention that focuses on an effort to keep suicidal service members *out* of the hospital through the effective development an outpatient stabilization plan (eg, a crisis response plan or a safety plan) as well as the successful targeting and treatment of key suicidal "drivers"—those patient-identified issues that directly and indirectly compel the patient to take their life. It was deemed to have an inherent adaptability that is unique among existing evidence-based approaches. Moreover, this is currently the only published approach that has been used successfully with suicidal active duty service members.[21] In their nonrandomized clinical trial of CAMS vs treatment as usual (TAU) with 55 active

duty suicidal Air Force personnel, these investigators observed a strong relationship between CAMS care and rapid and significant reductions in suicidality with co-occurring significant decreases in nonmental healthcare use related to emergency department and primary care visits. As described by Jobes in a recent review paper on CAMS,[19] an additional 5 correlational studies have provided uniformly strong support for the effectiveness of CAMS across a variety of settings and populations. A recent, small randomized clinical trial (RCT) provided convincing causal data about the effectiveness of CAMS in relation to significant decreases in suicidal ideation and overall symptom distress at 12-month follow-up compared to TAU. In addition, CAMS caused significant increases in hope, patient satisfaction, and retention when compared to TAU.[22] Currently, a well-powered RCT is underway with suicidal Soldiers in Georgia, and another large RCT is being conducted in Denmark comparing CAMS to dialectical behavior therapy with suicidal outpatients.[19] Given our successful experiences in various PI efforts featuring CAMS, we anticipate the prospective use of CAMS being practiced both widely and effectively with suicidal military members across all service branches.[23]

Clinician Training

The training process used in the course of this PI initiative was largely successful but not without challenges. One of the inherent training issues that plague DoD and VA evidence-based professional training is the lack of actual subsequent use of the newly-trained intervention after the training. To address this concern, we sought a 3-phase training approach within the process improvement effort:

1. Phase I. One full day of didactic CAMS orientation-training to BH clinical staff across professional disciplines (including psychology technicians).
2. Phase II. Follow-up CAMS role-play training for all clinical providers over a day and half.
3. Phase III. Follow-on consultation calls between key PI members and clinical staff.

The following sections detail each phase of training and discuss the highlights and challenges that we encountered.

Phase I: CAMS Orientation Training

A 6-hour PowerPoint-based didactic training session was given to all PI participants from the participating clinic. This orientation training was video-recorded for future use by new providers arriving in the clinic. The goal of this training was to broadly orient the clinicians to the field of clinical suicidology and, more specifically, to help them learn about CAMS, including the theoretical foundation and existing empirical support for the approach. This training provided an orientation to the problem of suicide, including the rising rate of suicide in the US Army, difficulties of accurately predicting suicidal behaviors, and the latest research in suicidology. In the course of this training, the providers learned that CAMS is a therapeutic framework, not a new psychotherapy, that emphasizes a certain philosophy of clinical care as well as the clinical use of the suicide status form, a multipurpose assessment, treatment planning, tracking, and outcome tool.

Phase II: CAMS Role-play Training

This phase consisted of 2 days of training for providers approximately one month after Orientation Training. Focus was an introduction to the CAMS suicide status forms which are collaboratively used in all sessions with service members with suicidal behaviors. Role-plays of a hypothetical course of typical CAMS care of 10 to 12 sessions were interspersed with practice in dyads for intakes, safety planning, follow-up sessions, and suicide resolution sessions using CAMS. Use of the new electronic version of the suicide status form (eSSF) was taught during the second day. Additionally, the SOPs developed by the PI Clinic Advisory Team for integration into the clinic and measures for evaluation of the PI were covered. Two separate training sessions were conducted one week apart to accommodate the number of people who required training.

Participants of the phase II training were 12 psychologists, 7 psychiatrists, 6 social workers, a licensed professional counselor, 5 psychology interns, 2 psychology residents, an advanced practical nurse, a pharmacist, 4 psychology technicians, and a secretary. Prior to the training, participants rated their anxiety working with suicidal patients and their confidence in their ability to assess and treat suicidal patients on a 1-5 scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree). Most participants indicated confidence in their ability to form a strong therapeutic alliance with a patient with suicidal concerns (3.9/5), and to successfully assess (3.7/5) and treat (3.6/5) suicidal behaviors.

The role-play training sessions were conducted by the external consulting team that included 2 licensed psychologists and 3 senior doctoral students in clinical psychology. The format for this training experience involved 2 members of the training team performing demonstrations of segments of CAMS over a "typical" course of CAMS care. One member played a suicidal

Soldier; the other showed the CAMS-use of the SSF for each segment of care (eg, session 1, a subsequent "tracking" session, and a final "resolution" outcome session). After each demonstration role-play, the clinicians in the training sessions were placed in dyads and then asked to role-play the demonstration that was just modeled. Within each training dyad, one partner was designated to role-play a suicidal Soldier-patient that he or she had previously seen, which gave their training partner an experiential chance to learn about using CAMS with a realistic case. With the successful completion of each segment of CAMS, the partners would then switch roles so that each had the chance to experience the clinician role for each training segment. During the role-playing, members of the external consultation team moved among the dyads to answer questions and make suggestions if the role-players became "stuck" or were unclear about certain aspects of the intervention. This role-play training gave providers an initial, first-hand experience of using CAMS.

During the training phase, participants completed a 6-question pre- and postknowledge test to measure their knowledge of CAMS principles and practices. Participants' correct scores increased by 1.6 (27%) at posttest. Satisfaction with the implementation training experience was also measured. Most participants were satisfied with training, with 72.5% of participants stating they were "very satisfied," and 25% indicating they were "satisfied." The remaining 2.5% answered "neutral." Satisfaction ratings with training averaged greater than 4 (agree) on a 5-point scale for the content and presentation of material, willingness to learn more, and an expectation that CAMS would benefit practice. Participants on average said they were confident they would use the material learned in training (4.4/5) and indicated they would recommend other providers participate in CAMS training (4.5/5).

Ultimately, the goal for the PI training effort was for all providers to have the orientation and role-play training prior to clinic-wide implementation of CAMS, which occurred within weeks of the final role-play training. With clinic providers fully oriented and trained in CAMS, the implementation phase would be supported by phase III.

Phase III: Follow-on Consultation Calls

As noted earlier, the follow-on consultation calls for clinicians was seen as a critical element to implementation success. The calls between the clinical providers and members of the consultation team began on schedule within weeks of the implementation of CAMS across the clinic. Despite all efforts to thoughtfully orient, train, and prepare providers through the phasic training process, early uptake and use of this intervention was slow and inconsistent among all providers. In our experience, there was initial reluctance of many staff members to use the evidence-based treatment for which they had been trained because many reported that they were "too busy" to introduce a new and "complicated" approach into their practice. In spite of this feedback, one provider was able to present a new case almost every week and the patients markedly improved. Hearing about this success over time inspired clinicians to give the approach a try.

There were various problems that we encountered in the course of the training. Although CAMS was implemented in military and VA settings prior to this PI initiative, it had not been integrated into an Army BH clinic. Therefore, the trainers' approach to the PI was to keep the process as flexible as possible to meet the needs of providers in a busy military clinic. The initial format of training was based on the extensive training experience of one of the authors (D. A. J.) who developed CAMS. This flexible approach was helpful in designing the ultimate form of training, but also may have introduced some ambiguity for providers.

The biggest problem that plagued each phase of training was related to technology. The training team decided to develop the digital eSSF, with the hope of potential ease of use in administration and the collection of long-term outcome data. However, the beta version of the eSSF that debuted during the first orientation training proved to be more cumbersome for providers than expected. It required a multistepped procedure for converting SSF data into a PDF that could then be cut and pasted into the electronic medical record. Providers in the initial training experienced frustration with the system and the transfer of the document, which produced a negative perception of the eSSF. Providers' comments were used to refine the system and it was later presented in the Phase III training. The results of the CAMS role-play training were somewhat mixed. Much of the role-play training slowed due to the technology complication which became a major distraction. Ultimately, within the PI effort, the decision was made to scan hard copy versions of the SSF into the electronic medical record due to the many complications associated with the eSSF.

The acceptance and routine use of CAMS in the targeted clinic was quite slow from the start and was also somewhat discouraging. There was both subtle and overt resistance to using CAMS consistently across clinic providers. Providers were encouraged to use the approach, gently noting it was clinic policy to be using the intervention. However, there were transitions in leadership

as well as internal systems issues that perhaps contributed to the modest start. For example, personnel changes due to deployment and staff turnover were challenging during the 3-year implementation of the PI. The clinic leadership changed 5 times, causing at least a temporary setback each time. Also, participation in the PI was initially mandatory for all providers. However, as leaders changed and reprioritized the PI, a reduction in staff adoption was experienced and implementation was voluntary by the end of the PI. In addition, significant momentum was lost during the training and implementation process due to unexpected challenges related to funding the contract, which resulted in the PI being interrupted for 6 months, thereby delaying the second orientation training. Reenergizing the PI proved to be challenging for the team. Nevertheless, we did eventually see the critical effect of 2 dedicated successive "champions" who led the clinic advisory team and sustained a focus on the use of the intervention. In addition, both department and internal clinic leadership maintained steady support for the use of the intervention.

Tracking PI Outcomes

An evaluation plan to assess both the process and outcomes of the PI initiative was constructed prior to its implementation. The process evaluation focused on documenting various portions of the PI initiative, including the clinic advisory team and Warrior Resiliency Program team meetings, the Southern Regional Medical Command organization supporting the PI, and consultation calls. These documents served as due diligence for the processes associated with the PI and reminded individuals of tasks due to the various groups involved. Additionally, the process evaluation was helpful in documenting the real-life difficulties in the implementation of the PI initiative.

An outcome evaluation plan was constructed which included a logic model that depicted the flow of resources, services, and measurable outcomes expected from the PI initiative as shown in the Figure. Components that were to be assessed were CAMS training, the eSSF, consultative support, and the postvention process. The use of CAMS was to be assessed by an increase in the frequency and quality of documentation of suicide risks and treatment course in the electronic medical record. Individual patient outcomes were to be documented by 2 standardized instruments. The Scale for Suicide Ideation (SSI) and the Outcome Questionnaire 45 (OQ-45), were given by the providers at both the beginning and end of treatment to assess CAMS effectiveness. The clinic advisory team assisted in determining how the instruments would be administered based on measures used in past research studies using CAMS,[20,22] as well as the time to administer and the training required for administration. While other outcome measurements were initially introduced, they proved to be too complex to complete given multiple personnel changes at the clinic and the organization facilitating the PI and the operational tempo of the clinic. The possibility of the active duty psychology technicians administering the measures was explored, however, due to their changing roles/responsibilities and obligations outside the clinic, they were ruled out as an option to relieve some of the time constraints of the providers. Another option explored for administration of these measures was to use them during patient triage, but providers reported that they would prefer to administer the measures in order to build rapport and obtain important data related to the service member's suicidality. In spite of great care in vetting the SSI and OQ-45 with the Clinic Advisory Team, providers did not feel they had adequate time to provide services and collect outcome data. The providers seemed to see a benefit to the administration of the measures beyond collection of data for the PI, and many reported that they would use them if allotted more time for their intake sessions with the service member. Unfortunately, due to the high workload, this was not feasible. Therefore, due to reality-based constraints, both instruments were dropped from the evaluation plan and a plan for qualitative evaluation through focus groups was developed.

At the end of the PI initiative, focus groups were held by a person not involved in its implementation. A total of 11 individuals attended 2 focus groups. Two of the individuals had recently been hired and were trained by a designee in the clinic. Focus group participants were asked about the training, their use of CAMS, the SSF and what they thought were most and least beneficial.

During these focus groups, the majority of individuals (63%) indicated relatively consistent use of the SSF, while 27% used it "here and there, but not consistently." When asked about their overall use of CAMS, few individuals reported using CAMS regularly according to the original protocol. Participants indicated that the SSF did not work well in triage with high risk patients because of the time needed to perform an intake. A familiar, shorter screening was preferred during triage as the first choice for individuals who were likely to be hospitalized.

Mixed opinions regarding training were expressed in reviews. Some individuals who attended the focus group indicated the training was long and too basic for senior clinicians. Most participants indicated the eSSF training time was wasted because it was never implemented. Other participants were pleased with training, indicating it was "clear and precise and people understood everything

Process	Outcomes	
	Activities	Participants
What we invest:	What we do:	Whom we reach:
Providers and staff at the Behavioral Health Clinic Dr Jobes and Catholic University of America team Facilitating organization staff Facilitating organization funding CAMS book	Needs assessment Sensing sessions CAMS training Risk assessment Treatment Documentation Create electronic version of the SSF Documentation Support Consultative support Postvention process	Behavioral health providers Soldiers (all components) Program stakeholders (eg, family members)
Effects		
Short-term	Medium-term	Long-term
What are the expected short-term effects and measures?	What are the medium-term effects and measures expected one to 2 years out?	What are the long-term effects and measures expected 2 to 5 years out?
Changes in practice Improved accuracy of risk assessment Increased clarity in treatment planning Resolution of suicidal crisis Decrease no-show rate Increased documentation of risks and treatment course Increased sense of provider support Use and satisfaction with consultation service Decrease in provider anxiety Increased confidence in how leaders handle deaths by suicide	Increased competence in assessment and treatment of suicidal behaviors Decreased hospitalization Increased tracking of disposition Increased clinical outcome tracking Decreased perceived organizational barriers Increased perceived provider support	Increase quality of care Decreased cost of care Improved professional quality of life

The outcome evaluation plan logic model depicting the flow of resources, services, and measurable outcomes expected from the collaborative assessment and management of suicidality (CAMS) PI initiative.

Mission: Pilot test and develop a military-specific, evidence-based, best-practice framework for suicide risk assessment, treatment, and documentation

that was being taught." Participants' feedback on the SSF was largely positive. Participants indicated that using the form was good for "not getting lost in drama or stories," but helped focus quickly on the drivers of suicidal ideation. They also commented that collaboration with the patients increased because they signed and dated the form, "validating the information and showing them exactly why they are in treatment." One person said the form was useful beyond the suicidality to "speed up treatment." Individuals also gave largely positive feedback on the consultation calls, primarily for meeting an area of unmet need at the clinic. Some appreciated the consultant's acknowledgement of the difficulty of the cases and found suggestions he gave helpful. Others indicated that it was most valuable to discuss cases with their colleagues since "we don't get to do that very often anymore with the amount of work load given."

Sustainment of PI Initiative

A plan for sustainment of the new process for the use of the CAMS framework was made at the beginning of the PI initiative. Clinic protocols and SOPs were developed for each area of use for CAMS in the clinic including triage, intake session, follow-up visits, termination sessions, and hospitalization. These SOPs defined roles for the leadership, providers, and other clinic staff, including the front desk staff, in supporting the use of CAMS within the clinic. The SOPs were intended to provide guidance to current staff as well as new staff, and be flexible enough for the Clinic Advisory Team to review and to adapt as needed over time. A model for ongoing training of new staff and refresher training was envisioned to be completely managed within the clinic by two volunteers or selected clinic staff members. However, because of staff changes and the waxing and waning

support for the PI initiative, the training plan originally developed as a train-the-trainer model, did not materialize. Instead, a clinic staff member involved in implementation in the clinic used the videotaped orientation training to informally instruct new employees.

Lessons Learned for a PI Initiative in a Military Behavioral Health Clinic

With strong leadership and sustained focus over time, providers eventually began using CAMS with their suicidal Soldiers and realizing clinical success. Within 6 months of formal implementation, a robust clinical consultation meeting evolved where the majority of providers were using CAMS, presenting cases, and benefitting from the constructive and collegial phone meeting with members of the external consultation team. Critically, the explicit and implicit "blessing" of key, respected staff members seemed to markedly turn the tide from resistance to acceptance for the majority of providers in the clinic to use CAMS or at least be supportive of its use.

With regard to tracking patients with suicide risk, ideations, and/or attempts, clinic leadership instituted the required use of the high-interest patient database for all Soldiers seen within the clinic experiencing suicidal ideation, suicide attempts, or hospitalization. The policy also specified that Soldiers receiving CAMS would be included and tracked in the database. The high-interest patient database, along with the CAMS documentation placed directly in the electronic medical record, provided the clinic with a method to track and monitor Soldiers who have any inclinations or concerns related to suicide.

The program evaluation was designed to generate simple and flexible lessons learned. A PI initiative is not a randomized controlled trial, therefore, evaluation methods must be as fluid as the process of the initiative itself. Although more systematic evaluation methods were preferred, given the circumstances it was necessary to adapt. The feedback resulted in the creation of an updated version of CAMS training for the Army which is currently being implemented in another Army BH clinic. As a result of provider feedback, 2-day training consisting of orientation of CAMS and role-playing training was confirmed as sufficient for most providers to obtain basic competence in delivering CAMS.

In terms of its actual clinic use, there were internal adaptations in the use of CAMS that occurred naturally as the clinic staff and culture became more interested in using the approach. For example, there were cases where clinical social workers (who are assigned to handle walk-ins) would initially engage a suicidal Soldier in CAMS for a few sessions while waiting for psychotherapy (provided by psychologists) openings in the schedule. When a walk-in who was initially engaged by a CAMS-using clinical social worker began psychotherapy sessions, the transition to ongoing CAMS care with the new provider was readily facilitated because both the social worker and psychologist were familiar with treatment. In one case, the Soldier proudly "presented" the CAMS-guided SSF work that he done with his walk-in social worker to his new psychologist psychotherapist, who was of course quite interested and receptive. The process under which all clinic providers worked from the same "sheet of music" proved to be highly effective for a number of cases within this clinic's system of care.

Finally, it is interesting to note the success was achieved in a separate Army BH clinic that was added near the end of the CAMS familiarization training . Even though members of this clinic staff received only the one-day orientation training (ie, they did not receive the role-play training and were not a part of the follow-on consultation calls), they had virtually adopted the use of CAMS by every provider within 6 months following the training. This particular clinic had received much less formal focus within the larger PI effort and limited consultation from the Warrior Resiliency Program team, but nevertheless enthusiastically adopted the CAMS strategy. This apparent success was attributed to strong internal leadership and an internal clinic culture that readily embraced evidence-based practices and worked with sensitivity to being "second guessed" in a root cause analysis should a suicide occur.

Army suicide prevention emphasizes the identification of Soldiers at risk and connecting them with helping resources, primarily Army BH. Although Army Medicine functions as a single healthcare system, there are few policies that standardize processes for BH providers with regard to the clinical management of suicidal behaviors among beneficiaries, of whom Soldiers are the primary patients. As a result, there is a need for knowledge regarding the application of an evidence-based treatment for suicide within individual Army BH clinics. The Process Improvement Initiative discussed in this article provided a unique insight into creating systematic change in a military behavioral health clinic and provided knowledge regarding perspectives of Soldiers and BH providers as well as areas of need. The PI initiative also showed the potential to enhance the clinical standard of care through improved clinical processes for suicide risk mitigation with the intervention of a suicide-focused clinical treatment tailored for the Army population. The use of CAMS offers providers a framework for managing a patient's symptoms related

to the patient's suicidal ideations or attempts, a process for documenting the risk , and the development of an infrastructure for support with the clinic. Due to the intricacies encountered during the implementation of this PI initiative, the lessons learned from this project were key in the development of the design for the randomized clinical controlled trial using CAMS implemented at Ft Stewart, Georgia. Future possibilities for the development of PI projects for implementation at other installations such as Darnell Army Community hospital at Ft Hood and Walter Reed Army Medical Center have been under consideration as well.

Areas of future research include examining the use of the PI to determine if it reduces suicide scores or reduces the need for "curbside consultations" with a military population. Real-life constraints limited this PI project from collecting data within these areas. Working with the Air Force, Jobes et al[21] found reductions in emergency departments and primary care visits were related to using CAMS. Their findings support an examination of the clinic staff to investigate if the adoption of CAMS bolsters the moral of the clinic and/or increases effective and efficient provision of service as an important area for future research.

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Mild Traumatic Brain Injury in the Military: Improving the Referral/Consultation Process

MAJ Charles Watson, AN, USA

Abstract

Background: Clinical practice inconsistencies in the identification and referral of patients suspected of mild traumatic brain injury have been identified within primary care clinics in a major military medical center.

Objective: To determine if the use of an overprinted communication tool would improve the referral/consultation process between identified clinics in one Army medical center.

Design: The consultation/referral process was evaluated following an educational presentation regarding the use of a situation, background, assessment, and recommendation (SBAR) communication form. Data were collected from consultation charts before and after two months of use of the SBAR communication form.

Results: The communication tool improved capture of dates of injury, prior treatment, history of testing, patient education, and request for therapy.

Conclusion: Findings from this project demonstrated that a communication tool such as the TBI-SBAR would be beneficial for use in primary care clinics.

Traumatic brain injury (TBI) is an increasing health problem with approximately 1.4 million people affected annually.[1] Of those affected, nearly 75% are considered to have a mild TBI.[2] Also known as a concussion, mild TBI can develop into significant life-long impairment.[3] The Centers for Disease Control and Prevention (CDC) estimated the national cost at nearly $17 billion ($10^9$) each year, with 10% to 15% of patients diagnosed with mild TBI suffering from persistent disabilities. The US Public Health Service estimated 14% to 20% of military service members have sustained TBI since the beginning of the Iraqi and Afghanistan wars.[4] Of those military service members sustaining TBI from combat, mild TBI is estimated to encompass about 11% of these injuries or about 75% of all head injuries. These percentages are comparable with nationally reported TBI prevalence data for civilians. Based on these statistics, mild TBI has become the signature injury of the 21st century Middle East wars.[4]

In the military, patients are generally identified for TBI and referred by their primary care provider to a specialist. Communication, collaborative teamwork, and patient-centered approaches are critical to patient safety and effective treatment for TBI.[5] Novak and Fairchild[6] reported almost two-thirds of adverse events in hospitals are related to communication deficiencies. In a meeting with A. Bowles, MD (February 27, 2013), lack of communication was identified in one of the military's largest medical treatment facilities between primary care providers and specialists when patients with suspected mild TBI were referred for further evaluation and treatment. Dr Bowles cited poor communication with behavioral health, a difference in the understanding of concussion, and lack of agreement in fundamental philosophies for care as common communication deficiencies in the military healthcare system.

In general, Meester et al[7] cited The Joint Commission (TJC) as also reporting effective communication among healthcare providers as being poor; moreover, TJC encouraged improvement in communication between providers to reduce potential errors and improve patient outcomes. The use of a situation, background, assessment, and recommendation (SBAR) tool may be useful in organizing information and providing cues for communicating what is important between medical providers.[8] The SBAR is a communication tool that can be applied to many situations between healthcare professionals to facilitate an exchange of needed information.[9] The SBAR generally provides information as to what is happening, pertinent background information about the situation, and a relevant health assessment, and offers potential solutions for consideration.[9] Furthermore, Mitchell et al[10] developed an assessment tool based on the SBAR format that was validated to identify and improve the overall quality and educational value. This tool contained 3 successful iterations with internal

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consistency and interassessor reliability improving with each iteration.[10] The communication deficiencies within the military medical facility, particularly when a referral is made by the primary care provider to a specialist, may benefit from the use of a simple communication tool such as an SBAR. The University of Missouri and Brooke Army Medical Center Institutional Review Boards both viewed this as a Quality Improvement project and exempted it from human subjects review. The purpose of this quality improvement project was to determine if using the SBAR tool would improve communication during the referral process for mild TBI between primary care and specialty clinics in one Army medical center.

Background

Traumatic brain injury occurs when an external force or rapid acceleration/deceleration force causes damage to the brain. This can be the result of an indirect force such as a blast exposure or from a direct force such as a blow to the head.[3] Traumatic brain injuries are acute processes with pathophysiological cascades that can be initiated within minutes. Therefore, the efficacy of many neuroprotective agents administered before or within 15 minutes after an injury makes it time-sensitive for implementing treatments.[11] The effect of resultant neurometabolic changes can cause a disturbance in the brain's function manifested as impairment in cognitive function and/or physical function.[12] Bryan and Hernandez[13] reported a significantly slower reaction time from those suffering from a mild TBI and a slower reaction time from those who also suffer from headaches and psychological symptoms as compared to those without any head trauma or illness. In general, mild TBI symptoms usually occur immediately or within days of the event but resolve within 3 months postinjury.[14] These mild symptoms, or the immediate lack thereof, may make it difficult for primary care doctors to initially recognize and begin treatment. Additional diagnostic testing may enable primary care doctors to make more informed decisions when deciding care for patients suffering from any head trauma. For patients undergoing acute neuroimaging as part of their initial evaluation, the computed axial tomography scan findings on the day of injury may provide important baseline information.[15]

Boake et al[16] reported that the frequency of postconcussive symptoms (PCS) in patients without obvious brain injury supported the theory that symptoms of PCS may not be sufficient to make the diagnosis of mild TBI. In another study, a change or lack of symptoms in individuals with PCS and PCS-like symptoms was found not to have a correlation with mild TBI.[17] Posttraumatic headaches (PTHA) have also been studied. Bryan and Hernandez[13] reported a longer loss of consciousness (LOC) was associated with increased PTHA severity, whereas, in former studies, longer LOC was associated with a greater severity of brain injury. This suggests that a greater LOC may be more associated with a more severe TBI versus a mild TBI.

The CDC[3] reported better outcomes when a mild TBI was diagnosed early, making it imperative that communication between primary care and specialty providers for TBI be rapid and efficient. Although much has been done to standardize the process for communication, healthcare providers continue to have difficulty in communicating effectively and efficiently.[18] There are various ways of communicating between nurses, providers, and ancillary staff, including verbally, written, and electronically. The SBAR was developed by the military, adapted by the airlines, and used initially in the Kaiser Permanente healthcare system. Evidence shows that SBAR may be applied to communication between providers in almost any healthcare setting.[9] The tool acknowledges and defines the current situation, provides important background information, enhances a focused assessment, and offers recommendations for consideration.[9] Renz et al[8] found the implementation of the SBAR coupled with targeted training on its use improves satisfaction with the communication by standardizing important required information and providing structure for the communication of this information.

The SBAR provides a timely and pertinent communication narrative blending nursing and physician communication documentation techniques.[19] An SBAR communication tool may enhance communication of pertinent information from a primary care provider for referral to a specialist. For example, MacGregor et al[20] reported personnel with symptoms of mild TBI were much more likely to report headaches, memory problems, tinnitus, and dizziness compared to those personnel without head injuries. It is important for that information to be identified by the primary care provider to mental health specialists, neurologists, and neuropsychologists as part of a referral.

Nurses, physicians, and ancillary healthcare providers are frequently in situations requiring accurate and timely communication.[19] As the SBAR has been primarily used by nurses, lack of education about SBAR among physicians has resulted in inconsistencies in its implementation and sustainability.[21] Fay-Hillier et al[5] developed an instructional guide that included the purpose, objectives, goals, and directions for a simulation experience involving the use of an SBAR. Simulation exercises and structured opportunities offered useful feedback

in improving the performance, confidence, and experience of those who performed recommended exercises.[22]

In healthcare settings, Kotter and Cohen[23] recommended beginning with the formation of a healthcare team to assess and discuss the significance of the communication problem between departments. Interventions and outcomes can be developed from identification of specific problem areas.[24] Next, the goal of the intervention or outcomes should be established and communicated, the intervention implemented, performance feedback provided, the new process or intervention monitored for improvement, and, finally, integration of the intervention into standard practice with ongoing monitoring.[23]

In summary, it is notable that there are a host of issues at work in TBI, such as postconcussive syndrome, posttraumatic headaches, and ineffective communication between primary care providers and specialists. Since patients with mild TBI do better when diagnosed early, any action that leads to quick, effective communication is welcomed.[3] Evidence shows that implementation of the SBAR paired with targeted training on its use improves communication (rate and effectiveness) by providing structure and standardization of the information being communicated.[8]

Assessment of the Problem

The plan-do-study-act cycle recommended by the Institute for Healthcare Improvement was used for this quality improvement project.[25] Thirty-five consultation charts to the TBI clinic were initially reviewed to determine what information that may be important for the referral consultation was provided consistently or not provided. The pre-SBAR charts were reviewed between October 1, 2013, and November 30, 2013. A meeting was held with the Chief Medical Officer for the TBI clinic and the provider staff to review this information and determine what information would be most helpful for optimum communication from the primary care provider to the TBI specialist.

Strategies for Quality Improvement

An SBAR tool, presented in the Figure, was created based on peer review from the above mentioned meeting and published evidence. Use of the TBI-SBAR tool by primary care clinics for referrals made to the TBI clinic was directed.

An initial education session was held in December 2013 to familiarize physicians, nurse practitioners, and physician assistants with the use of the TBI-SBAR and the rationale for its use. The TBI-SBAR tool was implemented between January 1, 2014, and March 2, 2014. During that time, a biweekly site visit was conducted to answer questions or concerns that providers had regarding implementation of the tool. A retrospective chart review regarding use of the tool and appropriateness of the referral was completed after the implementation period.

Post Improvement Implementation Results

Information was collected about the documentation of communication between providers before the SBAR education intervention (pre-SBAR) and after the SBAR classes (post-SBAR). Information included the diagnosis developed by the primary care provider, the reason for the referral, the date of injury, any prior treatment, any history of prior testing, any patient education provided by the primary care clinic, and if a request for therapy by the referring providers (physicians, physician assistants, and nurse practitioners) was recorded. A referring diagnosis was noted. No referring diagnosis was noted as such. In regards to reasons for referrals, it was noted whether or not there was an actual reason for the referral, and exactly what that reason was. Additionally, any dates of injury, prior treatment, complication with treatment, history of testing, patient education provided by the primary care clinic, or request for therapy by the referring provider were all noted only as being present or absent. No detailed mention of these data was needed, only the presence or absence of each element was recorded.

The χ^2 test for independence was used to compare the documentation of communication of important information in charts before and after TBI-SBAR implementation. Statistical significance was set at. As shown in the Table, 35 charts were reviewed pre-SBAR implementation and 27 reviewed post-SBAR implementation. The Table details the means and standard deviations between pre-SBAR and post-SBAR implementation. Patient education provided by the primary care clinic was the only statistically significant factor at the P=.05 level (χ^2=14.18, df=1). Communication of any patient

Results for Pre-SBAR and Post-SBAR Implementation Chart Reviews (N=62) Including Means and Standard Deviations for Each Category

Category	Pre n	Post n	Pre mean (SD)	Post mean (SD)
Diagnosis present	33	25	0.94 (0.24)	0.89 (0.31)
Reason for referral	35	28	1 (0)	1 (0)
Date of injury	19	21	0.54 (0.51)	0.75 (0.44)
Prior treatment	10	13	0.29 (0.46)	0.89 (0.31)
History of testing	7	7	0.2 (0.41)	0.25 (0.44)
Patient education*	0	3	0 (0.11)	0.11 (0.31)
Request for therapy	34	28	0.97 (0.17)	1 (0)

*Statistically significant. Patient education provided by the primary care clinic was more likely to be communicated to the TBI clinic and was statistically significant at the P=.05 level (χ^2=14.18, df=1).

SBAR Patient Transfer Communication Tool: Mild Traumatic Brain Injury Services

Report given by: _____ Time: _____ Phone: _____

Report received by: _____ Phone: _____

S — Situation:

- ☐ Patient name
- ☐ Age/race/gender
- ☐ Chief complaint
- ☐ Provisional diagnosis
- ☐ Reason for referral
- ☐ Referring agency

B — Background:

- ☐ Date of injury
- ☐ Type of injury
- ☐ Previous testing (psychiatric testing, labs, radiology, etc)
- ☐ Treatment history (medications, therapy, hospitalization, etc)
- ☐ Patient education
- ☐ Complications with treatment

A — Assessment:

Mild TBI Symptoms

Early

- ☐ Headache
- ☐ Dizziness or vertigo
- ☐ Lack of awareness
- ☐ Nausea with/without memory dysfunction
- ☐ Vomiting

Late

- ☐ Persistent low grade headache
- ☐ Lightheadedness
- ☐ Poor attention/concentration
- ☐ Excessive fatigue
- ☐ Bright light intolerance
- ☐ Loud noise intolerance
- ☐ Tinnitus
- ☐ Anxiety
- ☐ Depression
- ☐ Irritability/low frustration tolerance

PTSD Symptoms

Avoidance

- ☐ Emotionally numb
- ☐ Avoidance of enjoyable activities
- ☐ Hopelessness
- ☐ Memory problems
- ☐ Concentration problems
- ☐ Relationship problems

Anxiety and Increased Emotional Arousal

- ☐ Irritability
- ☐ Overwhelming guilt or shame
- ☐ Self destructive behavior
- ☐ Sleeping difficulties
- ☐ Easily startled or frightened
- Hallucinations

R — Recommendation

If provider has assessed using all of the above mentioned tools and patient meets criteria for mild TBI, then refer patient to TBI clinic and request specific treatment or additional diagnostics (ie, request for speech therapy or request for additional diagnostic testing to R/O mTBI).

If provider has assessed using all of the above mentioned tools and patient does not meet criteria for mild TBI, then return patient to PCP for additional diagnostic workup or refer patient to appropriate specialty clinic for further definitive care based on diagnostic criteria met.

education given by the primary care provider depends on the use of an SBAR. Despite evidence of improved communication with the other variables, they were not found to be statistically significant.

Comment

This project demonstrated improved documentation and communication between pre-SBAR and post-SBAR implementation for 5 of the 7 items of important information: the date of injury, any prior treatment, any history of testing, any patient education provided by primary care clinics, and a request for therapy by the referring providers (physicians, nurse practitioners, and physician assistants). Based on feedback from the TBI specialists, documentation of patient education given in the primary care clinics was thought to be an important

element of information for the TBI clinic. Prior to SBAR implementation, documentation of this information was nonexistent. The implementation of an SBAR demonstrated a statistically significant improvement in communication of this information.

According to the data, 54% of charts pre-SBAR captured dates of injuries, whereas 75% captured these dates post-SBAR. Prior treatment was documented 28% of the time in pre-SBAR charts, whereas they were seen in 46% of the post-SBAR charts. A history of testing was only visible in 20% of the pre-SBAR charts, while 25% of the post-SBAR charts had this information. Lastly, a request for therapy was made in 97% of the pre-SBAR charts, and all 100% of the post-SBAR charts contained these requests. It is evident that the use of the SBAR, while not always statistically significant, did provide a positive improvement over the previous charts' histories. The SBAR may have served as a guide to improving documentation as well as increasing provider awareness on what is critical for TBI clinic specialist to know.

Lessons Learned

Lessons learned from this project include building in time to collect more information from more charts. Since a validated clinical tool for screening of mild TBI was not used, referrals from the primary care provider to the TBI specialist was subjective and may have been dependent on provider training when initiating the referral. Current clinical tools used to detect mild TBI are held to subjective reports of symptoms and short cognitive exercises but offer little objective evidence for clinical decisions.[26] The diagnosis of mild TBI is challenging due to a variety of symptoms including cognitive, physical, and/or behavioral, and may be confused with other medical issues.[27] The presence of comorbid conditions such as posttraumatic stress disorder (PTSD) may have been a confounding factor. Given the existing low detection rate and undertreatment of people with PTSD, implementation of PTSD screening tools in general mental health treatment settings are recommended[28] but were not the focus of this study. Finally, Adams and Osborne-McKenzie[18] noted difficulty with consensus in SBAR categories for communicating important information, furthering the notion that tailoring SBARs to various situations may be difficult. Tailoring the SBAR to this specific area of specialization presented challenges based on a lack of consensus between departments and providers as to what should be included.

Implications and Recommendations for Practice

This quality improvement project used existing evidence that there are communication problems between primary and specialty providers in referring potential TBI patients, selected the SBAR communication format, implemented it, and measured whether it improved documentation of key elements that should be communicated in TBI referrals. The SBAR intervention seemed to improve the referral/consultation process by identifying key elements of information in the TBI referral. An SBAR tool is recommended for use when communicating between the primary care provider and a specialty provider.

The TBI-SBAR tool demonstrated improved communication between the primary care clinic and the TBI clinic. Improving communication may have enhanced the primary care provider's knowledge of important information needed by the TBI specialist and allowed for more efficient use of the TBI specialist's time during the consultation. This was achieved by the reduction in time spent by the TBI specialist contacting the referring provider for clarification of referring needs. Consultation with the Performance Improvement Research Assessment Program team enhanced implementation of the process. Involvement of quality improvement experts is recommended when implementing process change between departments.

Conclusion

Findings from this project demonstrated that use of a communication tool such as the TBI-SBAR increased the frequency that key elements were documented between 3 primary care clinics and the TBI clinic located within a large Army medical center. Other healthcare settings may benefit from improved communication, particularly between primary care and other specialty services. Enhanced communication may reduce errors and improve patient outcomes.

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Directorate of Treatment Programs: Providing Behavioral Health Services at the US Disciplinary Barracks

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The number of inmates with mental health disorders incarcerated in the US prison system has grown into a national public health crisis. The literature reports that 15% to 24% of US inmates have a severe mental illness,[1-5] and according to the Bureau of Justice Statistics, over 1 million inmates are diagnosed with at least one mental health condition.[3] Several studies identified multiple factors that have contributed to the growth of this epidemic.[2-4]

The availability of new antipsychotic medications starting in the 1960s made it feasible to manage many psychiatric disorders on an outpatient basis, leading to the argument formulated by prominent members of the psychiatric community that discharging patients from inpatient hospitals and providing community-based outpatient care represented a humane alternative to overcrowded and understaffed institutions.[1,2,4,6] As a result, a national movement arose that resulted in the mass closing of public mental health hospitals.[1,2,4,6] However, the new psychiatric paradigm of closing state hospitals and managing psychiatric patients via outpatient clinics and halfway houses was, in most cases, not supported by the necessary resources to provide adequate care for the number of patients released from inpatient facilities.[1,2,4,6] Additionally, the health maintenance organization (HMO) model evolved into the primary health delivery model in the United States, requiring patients to use network providers covered by health insurance to receive medical care. However, HMO health insurance policies provide more restrictive coverage for individuals with mental health disorders and limit the enrollment of psychotic patients in private hospitals.[1,2,4,6] Finally, civil commitment laws became more restrictive, making it difficult to involuntarily medicate or hospitalize individuals with severe mental illness.[1,2,4,6] The aforementioned factors have culminated in a revolving-door phenomenon resulting in many individuals with mental health disorders moving continuously between homelessness and the criminal justice system.[1,2,4,6,7]

The large numbers of incarcerated individuals with mental health disorders leads to the logical assumption that prison systems should incorporate quality mental health assessment and treatment as a primary component of the inmate's rehabilitation process. Hills et al[8] describes the optimal correctional mental health system as a continuum of services which include inpatient and outpatient services, crisis intervention programs, and 24-hour on-call access to mental health services. Mental Health treatment modalities should include individual and group treatment and access to psychotropic medications.[8] However, an abundance of literature reports a large disparity in the quality of correctional mental health services provided in US prisons.

In most correctional facilities, significant shortcomings in both the diagnosis and treatment of inmates with mental illness have been identified.[1,2,4,6-8] For example, Hornung et al[9] surveyed 41 prison systems assessing mental health services offered to prisoners. They found 15 systems had treatment protocols or guidelines for the management of inmates with mental illness, 12 had no protocols, and the remainder did not respond to the question. Additionally, the National Commission on Correctional Health Care conducted an analysis of mental health care in the US Federal Prison System in 2002. The study concluded that most prisons ''fail to conform to nationally accepted health care guidelines for mental health screening and treatment.''[5] As a result, inmates with mental health disorders are not receiving adequate mental health services during incarceration, resulting in a disproportionate burden of adverse clinical outcomes, social isolation, and ultimately criminal recidivism among this already disadvantaged population.[1,2,4-9]

This article discusses the comprehensive mental health services offered to inmates incarcerated at the United States Disciplinary Barracks (USDB) Fort Leavenworth, Kansas and how those services are a critical component to the overall success of the USDB mission. The

discussion includes the types of mental health disorders experienced by inmates at the USDB and how those disorders contribute to the risk the inmate poses both inside the facility and to the community at large. We detail the role of the Directorate of Treatment Programs which initiates processes to classify an inmate's risk, identify their specific behavioral health needs and provides rehabilitative programs and mental health interventions to mitigate those risks, and increase the likelihood that an inmate will successfully integrate back into the community upon release.

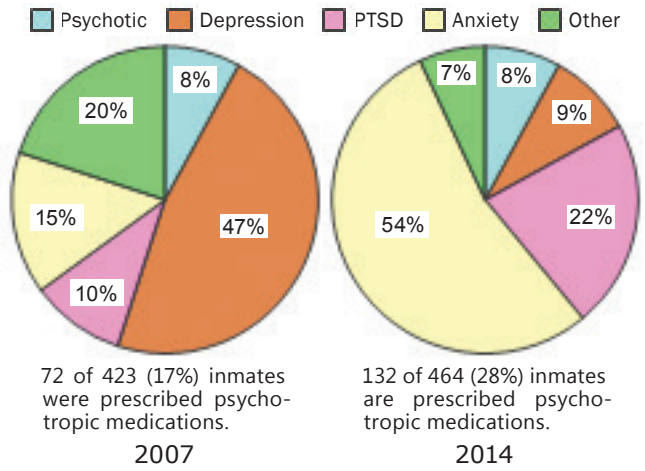
Background

The USDB at Fort Leavenworth is the center of correctional excellence for the US Army. Established in 1874 by Federal law, the USDB is the oldest penal institution in continuous operation in the Federal system and is the only maximum security correctional facility in the Department of Defense.[10] In 2002, a new state-of-the-art, 515 bed facility became operational with the capability of incarcerating US military prisoners from the Army, Marine Corps, Navy, Air Force, and Coast Guard sentenced to long terms of confinement.[10] Since January 2013, inmates confined at the USDB must have a sentence length to confinement of more than 10 years. The type of crimes committed by inmates housed at the USDB range from murder, kidnapping, robbery, assault, sexual offenses, and property offenses to drug offenses. Currently, 95% of the inmates incarcerated at the USDB are serving a sentence for a violent or sexual offense.* The USDB mission is to conduct correctional and treatment programs that are intended to maintain good order and discipline in the facility and reduce recidivism upon release. The USDB prioritizes educational, vocational, and behavioral health programs that prepare inmates to become self-reliant, trustworthy, and productive members of society. The Directorate of Treatment Programs (DTP) at the USDB is essential in accomplishing this mission.

The DTP at the USDB is comprised of a multidisciplinary team which includes one psychiatrist, 3 psychologists, 8 social workers and 15 behavioral health specialists (military occupational specialty 68X) assigned to 3 divisions: Assessment, Rehabilitation, and Mental Health. Collectively, DTP offers a rehabilitation system which accurately defines the risk imposed by an inmate on the institution and society, and provides treatment programs which mitigate that risk. The DTP presents all USDB inmates with the opportunity to participate in a variety of behavioral health programs that will enable them to successfully adjust to a correctional environment and reduce the likelihood that they will reoffend upon release.

*Source: USDB Inmate Database, June 2014

Historically, inmates have presented with depressive disorders as the predominant diagnosis at the USDB. However, over the last 7 years, a transformation of inmate psychopathology within the institution has occurred, as illustrated in the Figure. The increase in the proportion of inmates diagnosed with posttraumatic stress disorder (PTSD) can be attributed to an increase in the number of inmates with combat experience, currently 53%. Otherwise, the USDB population mirrors the population of the United States in a shift from mood disorders to anxiety disorders being the predominant behavioral health concern.[11]



Comparison of Psychopathology Diagnoses in the USDB Population, 2007 and 2014.
Source: USDB Inmate Database, June 2007 and June 2014.

The DTP is responsible for assisting all inmates with the adaptation to confinement, often a challenging transition. Inmates adapting to prison can experience dysfunctional patterns of thinking and acting that make postconfinement adjustment difficult and increase the likelihood they will reoffend.[12] Service members who enter prison often present with preexisting behavioral health concerns, including, at a minimum, impaired insight, deficient judgment, and poor problem solving. Inmates must then adapt to confinement. While most inmates are able to effectively adapt to the correctional environment, there are some inmates who are more vulnerable to the stressors of confinement and thus more likely to act out in self-injurious, violent, or disruptive ways. The majority of USDB inmates respond positively to the standard behavioral health treatment regimen. However, 30% of the USDB inmate population present with significant psychopathology that require an abundance of resources to manage and treat as shown in the Figure. The psychopathology of these inmates increases the difficulty of mitigating their risk through an effective rehabilitation process. Thus, it is critical to rapidly

identify which inmates may have difficulties adapting to confinement. The DTP Assessment Division is tasked with the important and complex process of identifying inmate risk and recommending individual rehabilitation treatment plans.

DTP Assessment Division

Classifying inmates in accordance to potential risk is twofold. The first step is to identify internal risk, the risk an inmate poses to himself, other inmates, and the USDB staff. Accurately identifying internal risk is crucial to maintaining the safety and security of the facility. The second step is to identify external risk, the risk an inmate poses to the greater community. Accurately identifying external risk supports recommendations on parole, clemency, and conditions of release and improves the safety of the community. The assessment process as a whole fosters appropriate adaptation to the correctional environment and will ultimately increase the potential for inmates to experience a successful transition back into society.

Assessing a new inmate's internal and external risk typically begins within 2 hours of the inmate's arrival at the USDB. The DTP Assessment Division conducts an initial behavioral health triage to ensure the new inmate is not experiencing current suicidal or homicidal ideations, or psychotic symptoms, as well as determining whether he is at above average risk to be a victim or perpetrator of sexual assault within the facility. Additionally, the triage identifies whether the inmate has a history of mental illness and/or a current psychiatric diagnosis and whether he is currently prescribed psychotropic medications. If any of the above conditions are reported, the Assessment Division immediately implements an appropriate crisis management plan until the reported issues are resolved.

Upon completion of the initial triage, new inmates undergo a 3-week reception process allowing the DTP Assessment Division to conduct an in-depth evaluation of the inmate's risk factors and behavioral health needs. A full psychosocial interview is conducted to explore the inmate's perception of the circumstances resulting in incarceration and identify significant psychological events across the inmate's developmental lifecycle from childhood to the present.

In conjunction with the psychosocial interview, psychological testing is used to assess the inmate criminologically. The DTP Assessment Division administers Robert Hare's Psychopathy Checklist-Revised (PCL-R).[13] The PCL-R is a diagnostic tool used to rate a person's psychopathic or antisocial tendencies. Psychopaths use charm, deceit, violence, or other methods to ruthlessly prey on others to get what they want, making them extremely dangerous in a correctional environment. The PCL-R consists of a 20-item symptom rating scale that allows qualified examiners to compare a subject's degree of psychopathy with that of a prototypical psychopath. Each item is scored 0, 1, or 2 with the overall score ranging from 0 to 40. Any score of 25 or higher meets the criteria for dangerousness. A score of 30 or higher indicates that the individual is a psychopath. Additionally, the USDB has found a correlation exists between inmates with a PCL-R score of 20 or higher and acts of misconduct and disruptive behavior within the institution. Thus, inmates that have a high enough level of psychopathy are assessed as having higher internal risk.

In addition to the PCL-R, the DTP Mental Health Division administers a battery of psychological tests during the reception process to assess the inmate's internal and external risk. Psychological testing includes the Shipley-2, a screening measure for intelligence,[14] and the Aggression Questionnaire, which measures the many facets of aggression such as verbal, physical and indirect aggressive behavior as well as anger and hostility.[15] Also, the Substance Abuse Subtle Screening Inventory[16] and the CAGE substance use questionnaire[17] are administered to determine the likelihood that an inmate suffers from a substance use disorder and are used to make recommendations as to whether the inmate needs substance abuse treatment. This is particularly important when substance use played a role in the inmate's confining offenses as ongoing substance use problems can affect risk for reoffense upon release from confinement. Because 53% of the inmates have been deployed to a combat zone,* the PTSD Checklist is administered to identify treatment needs associated with PTSD.[18] Finally, the Personality Assessment Inventory (PAI) is administered to get a broad-brush picture of traits and symptoms associated with a variety of psychological disorders, such as psychotic symptoms, personality pathology, mania, anxiety, depression, somatic complaints, physical aggression, suicidal ideations, as well as general stress and perceived social support. Additionally, the PAI has several validity scales that inform the interpreter whether the inmate is attempting to present himself in an overly positive or negative light.[19] The validity scales assist DTP in determining the likely veracity of the inmate's self-report of his problems.

The data collected through the interviews and psychological testing is further used by the DTP Assessment Division to determine the inmate's appropriate custody

*Source: USDB Inmate Database, June 2014

grade and classification. The USDB manages inmate custody and classification through an objective, points-based classification system. The system is based upon risk factors that have been codified into a mathematical formula. The risk factors are calculated into custody points that determine the custody grade of each inmate. Custody grades within the USDB consist of Maximum Custody (MAX), Medium Custody (MED), Minimum – Inside Only, Minimum Custody, and Trusty Custody. Most inmates entering the facility are classified as MED which gives them the opportunity to integrate into the facility, learn about the inmate subculture, and adjust to long-term confinement. Custody elevation is earned through reduction in custody points (decay of disciplinary points, time served, and completion of treatment).

By the end of the reception process the DTP Assessment Division has created a formal risk assessment, an initial treatment plan, and a Risk Assessment Management Plan (RAMP). The risk assessment identifies the inmate's internal and external risks. The initial treatment plan identifies his correctional, behavioral health, and rehabilitation needs and recommends interventions to meet those needs. Additionally, the RAMP outlines possible custody elevation dates, initial and future job assignments, and tentative dates to start the formal rehabilitation groups. Before leaving reception, the inmates meet with their temporary case manager to review their RAMP. The inmates will also be assigned a permanent case manager from DTP rehabilitation division who will assist them in successfully navigating the rehabilitation process.

DTP Rehabilitation Division

Upon completion of the reception process, inmates assigned to a custody level other than MAX are elevated to the general population housing unit. At this time, inmates meet with their assigned DTP Rehabilitation Division case manager to begin their long-term rehabilitation process. Inmates are assigned case managers based on their behavioral health needs. If an inmate has significant psychopathology or presents with complex problems, he will be assigned to a credentialed provider for treatment; all other inmates will be managed by a behavioral health specialist. The role of the case manager is to coordinate treatment plans, provide counseling for maladaptive behaviors, and prepare confinement summaries for various armed services parole and clemency boards. Although behavioral health treatment is a critical part of the rehabilitation process, all individual and group treatment remains voluntary and inmates have the option to stop treatment at any time or decline participation altogether.

The theoretical underpinnings for the majority of behavioral health interventions provided at the USDB are derived from Cognitive Behavior Therapy (CBT) and administered in a group setting. Inmates participate in a variety of evidence-based CBT treatment groups facilitated by behavioral health specialists and credentialed providers. Treatment groups are delineated on the RAMP and purposefully sequenced starting with a general cognitive skills group followed by anger management. These 2 groups are designed to improve the inmate's adaptation to confinement. Additionally, they develop CBT and emotions management skills which then form a foundation for the treatment groups that follow. After these 2 groups, if necessary, the inmate will be offered formal substance abuse treatment. Finally, after the general groups are completed, the inmate is offered the opportunity to participate in offense-specific treatment. This treatment sequence allows the inmates to participate in treatment over the duration of their sentence and sets up a process where the later groups build on the skills developed in the earlier groups.

The first group is Reasoning and Rehabilitation (R&R),[20] a cognitive skill-building group that is the foundation for all other treatment within DTP. The goals of R&R include (1) improvement in thinking skills, particularly problem-solving and decision-making, (2) developing pro-social behavior that is not dependent on external controls, and (3) improving interpersonal skills in problem-solving, and viewing frustration as a problem-solving task rather than a personal threat. The next group is Anger Management.[21] This CBT-based group enhances the inmate's ability to recognize underlying motivations for anger, develop their ability to examine their own behavior in response to anger, recognize cognitive errors that contribute to anger, and cultivate thinking and behaviors designed to handle anger appropriately.

Inmates who have an identified or self-reported history of substance abuse problems have the Chemical Abuse and Addictions Program (CAAP) (The Change Companies, Carson City, NV) on their RAMP. The level of substance abuse treatment provided is dependent upon the severity of the inmate's substance abuse problem. The CAAP-Didactic is a structured program designed to meet the needs of those inmates who do not have an extensive history of substance abuse. CAAP-Intensive consists of a year-long treatment program facilitated by credentialed providers for inmates with a substantial history of substance abuse. CAAP-Intensive is based on the philosophy that recovery is a life-long process requiring full commitment, practice, and life-style changes. In addition to CAAP, a 12-step based, voluntary

self-help group is offered twice a month to any inmate with substance abuse issues. The content of the self-help program is developed by the inmates, supervised by behavioral health staff, and supported by community volunteers who bring the message of recovery to those incarcerated.

Once an inmate has successfully completed all previous treatment groups on his RAMP, he is eligible to participate in crime specific groups that address the thinking and behaviors that contributed to his confining offenses. Inmates are screened for these groups by credentialed providers to determine the appropriateness of the inmate for the group. Group enrollment requires that the inmate accept some responsibility for having committed the offenses for which he was convicted. Furthermore, the inmate must demonstrate a desire and commitment to address the ideas and behaviors that led to his confining offenses and be willing to make the changes necessary to reduce the likelihood of reoffending upon release. The crime specific treatment groups currently offered at the USDB are Assaultive Offenders Group (AO) and Sex Offenders Treatment Group.

The AO[20] is designed for inmates incarcerated for violent and assaultive behaviors. The AO group enables inmates to identify the values, thoughts, behaviors, and attitudes that contributed to their assaultive behavior. It encourages a change to a violence-free lifestyle and helps the inmate develop skills to effectively problem-solve, appropriately manage emotions, and successfully engage in healthy conflict resolution.

The Sex Offender Treatment Group (SOT) is the most comprehensive treatment group offered at the USDB. Currently, 75% of the inmates incarcerated at the USDB are confined for a sexual offense.* Over the course of the past 25 years, sex offender treatment provided at the USDB has evolved, incorporating research and treatment protocols from the broader sex offender treatment literature. The USDB sex offender treatment program currently uses the Self-Regulation/Good Lives Model[22] as the primary method of sex offender treatment. The Self-Regulation/Good Lives Model assumes that sex offenders use sex offending in order to meet important needs. The purpose of treatment under this model, then, is to assist each inmate in identifying (1) what needs are most important to him, (2) which needs he was attempting to meet through his sexually offensive behavior, and (3) how he can meet those needs through healthier and more socially-appropriate behavior. The Self-Regulation/Good Lives Model is a dramatic shift in sex offender treatment in that it is the first model to emphasize important "approach goals" rather than focusing solely on what the inmate must avoid. This focus on approach goals is far more motivating to inmates and gives them hope for a full and offense-free lifestyle. Group treatment educates inmates on recognizing how their thoughts, behaviors, and emotions led to their offenses. It then teaches inmates how to develop and implement healthy skills and coping mechanisms to manage their risk factors, identify and improve their life skills deficits, and attain their personal life goals.

Effectively treating sex offenders requires an accurate assessment process to identify all of the factors that contribute to the inmate's urges to offend, as well as intense therapy to enable the inmate to identify realistic strategies to reduce those urges. Inmates undergo a comprehensive assessment process prior to enrollment in SOT. The assessment tools utilized include the STATIC-99R, STABLE 2007, penile plethysmograph (PPG), and sexual history polygraph. These assessments combined present a picture of risk for reoffense as well as identified treatment targets for change through the group process.

The STATIC-99R[23] is an actuarial measure that uses demographic and historical factors (such as age and past convictions) identified in the literature to be related to risk of recidivism. By definition, these are risk factors that cannot be changed or affected by treatment. The outcome of the measure is a numerical value that places the inmate into a "risk category" (low, moderate-low, moderate-high, or high) that has been shown in the literature to provide an overall moderate degree of predictive accuracy. The STABLE-2007[24] is a structured interview that measures 13 dynamic factors shown in the literature to be related to risk of recidivism. The outcome of this measure provides a numerical value that also places the inmate into a risk category (low, moderate, or high). These factors are important to measure as they can be changed with treatment over time. Thus, the STABLE-2007 provides group facilitators with valuable treatment targets that, if appropriately addressed, can reduce the inmate's risk of recidivism. Once both assessments are completed, the results are combined to provide one final risk category which will determine whether the inmate is directed into the low-moderate risk or moderate-high/high risk SOT group. This overall risk category also provides a research-based percentage risk of sexual or violent recidivism over 1, 3, or 5 year periods postrelease. Additionally, the PPG is administered to measure the inmate's arousal to auditory and visual stimuli depicting normal sexual encounters as well as deviant (coercive or age-inappropriate) sexual encounters, through the measurement of change in

*Source: USDB Inmate Database, June 2014

penile tumescence. The empirically-based outcome of the instrument is a numerical "deviance differential" that provides a risk category (low, moderate, or high), indicating whether the inmate has a greater, equal, or lower level of sexual arousal to children versus adults. This is a critical risk indicator because sexual deviance has routinely been shown in the literature to be among the most potent indicators of recidivism risk.[25-27] The PPG results are used to determine whether an inmate should complete the Deviant Arousal Reduction module of treatment, which uses covert sensitization and masturbatory satiation to help manage and reduce arousal to deviant stimuli.

Finally, all inmates are required to take a sexual history polygraph, administered by a contracted certified polygrapher, in order to be eligible for the SOT group. The polygraph interview covers the inmate's sexual history across his entire lifespan. The purpose of the polygraph is to obtain information that is pertinent to the inmate's treatment. For instance, often inmates who are incarcerated for the sexual abuse of one child will acknowledge other sexually deviant behavior (excessive pornography use, bestiality, etc) or additional victims that demonstrate a pattern of sexual behavior problems that must be addressed in treatment. Furthermore, while not foolproof, the polygraph provides the facilitator with an indication of the inmate's veracity surrounding his sexual behavior. This alone can provide the facilitator with insight into areas that need further inquiry over the course of treatment.

Inmates assessed as moderate-low/low risk (based on the combined STATIC-99R/STABLE-2007 score) will participate in a group in which factors such as relationship skills, cognitive restructuring, management of emotions, and development of risk management plans are the primary focus of treatment. Inmates who are assessed as moderate-high/high risk for re-offending participate in a more intensive group treatment program due to the increased number of needs, beliefs, and attitudes the inmates have that contribute to their offending. Treatment comprises both psychoeducational components (emotions management, cognitive restructuring, relationship skills, and deviant arousal reduction) and an intensive dynamic therapy group which addresses entrenched schemas and belief systems that support sexual offending, development of offense chains, motivation for treatment, and the development of a good life/comprehensive risk management plan for their release.

Upon completion of the inmate's required treatment, the inmate will be placed in a sex offender maintenance group that meets based upon their risk level to reoffend. The maintenance group helps to keep the inmates focused on achieving their life goals without offending, as well as preparing further for release into the community.

DTP Mental Health Division

In addition to rehabilitation, some inmates need in-depth treatment to address mental illness or personality disorders. The credentialed professionals from the DTP Mental Health Division are responsible for in-depth psychological assessment of inmates who pose diagnostic challenges and management problems within the facility. Referral questions often require additional testing to aid in differential diagnoses and recommendations for treatment planning.

The DTP Mental Health Division credentialed providers maintain an individual caseload of up to 12 inmates, focusing on the most severely mentally ill or personality disordered, as these inmates historically require the most resources in terms of time and systemic management. To facilitate successful management of these inmates, the DTP Mental Health Division insures the development of Inmate Management Plans for the most seriously mentally ill/behaviorally disordered inmates, and provides consultation for the other professionals and behavioral health specialists when they are treating an inmate with particularly challenging mental illness or severe personality disorder.

Because 53% of the USDB inmates have a history of combat deployments,* there are a high number with PTSD. The DTP Mental Health Division has implemented a Cognitive Processing Therapy (CPT) group,[28] an evidence-based PTSD treatment program that focuses on helping inmates identify stuck points in their thinking and distorted beliefs that stem from their traumatic experiences. The inmates then go through a number of sequenced exercises designed to challenge and shift those distorted beliefs to more reality-based and healthy beliefs.

The DTP Mental Health Division is also responsible for the case management of inmates in the Special Housing Unit (SHU). Sixty-four percent of the inmates housed in the SHU have been diagnosed and are receiving pharmacological treatment for an anxiety disorder, as opposed to 11% of the inmates housed in the general population. Additionally, 92% of the inmates housed in the SHU, as opposed to 21% of the inmates in general population, have been diagnosed and are receiving pharmacological treatment for a behavioral health disorder.* Most inmates housed in the SHU are there due to an inability to adapt to confinement and conform their

*Source: USDB Inmate Database, June 2014

behavior to the requirements of the facility. It appears that there is a relationship between sustaining a major mental illness and an increased likelihood of committing disciplinary infractions. As a result, the inmates in the SHU require specialized behavioral health interventions that target both behavioral health issues and adaptation to confinement.

Because many of the inmates who end up in the SHU have common problems, such as anger and emotion management issues, impulsivity, social skills deficits, and anxiety and personality disorder traits, an SHU group was implemented to allow treatment to be provided to a larger target group as well as for inmates to reap the benefits of interpersonal feedback from their peers. Group topics are focused on stress management, anger and emotion management, problem-solving, and communication skills. Relevant movies are occasionally shown after the discussion of a topic to permit a less personal, thus less threatening, exploration of the topic. A more personal exploration of the topic is addressed in follow-on sessions. This sequence encourages participation and allows a less defensive response to the material. While not formally investigated as of this writing, the SHU group appears to reduce the number of problems between staff and inmates in the SHU.

The DTP Mental Health Division facilitates all aspects of inmate psychiatric care. On average, 30% of the USDB inmate population require psychopharmacological intervention.* The DTP Mental Health Division provides organizational and administrative support to the on-site psychiatrist and to the psychiatrist providing telepsychiatry services. It also works closely with the pharmacy and medication nurses to insure seamless access to and accurate administration of all psychotropic medication.

Conclusion

The USDB mission is to conduct correctional and treatment programs to foster maintenance of good order and discipline in the facility and reduce recidivism upon release. The DTP staff faces a myriad of challenges in working within the correctional environment. First, in addition to situational and personal factors that drive inmates to commit the offenses for which they are confined, many also present with complex, significant, or comorbid behavioral health problems. These additional problems pose unique challenges to treatment and risk remediation that must be addressed. Furthermore, the factors inherent in the USDB correctional environment such as separation from support systems, lack of control over daily routines, lack of privacy, and insecurity about postincarceration employment and relationships can elicit behavioral problems within confinement. The DTP's CBT focus and logical sequencing of treatment has enabled it to develop programs that provide a consistent therapeutic language and address both behavioral health and rehabilitation needs.

The DTP staff also takes a systemic approach in addressing safety and risk within the institution, providing crisis intervention and de-escalation services to serve the inmates and support the correctional staff. They also work towards reducing the stigma and misunderstanding of inmates with behavioral health disorders through education, thus improving how cadre interact with behaviorally challenged inmates. Additionally, the DTP provides command consultation to USDB staff at all levels, advising on the appropriate management of inmates with behavioral health difficulties. As a result, the USDB has implemented policies and procedures that promote effective management of inmates with behavioral health conditions which has increased the safety and security of the facility.

Although there is research on a variety of cognitive behavior-based treatments, including many of the programs DTP uses, future research could focus on examining the effectiveness of these treatments specifically at the USDB. It would also be beneficial to engage in treatment outcome research for the cognitive behavior groups developed at the USDB which are not researched, manual-guided treatment programs. Finally, a relationship between serious mental illness and disciplinary reports has been noted. However, no direction of a causal relationship or whether there is another substantial variable in that relationship has been identified. Research examining the relationship between mental illness and disciplinary infractions may permit us to more effectively treat inmates with a mental illness while simultaneously increasing the safety and security of the facility.

The USDB's motto is "Our Mission–Your Future." The USDB is not content to simply confine and release inmates; it is invested in ensuring that each inmate has been given an opportunity to develop the skills necessary to reduce the likelihood that they will reoffend upon release. The DTP's extensive portfolio of services makes it an integral part of that mission.

*Source: USDB Inmate Database, June 2014

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The Effects of Military Deployment on Early Child Development

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Abstract

Purpose: The purpose of this observational, point prevalence study is to determine if parental deployment affects the cognitive, social and emotional development of preschool age children in the military family.

Methods: Demographic information was collected and an age-appropriate Ages and Stages Questionnaire (ASQ-3) and Ages and Stages Social-Emotional Inventory (ASQ:SE) were administered. The primary outcome measure was the failure rates on the developmental instruments.

Results: We identified 151 parents of eligible children; 95 children had a parent that deployed during their lifetime. We found a significant difference in ASQ-3 failure rates for children in the deployed group compared to those in the nondeployed group. Children of deployed parents were at least twice as often to fail the ASQ-3 or ASQ:SE developmental screen compared to children whose parents did not deploy. 30.5% of children in the deployed group failed the ASQ-3 screen while 12.5% of children who did not have a deployed parent failed (P=.009). On the ASQ:SE developmental screen, 16.8% of children who had a parent deploy failed versus 5.4% of children who did not have a parent deploy (P=.031).

Conclusions: This study suggests that parental deployment is related to adverse risk for developmental delays in children in military families. The psychological burden on military children could be life-long or require significant resources to address. These adverse outcomes could be possibly mitigated by early detection of developmental delay and firm attention to aggressive screening techniques in military communities.

To date, over 2.5 million service members have deployed in support of Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF). Of these, approximately 1.9 million are parents, with 48% having served at least 2 tours in Iraq and/or Afghanistan, affecting over 2 million children.[1,2] Additionally, despite increases since the 1970s in the percentage of women who serve, the military is still overwhelmingly male (84%), that is, the majority of military parents are fathers.

The adverse effects of combat deployments on families have been supported by research.[3,4] Several studies report higher rates of depression, anxiety, overall stress, and decreased family cohesion when the parent is deployed in a combat zone.[3,5] Service members also report higher rates of family stress and lower rates of partner cohesion. In one study, up to 20% of deployed service members indicated that they planned separating or divorcing their spouse upon return from deployment.[6] Soldiers with posttraumatic stress disorder have even higher rates of post-deployment adjustment problems with their partner.[7]

Limited literature suggests adverse effects of parental military deployment on children and adolescents. As more research emerges from the current Overseas Contingency Operations (formerly Global War on Terror), studies show higher rates of behavior problems and decreased social and emotional functioning in children of all ages.[8-11] In one study of military families with a deployed parent, Lester et al found that 33% of school-aged children were at "high risk" for psychosocial morbidity.[10] Similarly, adolescents reported higher rates of school, family, and peer difficulties.[13] Additionally, these children were also at risk for higher rates of physical abuse following periods of deployment.[14,15] Recent literature suggests that drug and alcohol use are higher among children of deployed military personnel.[16]

Several studies suggest that military children have increased rates of internalizing and externalizing behaviors when their parent deploy.[4,17] Furthermore, children have reported higher rates of sadness during the parent's deployment.[18,19] Lastly, children with preexisting psychopathology or coming from poorly-functioning

predeployment families may also be more vulnerable to the effects of deployment.[20,21]

The effect of deployment on children under the age of 5 years has been little studied. Several studies suggest that young children's reactions to parental deployment differ by a number of individual (temperament, age, and developmental stage) and family factors (the length of deployment, family composition, total time of service member being absent, financial conditions, the neighborhood in which the family lives, relocation, and other family stressors).[22] In general, children's reactions and adjustment to parental deployment are largely based on their age and developmental stage.[23-25] Simultaneously, children's reactions to parental deployment show a strong linkage with family functioning during deployment, that is, the nondeployed parent's responses in particular.[19]

Literature on military deployment-related family separation indicates that younger children, compared with older children, are more vulnerable to the effects of the separation.[18,19] A study of Army families found that children ages 0 to 5, compared to older children, coped least well with deployment-related parental absence.[26] Unable to express their feelings and experiences easily in words, children under the age of 5 tend to express their feelings about parental deployment in externalizing behaviors (eg, aggression, hyperactivity, and problematic behaviors), rather than internalizing behaviors (eg, depressive symptoms, withdrawal, and anxiety).[17,18] Young children also exhibit changes in moods, attention seeking, sadness, reduced appetite, and sleep problems.[17,27] Recent studies support these findings. One study of 169 Marine Corps families with children enrolled in an on-post daycare center showed that children aged 3 to 5 with a deployed parent exhibited higher rates of behavioral symptoms compared to children without a deployed parent.[28] Controlling for socioeconomic variables, Barker and Berry's study showed that young children with a deployed parent experienced behavioral problems.[22]

While some studies have shown increased behavioral symptoms in children with deployed parents, the data have limitations. Risk assessment for preschool age children is crucial since important psychological formation and development are forged during these preschool years. Because 40% of military children fall into this age category, failure to assess the consequences of military parent deployment on young children could prove disastrous. The purpose of this study is to determine if parental deployment affects the cognitive, social, and emotional development of preschool age children in the family.

Methods

The sample consisted of 151 children of active duty service members' households between the ages of 6 and 65 months stationed on Fort Bragg. A convenience sample of parents was selected among children presenting for routine appointments in a family medicine clinic. Only one preschool age child per family was surveyed. If more than one child in the family met the inclusion criteria, a random number generator was used to pick the child evaluated. All parents signed a written consent prior to data collection.

Three data collection instruments were used: a demographic data collection sheet; the age-appropriate Ages and Stages Questionnaire (ASQ-3); and the age-appropriate Ages and Stages Social-Emotional Inventory (ASQ:SE).[29,30] Along with basic family demographic information, the study survey assessed several military service-specific variables: rank of the military parent, the length of deployments, and whether a parent was currently or recently deployed. If a parent deployed to a combat military operation during the subject child's lifetime, the subject was categorized in the "Deployed Parent." If neither parent had deployed to a combat operation during the child subject's lifetime, the subject was placed in the "Nondeployed Parent" data group. The demographic survey also asked which parent deployed (mother, father, or both parents). Finally, parents were asked to self-report if they currently have depression or anxiety.

The ASQ-3 and the ASQ:SE are widely used parental-reported assessment tools with established psychometric properties.[29,30] The ASQ-3 consists of a 10-minute questionnaire completed by parents. Answers to screening questions are assigned points that are then summed in 5 different areas: communication, gross motor, fine motor, problem solving, and personal-social. Scores beneath the cutoff points indicate a need for further assessment; scores near the cutoff points call for discussion and monitoring; and scores above the cutoff suggest the child is developmentally appropriate.

Each ASQ-3 developmental area is associated with a number score. The absolute score for each category can be up to 60, but the "cutoff" for values of concern varies for each age surveyed. The absolute score was recorded as a data point, and the qualitative rating was recorded in order to compare all children as a whole. For the ASQ-3, the qualitative rating is "pass," "at-risk," or "fail," based on the subject's score compared to the cutoff value. This qualitative value was converted into "pass" or "fail" (combining "at-risk" and "fail" into one category for this study).

The ASQ:SE is also completed by the parent. The outcome variables measured by the ASQ:SE include self-regulation, compliance, communication, adaptive behaviors, autonomy, affect, and interaction with people. One number score is determined for the ASQ:SE. In addition to the number score, a qualitative rating is also given. There is no "at-risk" category for the ASQ:SE. Therefore, the rating of this study was recorded as either "pass" or "fail."

Statistical analyses were conducted using PASW Statistics 18 (IBM Corporation, Armonk, NY). All values were statistically analyzed using frequency distributions with calculations of means and standard deviations (SD). Continuous variables were assessed for normality of distribution and compared using 2-tailed *t* tests. Categorical variables were compared using the Fisher's Exact Test. Statistical significance was established at a *P* value less than or equal to 0.05. In order to detect the difference in failed developmental screens as a result of deployment (Cohen's Kappa=0.6), that is, to have 80% power to reject the null hypothesis with type I error of 5%, a sample of 50 participants was required for each group if 80% of children passed both tests. Therefore, our sample size of 151 is sufficient for this analysis.

This research protocol was approved by the Womack Army Medical Center Institutional Review Board and the Clinical Investigation Regulatory Office, Office of Research Protections, of the US Army Medical Research and Materiel Command.

Results

One hundred fifty-one parents of eligible children consented for the study and completed all parts of the questionnaire packet. Basic demographic data are presented in Table 1. Parent and child characteristics are comparable between deployment groups. Parents are distributed evenly among officer and enlisted ranks. More parents in the deployed group reported having depression or anxiety currently when compared to the nondeployed group; however, this was not statistically significant (27.4% vs. 17.9%, *P*=.24). Average length of parental deployment was 10.4 months (range=1-36 months). The groups also had a comparable distribution for children's gender and race. A slight variance existed between the mean age of children (32.7 months for the deployed group and 21.6 months for the nondeployed group).

There is a significant difference in ASQ-3 failure rates for children in the deployed group compared to those in the nondeployed group (Table 2). Children who had a parent deploy during their lifetime failed the ASQ-3 twice as often when compared to the nondeployed group; 30.3% of children who had a deployed parent failed the ASQ-3, while 12.5% of children who did not have a deployed parent failed (*P*=.009).

Failure rates for the 5 different subcomponents of the ASQ-3 are also shown in Table 2. Statistically significant differences were found between groups for the areas of gross motor skills (*P*=.008). Scores for the personal-social skills (*P*=.061) approached significance. The subcategories of communication, fine motor skills, and problem solving had similar trends for each group.

On the ASQ:SE developmental screen: 16.8% of children who had a parent deploy failed versus 5.4% of children who did not have a parent deploy (*P*=.031).

The effect of the length of total months of parent deployment during a child's lifetime is presented in the Figure. In our study, the 95 children in the deployed parent group were placed into one of 3 categories: 1 to 11 total months, 12 to 23 total months, and 24 to 36 total months. While there appears to be a trend for higher

Table 1. Child and Parent Characteristics by Deployment Status.

Child Characteristics	Deployed Parent (N=95)	Nondeployed Parent (N=56)	
Age, mean months (SD, range)	32.7 (16.1, 7-65)	21.6 (14.3, 6-60)	
Male	45 (47.4%)	29 (51.8%)	
Race/Ethnicity			
White	59 (62.1%)	38 (67.9%)	
Black	13 (13.7%)	10 (17.9%)	
Hispanic	13 (13.7%)	5 (8.9%)	
Asian	4 (4.2%)	1 (1.8%)	
Native American	3 (3.2%)	2 (3.6%)	
Unknown	3 (3.2%)	0 (0.0%)	
Parent Characteristics			***P* value**
Length of deployment mean months (SD)	10.4 (6.81)	n/a	
Enlisted rank	73 (76.8%)	35 (62.5%)	.23
Anxious/depressed	26 (27.4%)	10 (17.9%)	.12

Table 2. Analysis of Screening Outcomes by Parent Deployment Status.

Outcome	Deployed (N=95)	Nondeployed (N=56)	*P* value
ASQ-3 Fail Overall	29 (30.5%)	7 (12.5%)	.009
Communication	6 (6.3%)	3 (5.4%)	.557
Gross Motor	10 (10.5%)	0 (0.0%)	.008
Fine Motor	17 (17.9%)	5 (8.9%)	.100
Problem Solving	7 (7.4%)	1 (1.8%)	.133
Personal-Social	9 (9.5%)	1 (1.8%)	.061
ASQ:SE Fail	16 (16.8%)	3 (5.4%)	.031

rates of failed developmental screens with longer time away from the child, these results were not statistically significant ($P>.05$).

Other variables were recorded on the demographic sheet, however, the number of subjects present in these subcategories was not robust enough for data analysis. These variables included current deployment status of a parent, recent return of a parent from a deployment, and whether the mother or father had deployed.

Comment

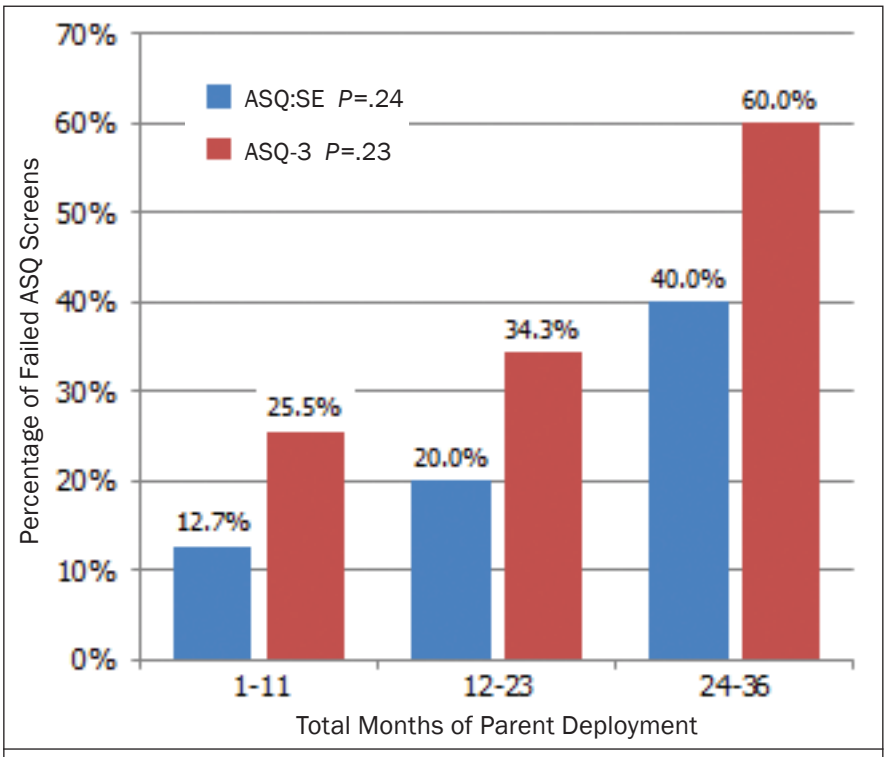
There are few studies that suggest that parental wartime deployment has adverse effects on preschool age children. Our study suggests that preschool age children with a deployed parent during their lifetime more often have higher rates of adverse developmental screens compared to those military children who did not have a parent deploy. Our data show that a larger number of these children failed the ASQ-3 developmental screen. Our data also show that children of deployed parents fail the ASQ:SE 3 times as often.

Our trends in failure rates are above the expected failure rates for these screening tools. An anticipated failure rate for the ASQ-3 in the general population is between 10% and 15%. A 12.5% failure rate in the nondeployed group is similar to the expected rate of the general population. In contrast, the deployed group has a 30.5% failure rate for the ASQ-3. Higher failure rates are also found in the deployed group for the ASQ:SE. Given the fact that children in both groups live in a military household, one could possibly deduce from these findings that the temporary absence of a parent does have an impact on the emotional and overall developmental status of young military children.

The absence of a parent during a child's important developmental years is most likely to have adverse effects on the child's interpersonal behaviors. This hypothesis is supported by the ASQ:SE fail rates that were higher among children with deployed parents. Additionally, these children had higher failure rates on the personal-social subcomponent of the ASQ-3. The fact that the gross motor subcomponent scores were statistically different between both groups of children is not readily explained. Previous studies have shown that children were at risk for higher rates of physical abuse following periods of deployment.[15,16] One could hypothesize that a link exists between the increased risk of child maltreatment or neglect in a household with a deployed parent and the delayed gross motor development on the screening tools in our study. Further assessment is needed to delineate this possible relationship.

One previous study demonstrated a pattern between the length of parent deployment and increased mental health diagnoses.[31] In our study, a trend appears to exist between length of parent deployment and frequency of failing a developmental screen. As shown in the Figure, the overall failure rate of children for both the ASQ-3 and the ASQ:SE increases with each deployment length of time. However, the differences in failure rates between groups were not statistically significant. Further research in this area is warranted.

Our study has several limitations. First, we acknowledge that the ASQ-3 and the ASQ:SE are screening tools and do not confer a diagnosis of developmental delay. However, rates of abnormal developmental screens should represent or reflect underlying rates of developmental delays in these children. Other more comprehensive screening instruments exist, but they are costly and lengthier to administer in the primary care setting.



Analysis of ASQ screening outcomes relative to length of parent deployment.

We also recognize that even though our subjects are all under 65 months old, multiple developmental stages exist within the age range studied (6 to 65 months). Infants and toddlers experience deployment differently than preschool age children. Thus, conclusions regarding age range among children with different developmental stages may not take into consideration possible intervening variables.

Lastly, we did not control for self-reported parental depression or anxiety. Our demographic data suggest a trend of higher frequency of anxiety or depression in families that have had a deployed service member. However, this difference was not statistically significant. While we expect that increasing sample size would not affect the overall results of our study, enrolling more subjects may allow us to better control for parental anxiety or depression.

Operational deployments affect all military families. The lasting effects on family members remain largely unknown. This study suggests that parent deployment is related to adverse risk for developmental delays in children. These adverse outcomes could be mitigated by early detection of developmental delay and aggressive screening techniques. Additionally, the psychological burden on children could have lasting effects that require significant resources. Increasing the number of behavioral health professionals to work with military families could be beneficial. Finally, this study contributes to the growing body of evidence of the enormous toll paid by military families.

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The Effect of Deployment, Distress, and Perceived Social Support on Army Spouses' Weight Status

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Abstract

This study examined the relationship between deployment status, psychological distress, perceived social support, age, rank, and gender with Army spouses' (N=1863) weight status. We posited that spouses of deployed Soldiers have a higher body mass index (BMI) than spouses of nondeployed Soldiers; spouses with higher psychological distress scores have a higher BMI than those with lower distress scores; and spouses with low social support scores have higher BMIs than those with higher social support scores.

Method: Secondary analysis of data from the 2008 Active Duty Spouse Survey was used to examine the relationship between weight status (health versus overweight or obese) and Army spouses' deployment status, demographic characteristics, psychological distress, and perceived social support.

Results: Deployment status and weight status were not related (P=.097). Male spouses were significantly more likely than female spouses to be overweight or obese. Psychological distress increased in direct correlation with increased age, and as perceived social support decreased, the incidents of being overweight or obese increased.

Conclusions: Findings suggest several risk factors are associated with being overweight or obese: male spouse, noncommissioned officers in the ranks of E5 through E9, older age, higher psychological distress scores, and lower perceived social support scores. The risk factors support the use of the Army Surgeon General's Performance Triad of sleep, activity, and nutrition as a tool to assist Army personnel and Department of the Army civilians in teaching spouses awareness and methods of changing behaviors that may result in choosing healthy options.

Being overweight or obese is one of the leading causes of preventable deaths in the United States. Approximately 400,000 people die per year of diseases related to being overweight or obese.[1] Specifically being overweight is associated with hypertension; type 2 diabetes; stroke; gallbladder disease; osteoarthritis; endometrial, breast, prostate, or colon cancer; and respiratory problems.[2,3] Given the enormity of the issue, there is pressure to use funds efficiently with empirically informed practices. The Army Surgeon General stated:

> In a fiscally constrained environment, we will have to mobilize the political will to invest in the long-term health and readiness of our beneficiaries, while being good stewards of the resources that we are given.[4]

Being overweight or obese can translate into costly medical care. The military spends $1.1 billion ($10^9$) a year to treat overweight or obese health-related problems of service members, retirees, and their families.[5] Measures can be taken to prevent being overweight or obese. Therefore, strategies must be developed to assist the Army spouse population in learning the skills necessary to make more informed choices and increasing awareness of the resources that are available to assist them. Being overweight or obese is a financial burden, just as military spouses are emotionally burdened with deployments.

The duration of the current war in Afghanistan and recent war in Iraq has taken its toll on US Army spouses.[6] The high operational tempo of repeated combat deployments, unexpected extended deployments, short dwell times, and a dangerously unpredictable war zone that includes the potential for combat-related casualties are all sources of uncertainty and stress for Army spouses.[7] The stressors of the war became apparent with elevated rates of psychological distress (eg, posttraumatic stress disorder, depressive symptomology) in returning Soldiers.[8] Consequently, priorities were established by the US Army Medical Department to assess, identify, and treat the needs of Soldiers and their families.[8]

A key concept in the Army Medicine 2020 Campaign Plan is The Performance Triad that addresses the sleep, activity, and nutrition of Army personnel and their families. The strategy begins with identication of the variables that may impact an individual's ability to sleep, engage in activity, and consume proper nutrition, followed by teaching awareness and methods of changing behaviors that result in choosing healthy options.[9] The Performance Triad may be an effective method to contribute to the transformation of Army medicine from a reactive to proactive preventative public health focus. The philosophy extends beyond the active duty Soldier

to also emphasize the well-being of military spouses. A primary example of this commitment is The Army Family Covenant, the Army's pledge to take care of the Soldiers' families signed by the Army's Public Health Command and the Chief of Staff of the Army.[10,11] However, research on the physical health and psychological well-being of military spouses is limited in scope.

The relationship between stress and weight among military spouses was first studied during the Vietnam War and Operation Desert Storm (1991-1995) with Navy spouses. One of many shared physical symptoms among military spouses with deployed spouses was eating disorders.[12] Navy spouses also reported weight loss when their husbands were at sea for long periods of time.[13,14] However, another study revealed that Navy wives' weight loss and gain were equivalent regardless of the Sailors' deployment status.[15] Although these studies offered important initial insights into the relationship between service-related stress and weight, they occurred prior to the obesity epidemic in the US, which has markedly increased since 1980 across all demographics and among the military population as well.[10,16]

Recent epidemiology data indicate 1 in 5 Army active duty spouses are overweight, and one-third are obese compared to one-third overweight and one-third obese in the civilian sector.[10] These descriptive findings suggest that although Army spouses may have fewer incidents than the general population for unhealthy weight status, more than half are at risk for weight related health problems. Several demographic factors are related to increased risk of being overweight or obese. Research suggests that as adults grow older, their BMI increases.[17] Further, as men increase in age, their BMI scores increase at a rate higher than women's BMI scores increase for the same age.[18] In the civilian sector, obesity rates increased for all socioeconomic status groups and education levels from the middle of the 1990s until 2007.[19]

It is well established that spouses of deployed Soldiers experience stress, but it is not known whether stress elevates the incidents among Army spouses for being overweight or obese.[20,21] Analysis of the civilian sector yielded inconsistent results for the relationship between stress and body weight. Women experiencing major life events, such as long-term illness of themselves or children, death of loved ones, major financial setbacks, or problematic adult children are at greater risk of gaining weight and obesity.[22] However, research has failed to support a relationship between everyday hassles, defined as that which "causes problems or makes life more difficult," and obesity among women.[23] A systematic review of the literature concerning Army spouses concluded that spouses with poor coping skills are predisposed to physical health problems and recommended further study of the effect of stress associated with separation on military spouses' health and well-being.[24] Associations among psychological symptoms (eg, depression, anxiety) and weight status are similarly inconsistent. There is a significant positive relationship between obesity and depression among women.[25] A systematic review revealed that US studies consistently showed a relationship between obesity and depression with women, meaning that there are higher odds that an obese woman may become depressed.[26] Conducted simultaneously, a systematic review and meta-analysis revealed a moderate level of evidence for a positive association between obesity and anxiety disorders for women specifically.[27]

Although social support theory suggests that individuals with a social support system are healthier, no studies were identified that examine the relationship between Army spouses' perceived social support and being overweight or obese.[28] In the civilian population, it was found that perceived social support protects against obesity among men but not for women, suggesting the need to examine this relationship further.[29]

Army Spouses

Being obese or overweight is a significant public health concern in the general public. Attention to correlates of weight status among Army spouses is particularly important because the spouses have the unique stressors of permanent change of station relocations, adjusting to the military, adapting in foreign countries, decreased social support from the family of origin, and family separations due to combat and noncombat related tours.[30] The unique challenges that military spouses face as a result of their Soldier deploying to a combat zone include constant fear for the safety of the Soldier, managing the household and children solo, and coping with loneliness.[31]

Army spouses whose Soldiers are deployed to a combat zone are at risk of negative mental and physical health outcomes. For example, one-fifth of spouses reported moderate to severe emotional problems that negatively affected other areas in their life.[20] Almost one-fifth of the Army spouses surveyed met the DSM-IV* criteria for generalized anxiety. More than one-tenth of Army spouses whose Soldiers were deployed at the time of the survey had depressive symptoms, which is double the rate of the civilian community in the US adult population.[20,32] When spouses lack social support, they report increased loneliness. Spouses faced with extended deployments and unexpected extensions may struggle with mental

*Diagnostic and Statistical Manual of Mental Disorders, 4th ed.

health problems and loneliness compared to spouses whose Soldier's deployment is not extended.[20,33-35]

Researchers hypothesized that poor coping is associated with physical health problems, which may be related to being overweight or obese.[3,12] Additional researchers supported the hypothesis and found an association between an Army spouse's ability to cope and health problems.[12,36,37] Spouses with effective coping skills such as the ability to solve problems were less likely to have physical health problems.

In summary, we do not know if there is an association between Soldiers' deployment status and Army spouses' weight status, but in the earlier studies,[13,14] spouses of Sailors either lost or maintained their weight when the Sailor was at sea. Spouses of deployed Soldiers experience stress and are more likely to be diagnosed with depression than spouses of nondeployed Soldiers.[20,21] In the civilian population, depression and anxiety are related to increases in weight, and weight increases in concert with increasing age.[17,25-27] It is unclear whether there is an association between social support and weight status.

The purpose of this study is to examine Army spouses' weight status (eg, BMI, healthy weight, overweight, or obese) in relation to their Soldiers' deployment status along with the variables of rank and education, psychological distress, and perceived social support. It is hypothesized that Army spouses' chronic stress of deployment may be related to being overweight or obese. Having an understanding of the variables associated with an Army spouse's overweight or obese status may assist in program planning and treatment of problematic weight and behavioral health issues.

Method

Data Source

Permission was granted by the Department of Defense (DoD) to use the 2008 Active Duty Spouses Survey (ADSS) for the secondary data analyses used in this study. The data for this study are from the 2008 ADSS development by the Human Resources Strategic Assessment Program and Defense Manpower Data Center's Program Evaluation Branch in support of the Under Secretary of Defense for Personnel and Readiness. The purpose of the survey was described to its participants as an opportunity to voice their concerns on issues that affect them and their families with the goal of improving "personnel policies, programs, and practices."[38] The 2008 ADSS has 95 questions across 9 sections:

1. Background information
2. Permanent change of station moves
3. Spouse's deployment status
4. Effect of deployments on children
5. Education and employment status of the spouse
6. Financial well-being of the family
7. Health and well-being of the spouse
8. Feelings about military life
9. The spouse's use of Military One-Source

A sample of 49,368 spouses was collected from active duty databases (Army, Air Force, Marine Corps, Navy, and Coast Guard), and 13,423 spouses responded (a 28% response rate from the DoD military spouses). Spouses no longer married to the service member, widowed, or whose spouse was no longer active duty were excluded from the survey. The final sample (N=1863) consists solely of Army spouses. Because all identities were removed from the data, the University of Maryland, Baltimore, Institutional Review Board reviewed and approved this study as Not Human Subjects Research.

Study Sample

The target population for this study (N=1863) consists of male and female legally married spouses of US Army active duty Soldiers below the rank of general who have been in the military for at least 6 months. The majority of the sample was female (90%); the average age of the spouses was 26 (SD=5.73). Race was distributed into 2 categories: non-Hispanic white (67%) and minority (33%). Almost one-third of the sample was from the rank structure of E-5 through E-9. More than half of active duty Army Soldiers are married, which is almost the same as the marriage percentage (56%) for the services combined (Air Force, Army, Marine Corps, and Navy). In this sample, the average age of married enlisted Soldiers (30.3 years) is lower than the average age of married officers (36.8 years). The percentage of married officers (70.5%) is higher than married enlisted Soldiers (65.6%). Spouses who were underweight (<1%) were not included in this study.

Study Measures

The survey measures demographic characteristics through self-response categories of gender, race, age, rank, education, and deployment status (not deployed, deployed but not to a combat zone, and deployed to a combat zone) with deployment defined as being away from home for more than 30 days.

Psychological Distress. The Kessler Scale (K6) was used in the survey. It is designed to assess whether a mental illness is present and its severity. The questions are similar to those used to assess symptoms of anxiety and

depression.[39] Six questions inquire of the participants' feelings over the last 4 weeks: (*a*) so sad that nothing could cheer you up, (*b*) nervous, (*c*) restless or fidgety, (*d*) hopelessness, (*e*) that everything was an effort, and (*f*) worthless. The 6 items are individually answered using a 5-point Likert scale ranging from 0 to 4 (none of the time, little of the time, some of the time, most of the time, all of the time). The scoring for the K6 is the total of the 6 items with scores ranging from 0 to 24. Scores of 0 to 7 indicate no diagnoses, 8 to 12 moderate mental illness, and scores above 12 indicate a severe mental illness.[38,40] The K6 has a strong Cronbach's α (.89) in the current study and in Kessler's psychological distress scale.[32]

Social Support. A 10-item perceived social support scale was used in the 2008 ADSS. The scale "indicates the degree to which spouses have a network of friends and family, other than their spouse, who can provide companionship, assistance, and other types of support. A higher score on the scale indicates greater perceived support."[38] The questions ask how likely is it that a friend, neighbor, or relative other than their spouse would: (*a*) listen to you if you needed to talk, (*b*) help with your daily chores if you were sick, (*c*) lend you tools or equipment if you needed them, (*d*) help you with physically demanding chores, (*e*) look after your belongings (house, pets, etc.) when you travel, (*f*) loan you $25 or more, (*g*) give you a ride if you need it, and (*h*) tell you about community resources. The answer to the 10 questions are averaged so each respondent has a total score on the perceived social support scale with a higher average score meaning more perceived support and lower meaning less perceived support. Cronbach's α for the 10 perceived social support items was .94 in this study.

Weight Status. The survey asks the respondents their height without shoes and their weight. The respondent's BMI was calculated as (weight in pounds×703)/(height in inches squared). In addition to the continuous BMI measure, BMI was also categorized as[3]:

- Healthy: 18.5 kg/m^2 to 24.9 kg/m^2
- Overweight: 25.0 kg/m^2 to 29.9 kg/m^2
- Obese: 30 kg/m^2 or higher

Data Analysis

The primary study hypothesis is that spouses of US Army Soldiers who are deployed (whether to a combat zone or other environment) have higher BMIs than spouses of Soldiers who are not deployed. One-way analyses of variance (ANOVAs) were conducted to examine the difference in the average BMIs for the 3 groups of interest: (1) Soldiers not deployed, (2) deployed but not to a combat zone, and (3) deployed to a combat zone. For all significant ANOVAs, Tukey post hoc tests were conducted to examine which groups are significantly different. A χ^2 analysis was used to examine whether there is a significant difference of the spouses in the 3 groups of interest when compared to the categories of having a healthy weight and being overweight or obese.

Results

Table 1. Demographics of the Army Spouses*

Characteristic	n (%N)
Gender (N=1861)	
Male	183 (9.8)
Female	1678 (90.1)
Race (N=1851)	
Non-Hispanic white	1248 (67.0)
Total minority	603 (32.4)
Age (N=1858)	
<26	368 (19.8)
26-30	394 (21.1)
31-35	385 (20.7)
36-40	344 (18.5)
>40	367 (19.7)
Rank (N=1862)	
E1-E4	465 (25.0)
E5-E9	549 (29.5)
W1-W5	199 (10.7)
O1-O3	312 (16.7)
O4- O6	337 (18.1)
Education (N=1853)	
No college	252 (13.5)
Some college	789 (42.4)
4 year degree	534 (28.7)
Professional degree	278 (14.9)
Deployment Status (N=1842)	
No deployment	865 (46.4)
Deployed but not to a combat zone	153 (8.2)
Deployed to a combat zone	824 (44.2)

*NOTE: N of each subgroup does not equal total study sample population of 1863 due to missing data.

Table 1 shows the basic demographics of the Army spouses from this survey (N=1863). The majority of the sample are women (90%) with non-Hispanic white (67%) representing the highest percentage in the race category. The ages of the spouses were equally dispersed among the 5 age categories. The highest percentage of the spouses has Soldiers in the ranks E5 through E9 (29%) and the lowest percentage in the ranks W1 through W5 (10%). Forty-two percent of the Army spouses have some college and the smallest percentage represents no college (13%). Only 8% of the Army spouses report that their Soldier has been deployed away from home but not to a combat zone. Forty-six percent report that their Soldier has never deployed.

Comparison of Healthy and Overweight or Obese Army Spouses

There were several differences between Army spouses with

healthy weights and those who were overweight or obese (see Tables 2 and 3). Male spouses were significantly more likely than female spouses to be overweight or obese (75% versus 47%) ($P<.005$). More than half of the minority spouses are in the overweight or obese category compared to less than half of the non-Hispanic white spouses ($P<.005$). Spouses with Soldiers in the enlisted ranks of E1 through E9 are more likely to be in the overweight or obese category compared to the spouses in the officer ranks O1 through O6 ($P<.001$). Spouses with no or some college were more likely to be in the overweight or obese category compared to spouses with a 4-year or professional degree ($P<.005$). Compared to those with weights in the healthy range, spouses who were overweight or obese were older, had higher psychological distress scores, and reported less perceived social support. Of the variables examined, only deployment status was not significantly related to weight status.

Table 2. Descriptive Variables Comparing Healthy to Overweight/Obese

Categorical Variable	Weight			
	Healthy n (%N)	Overweight/ Obese n (%N)	χ^2	*P*
Gender			49.74	<.005
Male (N=183)	46 (25.1)	137 (74.9)		
Female (N=1678)	864 (52.6)	778 (47.4)		
Race			14.29	<.005
Non-Hispanic white (N=1226)	646 (52.7)	580 (47.3)		
Total minority (N=590)	255 (43.2)	335 (56.8)		
Age			14.60	.006
<26 (N=354)	198 (55.9)	156 (44.1)		
26-30 (N=389)	206 (53.0)	183 (47.0)		
31-35 (N=376)	184 (48.9)	192 (51.1)		
36-40 (N=338)	163 (48.2)	175 (51.8)		
>40 (N=365)	156 (42.7)	209 (57.3)		
Rank			29.99	<.005
E1-E4 (N=451)	209 (46.3)	242 (53.7)		
E5-E9 (N=544)	234 (43.0)	310 (57.0)		
W1-W5 (N=194)	97 (50.0)	97 (50.0)		
O1-O3 (N=306)	171 (55.9)	135 (44.1)		
O4- O6 (N=331)	198 (59.8)	133 (40.2)		
Education			36.41	<.005
No college (N=245)	117 (47.8)	128 (52.5)		
Some college (N=774)	329 (42.5)	445 (57.5)		
4 yr degree (N=526)	309 (58.7)	217 (41.3)		
Professional degree (N=272)	149 (54.8)	123 (45.2)		
Deployment Status			4.67	.097
No deployment (N=849)	406 (47.8)	443 (52.2)		
Deploy, no combat zone (N=149)	68 (45.6)	81 (54.4)		
Deploy to combat zone (N=808)	424 (52.5)	384 (47.5)		
K6 Scale			18.83	<.005
No mental illness (N=1221)	651 (53.3)	570 (46.7)		
Moderate mental illness (N=358)	158 (44.1)	200 (55.9)		
Severe mental illness (N=197)	78 (39.6)	119 (60.4)		

K6 Scale indicates Psychological Distress Subscale: 1-5=no mental illness; 6-12=moderate mental illness; >13=severe mental illness

One-way ANOVAs were conducted to compare the BMIs, age, education, K6, and perceived social support of Army spouses in the 3 deployment groups (Table 4). Age, education, and K6 scores were all significantly related to deployment status. Spouses in the no deployment group were significantly older (approximately 2 years older) than spouses in either deployment group; spouses in the 2 deployment groups were not significantly different in age. Table 5 presents the Tukey post hoc comparisons. Spouses in the no deployment group on average had higher levels of education than spouses in either deployment group; spouses in the 2 deployment groups were not significantly different in education levels. Spouses in the no deployment group had significantly lower K6 scores than spouses in either deployment group; spouses in the 2 deployment groups did not have significantly different K6 scores. BMI scores and perceived social support were not significantly different across the 3 groups.

Table 3. Continuous Variables Comparing Healthy to Overweight/Obese (N=1863)

Continuous Variables	Weight			
	Healthy Mean (SD)	Overweight/Obese Mean (SD)	*t*	*P*
Age	32.7 (8.2)	34.3 (8.4)	-4.07	<.0005
K6 Scale	5.4 (5.0)	6.4 (5.3)	-4.01	<.0005
Social Support	3.9 (1.1)	3.7 (1.2)	4.40	<.0005

K6 Scale indicates Psychological Distress Subscale: 1-5=no mental illness; 6-12=moderate mental illness; >13=severe mental illness

Social Support indicates subscale for perception of likelihood of support: very unlikely=1; unlikely=2; neither likely nor unlikely=3; likely=4; very likely=5

A χ^2 analysis was used to examine whether the spouses in the 3 deployment statuses have different rates of being in the healthy or overweight or obese category and the results were not significant (Table 6).

Comment

The purpose of this study was to examine Army spouses' weight status (eg, BMI, healthy weight, overweight, or obese) in relation to their Soldiers' deployment status along with the variables of rank, education, psychological distress, and perceived social support. Results fail to

Table 4. Comparing Deployment and Weight Status of Army Spouses

Continuous Variable	Deployment Status Past 12 Months				
	No Deployment Mean (SD)	Deployment to Combat Zone?		F	*P*
		No Mean (SD)	Yes Mean (SD)		
BMI	26.17 (5.47)	26.12 (6.08)	26.11 (5.94)	0.02	.977
Age	34.8 (8.46)	32.7 (8.62)	32 (7.84)	23.2	<.005
Education	2.52 (0.91)	2.33 (0.88)	2.40 (0.89)	5.01	.007
K6 Scale	5.16 (4.70)	6.43 (5.47)	6.49 (5.49)	14.68	<.005
Social Support	3.75 (1.15)	3.82 (1.09)	3.80 (1.13)	0.62	.537

BMI indicates body mass index.
Assigned Education values: no college=1; some college=2; 4-year degree=3; graduate degree=4
K6 Scale indicates Psychological Distress Subscale: 1-5=no mental illness; 6-12=moderate mental illness; >13=severe mental illness
Social Support indicates subscale for perception of likelihood of support: very unlikely=1; unlikely=2; neither likely nor unlikely=3; likely=4; very likely=5

Table 5. Tukey Post Hoc Test on Deployment Status

Categorical Variable	Deployment Status		*P*
Age	not deployed	deployed not combat	.012
		deployed combat	<.005
	deployed not combat	not deployed	.012
		deployed combat	.666
	deployed combat	not deployed	<.005
		deployed not combat	.666
Spouse Education	not deployed	deployed not combat	.042
		deployed combat	.024
	deployed not combat	not deployed	.042
		deployed combat	.607
	deployed combat	not deployed	.024
		deployed not combat	.607
K6 Scale	not deployed	deployed not combat	.016
		deployed combat	<.005
	deployed not combat	not deployed	.016
		deployed combat	.989
	deployed combat	not deployed	<.005
		deployed not combat	.989

support a statistically significant relationship between deployment status and spouse weight status. However, spouses' weight status was related to gender, rank, psychological distress, and perceived social support. Specifically, male spouses, spouses of those at lower ranks, increased psychological distress, and lower perceived social support were related to increased incidence of being overweight or obese.

The percentage (60%) of Army spouses who are overweight or obese is lower than what has been reported for the civilian population in which 68% of adults over 20 are overweight or obese.[41] However, an unexpected finding in this study is that male spouses are more likely to be overweight or obese compared to females. This finding is consistent with the literature where men in the United States are more likely to be overweight or obese in comparison to women.[17] Further, in the civilian sector in the last 10 years, male BMI scores have significantly increased compared to that of women.[18] However, the weight differences between men and women in the Army are notably higher (25%) than the civilian sector's difference of 10%.[17]

Spouses of Soldiers in the enlisted ranks (E1 through E9) are more likely to be overweight or obese compared to spouses of Soldiers in the higher ranks (O1 through O6). Because rank is directly associated with income, it is possible that spouses of Soldiers in enlisted ranks experience greater financial barriers to accessing high quality foods such as whole grain, lean meats, and fresh fruits and vegetables. They may also rely on fast food options that are often perceived as more economical and convenient. Previous research has tied socioeconomic status to diet quality, with lower socioeconomic status associated with greater consumption of foods characterized by refined grains and added fats.[42-44]

Psychological stress was also associated with weight status, with spouses who endorsed greater distress also reporting higher BMI. The physiological pathway in which stress may predispose an individual to obesity is well documented. Individuals experiencing acute or chronic stress have been found to have elevated glucocorticoids related to hypothalamic-pituitary-adrenal axis simulation that may increase eating behaviors, and, in turn, elevate BMI.[45,46] Consistent with other studies, our research also identified that psychological distress can increase when the Soldier is deployed.[34,47]

Relatedly, study findings indicate an inverse relationship between perceived social support and BMI; participants who had higher social support scores were less likely to be overweight or obese. Social support is especially important for military populations who are new, adjusting to the military way of life, and are often separated from their Soldier.[48,49] The protective effect of social support may work directly on weight status by providing opportunities for shared physical activity and may also offer a buffer for psychological distress.[50] Spouses' perceptions of social support affects Soldiers' decisions to continue serving their country, and Airmen who perceive that their spouses benefit from social support report their spouses cope effectively with the military lifestyle.[47,51] Men differ from women in their use of social support and the support's effectiveness in decreasing stress.[52]

Table 6. Comparing Deployment Status of Spouse with Being Overweight/Obese

Categorical Variable	Deployment Status*				
	No	Yes			
		Not Combat Zone	Combat Zone		
	n (%N)	n (%N)	n (%N)	χ^2	*P*
Healthy weight (N=898)	406 (47.8)	68 (45.6)	424 (52.3)	4.34	.114
Unhealthy weight				5.03	.081
Overweight (N=528)	269 (60.7)	51 (63.0)	208 (53.7)		
Obese (N=383)	174 (39.3)	30 (37.0)	179 (46.3)		

*Deployment status during the last year.

Implications

Future Research. The results of this study provide a direction for building programs that maximize protective factors and address risk factors associated with spouse weight status. Because this study only included data through 2008, it is important to conduct follow-up research to fully capture the long-term effects of deployments, especially in light of the ongoing operations related to Operation Enduring Freedom. Operations Iraqi Freedom and Enduring Freedom are unprecedented insofar as the US military population has never served as long or had as many repeated deployments to combat zones. The literature shows that Soldiers with multiple deployments (noncombat) are at higher risk of adjustment problems compared to those with only one deployment.[8,53] Soldiers with at least 2 deployments have higher incidents of posttraumatic stress disorder, major depressive disorder, or traumatic brain injury than those with less than 2 deployments.[8,53] The experience of multiple deployments over 13 years may also have substantial negative effects on spouses. Examining 13 years of war instead of 7 years may offer a more comprehensive picture of the interrelationships among deployment, stress, social support, and weight status.

Policy and Practice. We have enhanced understanding of how psychological distress and perceived social support are associated with being overweight or obese and the higher incidents of overweight among male spouses. The associations and incidents identified are consistent with The Surgeon Generals drive for beneficiaries' health through the Performance Triad; they may also improve the ability of primary care providers and Army units to enhance the treatment and programs provided for spouses. For example, Army units could tailor a social support program to have physical activities, such as basketball leagues, that may attract the male spouses. Morale, Welfare, and Recreation support services could make a concerted effort that focuses on engaging male spouses to participate in their sponsored activities such as fitness classes and running events. Army units and providers could also channel educational material about the relationships of stress, social support, and healthy lifestyle choices to spouses of Soldiers who are preparing to deploy.

The findings of this study may also inform programs such as the Army Wellness Centers (AWC) and Comprehensive Soldier Fitness (CSF) program. For example, the fact that three-quarters of male spouses are overweight or obese may also be critical information for the AWC as they could design programs geared towards reaching out to male spouses. As another example, the AWC could provide networking opportunities to increase perceived social support for families living outside the United States where they may be removed from their families of origin. The CSF could use these findings to inform how they structure their programs that address their 5 dimensions of strength: physical, emotional, family, social, and spiritual.

Conclusion

The results of this study fail to support a relationship between deployment and weight status among Army spouses during the period 2001 through 2008. However, findings address a gap in research with Army spouses by identifying several key risks (older age, lower rank, male gender, psychological distress) and protective mechanisms such as social support associated with spouse weight status. Moreover, this study contributes to The Army Surgeon General's Performance Triad strategy of recognizing and intervening on factors that create challenges with sleep, activity, and nutrition. It also offers suggestions to shape policy and clinical practice to enhance care for Army spouses. Additionally, study results may help shape clinical practice in primary care settings by encouraging providers to routinely screen spouses of deployed Soldiers for the identified factors associated with being overweight or obese, and help link at-risk groups to programs and resources. Collectively, these steps could help advance The Army Surgeon General's Performance Triad initiative.

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Applying the Korem Profiling System to Domestic Violence

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Abstract

Soldiers involved in domestic violence are a focus of concern for the US Army. The Family Advocacy Program is designed to prevent and intervene to mitigate future violence. Some of the Family Advocacy Program assessment tools are limited in their ability to identify contributing factors of situational couple violence. This article proposes incorporating the Korem Profiling System, a rapid assessment tool, to help identify underlying causes of situational couple violence and provide appropriate interventions to prevent future incidents.

Until relatively recently, many cultures viewed "wife beating" as an acceptable part of marriage.[1] Even though violence in relationships is not condoned in the United States, one in 4 women will experience a form of domestic abuse in their lifetime.[2] While men comprise 85% of the domestic violence arrests, women also perpetrate violence towards their partners.[3] Three million children witness domestic violence every year.[2] Most healthcare professionals agree that domestic violence is far-reaching and has effects on families, communities, and society as a whole. Researchers have identified and defined 3 types of intimate partner violence which including situational couple violence (SCV), intimate partner terrorism, and violent resistance.[4]

The most common form of violence between couples is SCV.[4] This type of violence is commonly called battering, which involves a partner physically attacking another. It can either be an isolated incident or reoccurring, potentially a particularly dangerous situation since physical attacks often increase in severity. Intimate partner terrorism involves an individual who terrorizes by using coercion to control the partner through a combination of violence and other tactics including threats, intimidation, or psychological abuse. This form of abuse is believed to be less frequent than SCV but still affects 2 million women in the United States. Violent resistance occurs when the victim of intimate partner terrorism fights back.[4] Resistance can be especially dangerous if the female obtains a weapon and attacks the male out of fear. All 3 types of violence can be dangerous, in some cases life threatening, thus requiring timely and effective intervention.

The Department of Defense created the Family Advocacy Program (FAP) to treat victims and offenders of family violence. A significant majority of FAP cases seem to involve SCV. Service members are under a great deal of public scrutiny since many individuals believe that the stress of military life can lead to family abuse.[5] The Army has been involved in an almost 13-year period of continuous conflict, resulting in war-weary service members and their families. The many stressors associated with military service may impede healthy family functioning.[6] Nearly 18% of married Soldiers report interpersonal conflicts as they return home from deployments.[7] Operation Iraqi Freedom deployments are often correlated to decreased marital satisfaction, increased divorce intentions, and an increase in self-reported spousal abuse.[8] Mansfield and colleagues found that military deployments also increase marital dissatisfaction, divorce rates, and decrease the emotional health of partners.[9]

Assessing a FAP referral, which in many cases is a complex endeavor, begins with an intake interview that includes a biopsychosocial assessment and determining the details of the allegedly abusive incident. Establishing safety is of paramount importance. The standard protocol involves completing the Spouse Abuse Risk Assessment, Spouse Abuse Manual Assessment Worksheet, and Safety Plan to address the presenting circumstances. However, FAP social workers would benefit from an additional assessment tool that can quickly assess the level of danger in a SVC situation and identify individuals that may be vulnerable to future incidents. The Korem Profiling System (KPS)[10] may be useful as an adjunct to current FAP assessment procedures.

The Korem Profiling System

The KPS examines the method in which an individual communicates and the process they use to make decisions.[10] Properly application of the system requires a clinician to determine the degree of assertiveness delivered in an individual's communication and the emotion expressed in their messages. Examining a person's

decision making process, seen as a performance trait, involves identifying how confident an individual is in the decisions they make and whether their thought processes tend to be conventional. Assessing these characteristics is helpful to understanding a person's typical style in communicating and performing. When combined, these 2 basic traits form a broad picture of the characteristic manner in which a person relates to others and responds to environmental demands.

Communication Traits

A social worker can use the KPS to explore the breakdown in the communication. First, the social worker should evaluate if the client is assertive when they talk. The social worker should evaluate if the individual is mostly assertive or mostly nonassertive and place a point on a graph as illustrated in Figure 1. Next, the social worker evaluates if an individual uses a lot of emotion or controls their emotions when communicating. A point is placed on the graph as shown on Figure 1. Plotting 2 different traits forms what is called a "type" which is represented by each quadrant.[10] Individuals who are in different quadrants may have difficulty communicating.

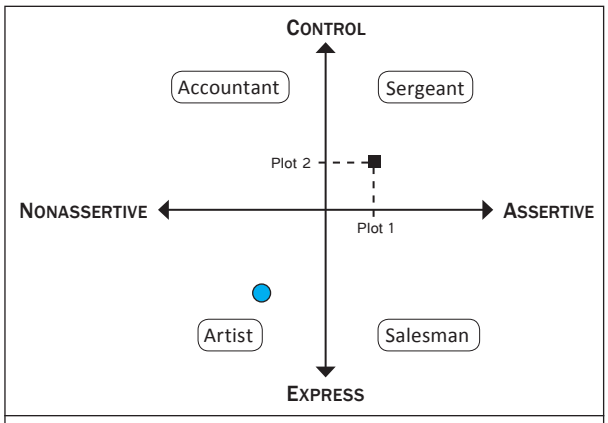

Figure 1. Communication Axis. (Courtesy of Dan Korem.)

Each quadrant has a specific communication trait that is typical with their respective professions. The 2 personalities that control their emotions are the "Accountant" and "Sergeant." For instance, the Accountant is nonassertive and controls emotions. This type of individual maintains emotional composure and nonassertively makes inquires like an investigator or detailer. While the Accountant can be easy-going, analytical, and efficient, this trait has a dark side of being suspicious, pessimistic, and critical of others. The Sergeant, a designation coined by Korem which can also be called a leader or commander, is more typical in the military and gives orders while controlling emotion. While a Sergeant is strong, takes charge, has confidence, and is action oriented, this trait has the dark side of being overbearing, egotistical, impatient, and unsympathetic.[10]

The 2 types that express emotion are the "Artist" and "Salesman." The Artist has traits typical of a counselor or sensor in the sense of a person who communicates nonassertively while using emotion. An Artist is typically agreeable, creative, compassionate, and loyal, however, this trait has the dark side of being critical, moody, unsure, and naive. The last personality type is the Salesman who can also be seen as a communicator or presenter since they convey emotion and enthusiasm, selling their product while using assertion. This trait has the upside of being optimistic, passionate, friendly, and confident, but has a downside of being impulsive, overselling, unfocused, and short-fused.[10]

Interactions among Traits

Each quadrant in Figure 1 has a position that is often associated with individuals that have a specific type of communication trait. Sergeants are more likely to control their emotions and be assertive in their communication. In complete contrast is an Artist who expresses emotion while lacking assertiveness in communication. Individuals that have communication patterns that are complete opposites, which would be represented by a diagonal plot, are more likely to have conflict with their communication.[10] A social worker armed with this knowledge can quickly assess the dysfunctional communication pattern and explain it to the couple suffering from SCV.

Korem's assertion that the method of communication can cause conflict if 2 individuals operate on different profiles is supported by Chapman,[11] who posited that individuals who are communicating in different love languages are bound to have more conflict than those who are similar. The KPS argues that individuals who control emotions and are nonassertive, such as the Accountant, are more likely to have conflicts with the Salesman who expresses emotions and is assertive. The same opinion applies for the Sergeant and Artist.[10]

Armed with a fast communication assessment tool, a social worker can quickly provide important information and recommendations to a couple suffering from SCV. Individuals with certain communication traits require unique methods for effectively engaging in conversation. For example, one should be more directive when addressing a nonassertive person to control miscommunication. Further, be slightly less assertive when asking a nonassertive person a question or making a statement to make the message less threatening. When addressing an assertive or control individual, who is typically blunt, use direct communication.[10] Control and expressive individuals often require someone to show emotion in messages that are subjective in order to place them in

the emotional thought process. To maintain an objective tone, a provider or significant other should use communication that is without emotion when obtaining factual information from expressive individuals.[10]

Decision Making

Social workers devise safety plans in every assessment to ensure the welfare of their clients. Tools such as the Spouse Abuse Manual Assessment Worksheet and Spouse Abuse Risk Assessment have limitations in their ability to protect an individual in the long run. The KPS addresses this problem by analyzing the method by which an individual makes decisions. Figure 2 is used to evaluate an individual's emotional approach and predictability in decision making. A social worker should first examine whether an individual uses confidence or fear when making decisions. It should be determined if the individual is slightly fearful, cautious, or has a high degree of fear. The social worker would then make a horizontal plot as illustrated in Figure 2. Next, the social worker can examine whether the individual makes conventional or unconventional decisions. A conventional person makes predictable decisions and often thinks "inside of the box." In contrast, an unconventional person is often unpredictable and thinks "outside of the box." A plot reflecting that determination is placed on the vertical axis of the graph as shown in Figure 2.[10]

Understanding the Performance Quadrants

The 2 conventional types are the "Loyalist" and "Manager." The Loyalist is typically obedient and a team player, and can be also viewed as a supporter or sustainer. While Loyalists are manageable, reliable, and precise, they have the downside of being uncreative, indecisive, and unwilling to take responsibility for their actions. The Manager type are typically leaders who tend to follow the rules and follow orders. While Managers are organized, goal oriented, logical, and self-assured, they have a dark side of being bureaucratic, entrenched, fault-finding, and micromanaging. A Manager also relies on experience versus creativity to solve problems. In contrast with these conventional traits are unconventional types of individuals.[10]

The 3 unconventional types are the "Random Actor," "Cautious Innovator," and "Innovator." Individuals of the Random Actor type are usually troubled and operate out of paranoia or fear. While Random Actors are imaginative and creative, they can be dangerous, deceptive, moody, and lack empathy. These individuals also seek protection through control, which is a red flag in FAP. The Cautious Innovators are creative types of individuals similar to designers or software developers, but do not take risks. Individuals with these traits are loyal, free-thinking, and creative, however they can be aimless, irresponsible, insecure, and unwilling to take responsibility for their actions. The last unconventional type that makes decisions out of confidence is the Innovator. This type of individual is willing to take risks and challenge a system. While this trait has the strength of being self-assured, creative, decisive, and adapts to change, it can have the downside of being forgetful, reckless, unreliable, and irresponsible.[10]

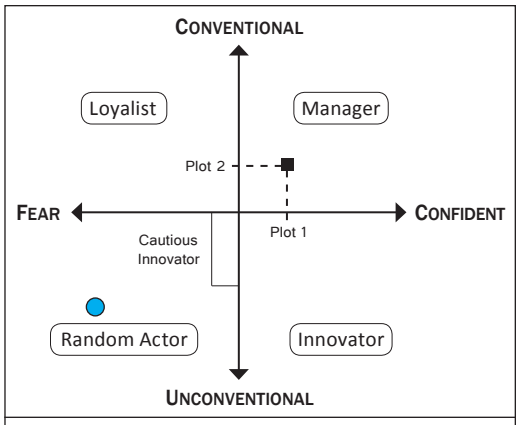

Figure 2. Performance Axis. (Courtesy of Dan Korem.)

Interactions Among Types

The 2 different methods of assessing the decision-making traits of an individual forms quadrants that reveal certain personality types. The Manager is both a predictable and confident individual. The Innovator is similarly confident, however, he/she thinks outside of the box. The complete opposite type is the Loyalist who makes decisions out of fear, but is predictable. Naturally the Manager can get along with the Loyalist who will follow suit. A slightly fearful individual who is unconventional is the Cautious Innovator. This individual has some fear in his/her decisions, but is not overly fearful, similar to an air traffic controller who has to ensure aircraft take appropriate flight paths.[10] Last is the Random Actor who is both fearful and unconventional. Random Actors and Innovators initially get along well in relationships. Eventually Innovators become annoyed and weary of the Random Actor's paranoia. This personality type can be the most dangerous since Random Actors make choices based on paranoia. These types of individuals often engage in random acts of violence and harm innocents. Examples of Random Actors include John Muhammad, the Beltway Sniper, and Mark Kools who killed members of his chain of command with a hand grenade in Kuwait.[12] These individuals have the traits of the Intimate Terrorist that Leone et al describe as an individual who operates on fear.[13] Not all Random Actors are dangerous as explained below. An individual who lacks violent traits should not warrant as much concern.[12]

A social worker armed with this knowledge can quickly assess how dangerous a partner may be

in a relationship. The Random Actor profile has 2 separate traits. One is the "hammer," which is the Random Actor who uses unconventional traits for creative and constructive projects.[12] This type of individual is typically not violent. In contrast is the "gun," the Random Actor who is waiting to explode. There are usually 2 criteria for the gun type of Random Actor to explode. First, the gun needs bullets, which can be a bad relationship or a history of being bullied. The second criteria is the trigger, the event that pushed the individual over the edge such as a partner ending a relationship.[12] This type of individual can cause a great deal of harm to a partner. The social worker conducting the assessment should look for a history of violence throughout the interview to determine if the individual is a hammer or a gun. A social worker should examine a more thorough safety plan with a Random Actor demonstrating the gun trait.

Application to Family Advocacy

Physically aggressive couples tend to lack appropriate communication skills.[14] There are a number of factors that contribute to communication difficulties between couples. Researchers have found that wives who tend to be physically aggressive can be easily provoked by their spouse's offensive or defensive statements.[15] A social worker who understands how each communication profile communicates can bring those traits to the client's attention in order to select an appropriate intervention. More importantly, the social worker can teach and coach their clients to communicate more smoothly with other communication types which allows them to prevent frustration during conversations that can ultimately lead to violence.

Limitations

The KPS is not without its weaknesses. Inexperienced individuals using the system may take a "snapshot" at a point in time and misread a person. Individuals that are presenting to FAP are often attempting to conceal their actual communication traits from the social worker to protect their careers. Korem argued that watching an individual in a stressful situation or the use of confrontation can cause the person to present their true traits.[12] Korem argues to use a quick safety check to verify a read by evaluating the final result and see if the individual actually fits the profile. He also argues an individual using his system should look at the total person and not a particular incident when an individual may act out of character.[10] Couples experiencing SCV are prime examples of individuals who may not necessarily be violent individuals. A situation in which the couple simply cannot figure out how to communicate a point can result in physical conflict. Another potential weakness of applying the system is mistaking communication for action. Korem stressed the importance of separating the two. Adolph Hitler is an example of an individual who presented unwavering confidence while actually making decisions based on fear and paranoia.[12]

Conclusion

Using the KPS as a screening tool along with other mandated techniques allows providers to quickly assess potential communication issues with an individual. The KPS is in no way designed to replace assessment tools approved by the Army Medical Command which are critical in safety planning and determining therapeutic interventions. The KPS also allows providers to go beyond an individual's personal communication presentation and find behavior patterns that may become more problematic in the future. In the case of working with FAP, it allows a social worker to find a long-term fearful trait in clients that may require an intervention that a conventional biopsychosocial assessment may miss. While Korem posits law enforcement and businesses have empirically concluded that his profiling system works,[10] the behavioral health community should evaluate the applicability of the system to the clinical field of work. The KPS is a promising system for incorporation into the FAP. A pilot study should be conducted to measure its true effectiveness for addressing situations of domestic violence.

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Understanding the Student Veterans' College Experience: An Exploratory Study

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Abstract

Objective: Students with active duty military experience are a unique and growing population on college campuses in the United States. This study explores student veterans' perceptions of their transition to and experience in higher education.

Method: This mixed methods study used a sample of 10 active military and reserve component student veterans to explore their perceptions of their personal strengths, challenges, factors impacting participation in university resource programs, and suggestions for ideal resources to support their academic success.

Results: Content analysis yielded primary themes such as the strength of self-discipline, the challenge of social interactions, and the desire for programs that connect student-veterans and assist with social integration.

Conclusion: Implications for education, retention, and transition from active duty are discussed.

Students with active-duty military experience represent a unique population on the college campus. Over 945,000 students in the United States use education benefits from the Department of Veterans Affairs (VA).[1] In addition, the Department of Defense's voluntary education program reports that over 400,000 current service members are using aid such as the Tuition Assistance Program and are enrolled in higher education programs.[2] The Post 9-11 Veterans Education Assistance Act of 2008 (38 USC ch 33 (2008)), commonly known as the Post 9-11 GI Bill, has made higher education an attractive and financially feasible option for many veterans. Use of education benefits to pursue a college degree may be an especially attractive option in coming years; deployments to combat zones may decrease and the military may potentially enter a period of downsizing.[3] This nontraditional student population has had different life experiences and circumstances compared to more traditional students, which can both enrich the veteran student's college experience and give rise to challenges during transition and retention. This suggests the need to better understand how student veterans perceive their transition to and experience in higher education.

This mixed-methods study of 10 student veterans explored their perceptions of personal strengths that support academic success, the challenges they experienced in the academic setting, factors impacting veteran participation in college resource programs, and suggestions for ideal resources aimed at supporting the student veteran.

The Student Veteran and the College Experience

Much of the earlier research regarding students with military experience was conducted following World War II and the Vietnam War. These studies focused primarily on topics such as the impact of service on veterans' academic achievement pre- and postcombat,[4] academic planning, federal assistance programs,[5] and student veteran academic success compared to their nonveteran counterparts[6] rather than on their transition to the college environment and subsequent experience. However, several recent studies have explored the transition experience in higher education of the veteran population. One such study investigated experiences of 25 combat veterans who transitioned to college as full-time students,[7] and 2 studies explored the transitional experiences of college students who returned to college to resume the student role following combat zone deployments or other active military service.[8,9] The findings of these studies yielded several themes that described veterans' transitions, including feeling ambivalent about leaving the camaraderie of military life[7] and a reluctance to acknowledge veteran status on campus.[8] DiRamio and colleagues[7] found that relational concerns were prevalent among the veteran participants in their study, who described the challenge of simultaneously dealing with strained existing relationships and the difficulty of relating to newfound student peers. Consistent across these studies were descriptions of how military experience seemed to have equipped student veterans with a different type of maturity than that generally observed in more traditional college students which resulted in difficulties connecting with other students and, at times, diminishing class participation.[7-9] Mental and physical health concerns were also noted as contributing to the challenge of renegotiating new identities as students.[7,9] While several possible ways to aid student veterans in the future were discussed, DiRamio et al noted an

overarching theme: the wish of the study participants that "faculty members would acknowledge their veteran status and attempt to understand them."[7(p89)]

Citing the paucity body of existing literature on the transitions and well-being of student veterans and noting specifically the lack of quantitative research, Whiteman et al[10] conducted a study examining the effects of support received from nonveteran student peers in a sample of student veterans (n=199) compared to their civilian counterparts (n=181) and found that student veterans perceived receiving less emotional support from other students compared to that reported by civilian students. Additionally, while peer support correlated with better emotional and mental health for both student veterans and civilian students, this correlation was weaker in student veterans.

Student veterans represent a unique group of nontraditional students. Like most nontraditional students, they are often older than their student peers, may support families at home, may have significant work commitments outside of school, may be less involved in campus activities and feel less a part of the university community than traditional college students.[11] While retention rates specifically for student veterans have not yet been thoroughly examined,[12] surveys have shown that nontraditional students, a group to which most student veterans belong, are at a higher risk for dropping out of college,[13] and that being a student veteran is negatively correlated to grade point average (GPA).[14]

Durdella and Kim[14] explored differences between civilian and veteran student groups in relation to academic outcomes and sense of belonging in the college community. They found that the student veteran participants on average had a lower cumulative GPA than the civilian students, an outcome for which veteran status was found to be a significant predictor. However, freshmen status was a positive predictor of higher GPAs, a characteristic that fits only a small number of the student veteran respondents. The student veterans also reported feeling less a part of the college campus than civilian student respondents, however, veteran status itself was not found to be a significant predictor of this difference. Another student characteristic, family annual income, was supported as a significant predictor of the variance in respondents' reported sense of belonging; the student veterans on average reported lower levels of family income than their civilian counterparts. These findings suggest the necessity to understand with greater specificity the differences between veteran and civilian student groups in order to better support student veteran's success.

These previous study findings support the need to better understand the experiences of student veterans and what relevant support provided by college campuses would be beneficial for transitioning veterans. This study furthers the examination of student veteran transitions and challenges, and specifically asked participants to provide suggestions on the types of support they desired and would use to improve their college experience and retention.

Study Methodology

This mixed-methods exploratory study used a purposive sample of university students with active duty military experience. The sampling frame consisted of members of a university military student email list that had approximately 500 subscribers. Although it was not possible to determine how many of these subscribers met this study's inclusion criteria, the decision was made to use this email list as it was the most far-reaching mechanism available on campus to reach this specific population. To participate in the study, respondents had to be at least 18 years of age and full-time university students who had served in any military branch on an active duty status for at least one year.

After approval by the university's institutional review board, an introductory email was sent via the university's Military Veterans of America email list to introduce the study. Invitations to participate were sent within one week and again in 2 weeks. Interested students replied directly to study personnel and provided contact information so that an individual interview could be scheduled. Twelve students responded to the study invitation and asked to be contacted. However, only 10 of these potential participants successfully scheduled and completed interviews, which was assessed to be adequate for this exploratory study; Kvale[15] suggests a range of 5 to 25 participants as satisfactory for qualitative research.

Data collection took place in October and November 2011. Qualitative data were gathered using semistructured individual interviews[15] exploring these areas: (1) student veterans' perceptions of the assets and strengths they developed as a result of their military experience, (2) specific challenges the veterans faced as they transition to the student role and throughout their college experience, (3) their perception of why student veterans may choose not to participate in social and academic support programs directed toward them, and (4) ideas about what programs or resources might benefit future student veterans to transition successfully and succeed in college.

Participants received an instructional letter at the beginning of each interview which was conducted by one of

the 2 veteran investigators and lasted an average of 45 minutes. In addition to demographic information, quantitative data were gathered prior to and during the interviews that assessed participants' perceptions of their own and other veterans' comfort with seeking social and academic support, gauge their awareness of resources for veterans, and assess their comfort in being affiliated with programs created for student veterans.

All interviews were conducted in person in a private study room on campus with one exception, one respondent completed the interview by phone. Investigators recorded field notes during each interview (omitting personal identifiers) and periodically restated the responses to ensure that participants' statements were fully understood. Verbatim statements were repeated to be sure they were recorded correctly. At the completion of the interview, participants were each given a $3.00 gift card as an incentive.

Data Analysis

The field notes were compiled by the 2 investigative interviewers and read repeatedly and independently by all 3 researchers. Open coding and constant comparative analysis was used during these readings.[16] Once the researchers discerned the patterns and themes found in the data from each of their perspectives, they discussed and determined major themes together. The resulting categorized emerging themes well exceeded the minimum of 2 confirmations suggested by Miles and Huberman.[17] Quantitative data gathered in this study were entered into a database using no personal identifiers and were analyzed using SPSS (IBM Corp, Armonk, NY).

Trustworthiness of the data was ensured through a verification process created by an initial independent assessment of the data for major themes by each investigator,[18] which resulted in agreement on prominent themes. All 3 researchers independently noted saturation with the data as themes were repeated consistently throughout data collection, and new cases resulted in little variance.[19] In addition, the 2 investigators who interviewed participants have extensive military experience, including combat deployment, and have been immersed in the military milieu and enrolled as student veterans. Quantitative data were employed as a method to further triangulate the data and affirm the accuracy of qualitative analysis.

Results

Demographics

Of the 10 respondents, 70% were male. Eighty percent of the participants were undergraduate students and 20% were enrolled in graduate programs. They had a mean age of 30 (SD=7.23) and ranged in age from 23 to 47 years. Forty percent had served in the Army or Army Reserve components, 20% in the Marine Corps or Marine Corps Reserve component, 20% in the Navy, and 20% in the Air Force. The average time served in the military was 5.15 years (SD=3.26). Seventy percent of the participants were deployed to a combat zone while on active duty. Eighty percent of the participants left active duty at junior enlisted ranks (E5 and below) and 20% were junior officers (O3 and below) at the time that they left active service. On average, participants were separated from the military before beginning school for 43.5 months (SD=37.81) and had completed 3.7 college semesters at the time of the interviews (SD=2.26). Though specific GPAs for each participant were not recorded, each participant reported that they were in good academic standing at the time of the interview. All 10 participants lived off campus. Fifty percent of the participants were employed and one was serving in a military reserve component. Half also stated they were in committed relationships and only one reported having children.

Data gathered about gender, branch of service, and deployment status in this study sample were comparable to that of the active duty component of military service.[20,21] Similar to the study sample, the majority of active duty service personnel were male (86%). About 40% of personnel in the active military were in the Army, 22% in the Air Force, and 22% in the Navy. Sixty-seven percent of the Army personnel had deployed compared to 70% of the total study sample.

Qualitative Findings

Qualitative findings are presented according to themes associated with the undergraduate and graduate student veterans' (1) perceived strengths helpful in the college environment, (2) perceived challenges experienced in their college experience, (3) ideal support resources, and (4) perceptions regarding low participation of student veterans in established support programs.

Perceived Strengths

Participants were asked to identify strengths they thought they had gained from their time in the military that they considered assets in a college environment. The unanimous and prominent themes that emerged from the data were (1) self-discipline (2) leadership and teamwork abilities, and (3) possessing new perspectives and different/valuable experiences as a result of their military service.

Self-Discipline

Study participants described how the work ethic and time management skills that were a part of military life were strong assets in an academic setting. They shared how these qualities and skills related to behaviors such

as attending each class on time, meeting deadlines for assignments and papers, preparing adequately for upcoming exams, and coordinating plans with peers for group assignments. When describing how strengths developed in the military transferred to academic activities, one participant stated:

> The biggest (strength I have) is a sense of discipline… In the military…you finish tasks that are assigned to you and that helps with doing homework. I feel like I have to get homework done the same way.

Leadership and Teamwork

Participants attributed the refinement of their leadership and teamwork abilities to the communication skills required of them within the different professional roles they assumed in the military. Interviewees described how their military duties often involved being responsible for teams, communicating effectively with seniors and subordinates, managing group conflict, and giving briefings to other service members. One veteran discussed the perceived strength of leadership by saying:

> I learned how to interact with people. [I] know how to work with people…how to be on a team and lead a team…I have self-confidence.

The participants found that these experiences aided them in confidently participating in team and groupwork activities in an academic environment.

New Perspectives and Different/Valuable Experiences

Student veterans repeatedly mentioned their ability to bring a different perspective into the classroom as a result of unique experiences in the military as strengths. Interviewees described how having such a variety of responsibilities and experiences in their pasts allowed them to have insights and perspectives about material covered in class that were different from students without military experience. These experiences also provided motivation for excelling in school. For example, one student shared his personal reasons for pursuing a degree:

> Losing my brother [in combat] helped put things into perspective for me and motivated me to make something of myself and reach my full potential. So many people want to be [in college], to have the opportunity to do this…I want to make the most of these opportunities for that reason.

Other veterans discussed how their time in the service helped prepare them to manage stress. Participants described how the stress they endured in the military made the stress faced in college much easier to handle. Speaking of the confidence gained from enduring challenges in the military, one interviewee said:

> There's nothing here I can't do after my accomplishments in the military.

Perceived Challenges

Three predominant perceived challenges were prevalent in the data: (1) social interactions with other students, (2) financial stress, and (3) experiencing culture and/or role differences. These themes are described below.

Social Interactions

Student veterans unanimously expressed frustration over social interactions with other students. One participant said:

> Socially connecting with other [undergraduate] students is difficult…it's hard to find common ground with other students.

Participants described how, in military environments, unit members often share a close bond as they spend large amounts of time together in high-stress situations. Adjusting to the absence of that bond was described as difficult by some of the participants. One student veteran expressed these sentiments by saying:

> You're used to a tight knit community, but here it's like you're an island…I miss that camaraderie.

In addition to a lack of common ground, student veterans mentioned that the maturity and attitudes of their college peers were significant barriers to social connection. Elaborating on these differences, one student said:

> I have experienced frustration with the attitudes of other students. They complain a lot about the reading and work they have to do.

Another participant talked about how the complaints of some students seemed "trivial" after enduring the discomforts that he had in the military. Others mentioned that being older than most students, in addition to having different experiences and backgrounds, made connecting socially challenging.

Financial Stress

Several of those interviewed explained that financial stress added an additional burden to being a student veteran. Although financial stress is most likely experienced by student civilians, this concern is tied to a transition for student veterans. While on active duty, their basic housing, medical, and food expenses were met by the military. As a student, however, the veterans were independently responsible for their finances. Transitioning between these financial situations was described as difficult for some of the interviewees. "Money is the biggest problem I face," said one student, "the military was stable and you always had a paycheck."

Culture/Role Adjustments

A final challenge that emerged as a theme was the veteran's need to adjust to a new culture and role as she/he left active duty to become a college student. Some of the participants described their difficulties in leaving leadership or management roles in the military to assume the role of a new student. Others described how the nuances and cultural norms of military environments were different from those in a college setting and that they had to be intentional about interacting with others appropriately. For instance, multiple study participants described how in military circles it may be appropriate to speak very directly and assertively to others, whereas that type of interaction could be perceived as rude or aggressive in college. One participant said:

> The biggest [challenge] is learning how to become a civilian after living in the military. The culture is a lot different. You're no longer in charge of anyone and you have to act more cordial toward others.

Ideal Support

The predominant themes that emerged when describing ideal support resources for student veterans were that an ideal program to assist them would be socially focused and offer services to help connect them with the VA or other financial resources. One veteran stated:

> Social support would be the biggest purpose of the [ideal] program, to help [veterans] feel connected again to something.

Another explained:

> The thing I would appreciate the most is…if someone were to contact me and provide social help, especially opportunities to learn about financial help.

Another participant again emphasized the need for social support and stated:

> I would love to talk to people sometime, people who understand what I've been through. So many people feel isolated and alone.

Reasons for Low Participation in Existing Programs

Three themes emerged as possible explanations for low participation in support programs: (1) not wanting to be identified as veterans on campus, (2) having a lack of free time, and (3) living off campus.

"Some people get out and want nothing to do with the military," explained a male veteran. Another suggested, "Veterans don't respond possibly because they have a lot going on, like family and jobs. Students don't have time to participate." Participants also mentioned that, like nontraditional students in general, most student veterans live off campus and may not have the time or means to return to campus for evening meetings (all 10 participants in this study lived off campus). Participants repeatedly stated that future programs should be highly visible and actively promoted to encourage participation.

Quantitative Responses

Participants were asked to complete survey questions using a Likert scale of 1 (minimal comfort) to 10 (maximum comfort) and share their own perceptions and their thoughts about other student veterans' attitudes regarding topics that corresponded with the qualitative interview questions (eg, perceived comfort with seeking social and academic support, awareness of resources for veterans, and comfort with being affiliated with programs created for student veterans). Veteran students on average rated their own level of comfort in seeking social support as a 6.5 (SD=2.84) and rated other student veterans at a 4.9 (SD=4.8). Students rated their own level of comfort with being affiliated with groups created for student veterans at an average score of 7.4 (SD=2.84) and other students' comfort in doing so lower (mean=6.55, SD=1.83).

When asked about their own awareness of resources available to student veterans, they rated themselves as moderately aware (mean=6.9, SD=2.28). They assessed other student veterans' level of awareness of resources as lower (mean=5.02, SD=1.93). Quantitative responses were consistent with the themes generated in qualitative analysis. Details of these perceptions among student veterans are presented in the Table.

Comment

The study's themes were consistently found across participants' responses. This was especially evident regarding the themes of discipline, work ethic, and time management, which were generated when exploring for perceived strengths of the veteran students and mentioned in some way by each participant. Likewise, the challenge of having difficulties or frustrations with social connections and interactions with other students was also brought up in each interview, a challenge further reinforced by the participants' recommendation that support programs for veterans be primarily socially focused and be actively promoted in order to improve participation levels. Data gathered to better understand the potential challenges veteran students may face could inform the development of campus support resources specific to their needs. Both qualitative and quantitative findings suggested that veterans might not be comfortable seeking out social support on the college campus. The discomfort or reluctance to seek support found in this study sample is consistent with findings in previous

research by Livingston et al[8] who discussed how student veterans' pride and humility can result in self-reliance and curtailed their pursuit of support.

Study findings also suggest that student veterans' awareness of available support programs could be improved and utilization may be increased as a result of intentional marketing efforts. Participants consistently rated themselves higher on all quantitative items in this study compared to their perception of the level of comfort of other student veterans who did not participate in the study. This difference might be explained by the participants' self-selection to participate in this research and/or a greater degree of confidence in speaking for themselves rather than for others which yielded more conservative responses.

The predominant qualitative themes described by this sample of active military student veterans were found to be compatible with those discussed in previous studies involving veterans attending college.[7,9,10,14] Previous study findings yielded themes including veterans' relational difficulties with other students, ambivalence about not having the camaraderie of military life, and financial stressors, all of which were notably consistent with primary themes found in this study. While common misconceptions of student veterans are often focused on them being a disadvantaged population with prevalent mental health issues,[22] the cumulative findings of this and previous studies suggest that student veterans are a population with significant strengths who may benefit from social support provided by others who understand their experiences. Support services also appear to positively influence the academic achievement of student veterans. Theoretical models such as that proposed by Tinto purport that engagement and integration in the campus community positively influence student retention[23] as does feeling a sense of belongingness on campus.[14] Gilardi and Gugielmetti[13] found a strong positive correlation between the retention of nontraditional students, their perceived social integration (relationships in and out of class with other students and faculty), and their use of university support services. Indeed, a recent study showed that veteran students outperformed their civilian counterparts when provided appropriate support.[24] The results of these other studies underscore the importance of promoting the engagement of student veterans with other students and faculty on campus and establishing relevant support services.

Veteran Students' Perceptions of Comfort in Seeking Support and Resource Awareness.*

Item	Response mean (SD) (N=10)
To what extent are you comfortable seeking social support?	6.5 (2.8)
To what extent do you think other students with military experience are comfortable seeking social support?	4.9 (0.9)
To what extent are you comfortable with seeking academic support?	7.4 (2.2)
To what extent do you think other students with military experience are comfortable seeking academic support?	5.9 (1.3)
To what extent do you think that you are aware of the resources and programs available to students with military experience?	6.9 (2.3)
To what extent do you think other students with military experience are aware of the resources and programs available to them?	5.2 (1.9)
To what extent are you comfortable being affiliated with groups created specifically for student veterans?	7.4 (2.8)
To what extent do you think other students with military experience are comfortable being affiliated with groups created specifically for student veterans?	6.5 (1.8)

*Data generated from Likert scale responses: 1 (minimal comfort/awareness) to 10 (maximum comfort/awareness)

Both the qualitative and quantitative findings of this study support these actions to encourage engagement and offer opportunities for support to student veterans. The respondents spoke of social frustrations and their need for improved social support. The potential for supporting student veterans (and students who continue to serve) exists in both military and academic settings. Several veterans interviewed mentioned the lack of preparation they felt they received as they transitioned out of the military and suggested that improvements could be made to existing transition programs bridging these 2 environments. One veteran in this study, who was still serving as a Reservist, suggested that transition programs could focus on making connections with VA and campus resources, reviewing study habits, and helping service members understand some of the social and financial challenges of leaving military culture. Commanders, noncommissioned officers, and medical/behavioral health providers working with service members preparing to leave active duty (or Reserve component service members preparing to leave a deployment or active duty status) could also have a great effect in providing counseling and guidance during this transition. Wilson et al[25] applied Tinto's integration theory to the nontraditional experience using a systems perspective and suggested that the community into which these students are assimilating should be broadly defined and account for the various elements of their worlds. For example, the "community" for military students should encompass both the university campus and their military context when facilitating integration. Indeed, Wilson and colleagues found that the Soldier participants in

their study reported that support of their endeavors from their unit command was important to them when pursuing their education.

Data from this study and others suggest the need to better understand established and existing resources that specifically serve student veterans. An example of such support in an academic setting is a Veterans Resource Center, such as the one established at the University of Kentucky (https://www.uky.edu/Veterans/benefits.htm), which houses a full time student veteran liaison and a student-led veterans' organization. The student liaison can assist with applications for veterans' benefits, and promote and advocate for veterans' support programs. The veteran-focused organization provides a setting for veterans to connect with other veterans. These centers can also provide information and referrals for campus and VA mental health resources, efforts mentioned as important in this study. Additionally, faculty can be encouraged to make intentional efforts to engage nontraditional students, including student veterans, in and out of class to develop professional relationships that serve as a "protective factor" against student attrition.[13] Targeted efforts to educate faculty and civilian students of the experiences and needs of students with military experience, such as that of the VET Net Ally program,[26] may also serve to improve the campus community's understanding of the needs and experiences of students with military experience.

In sum, the strengths participants perceived they brought to their education to help them excel in their academic endeavors as a result of their military service included self-discipline, leadership abilities, unique perspectives on classroom material, and the ability to manage stress. Employing a strengths-based perspective[27] when interacting with student veterans may assist faculty, advisors, and other support staff to recognize and emphasize the strengths student veterans bring to academic environments. Veteran and military students and faculty can also assume leadership roles in advocating for student veterans by helping other personnel on college campuses understand this population's unique strengths and challenges.

Limitations and Future Directions

While the participants in this study provided valuable insights and consistent themes emerged in their interviews, the number of participants in this qualitative study represented a very small number of the approximately 500 student veterans at the University of Kentucky in 2011 (T. Dotson, oral communication, March 22, 2011). Further research with larger samples that capture the diversity of this population would be useful to build a more comprehensive understanding of their strengths, challenges, and characteristics of potentially beneficial services. Given the low response rates and discretion that can be characteristic of this population, a factor addressed in this study and in that of Livingston et al,[8] increased time, personnel, and financial support may be required to reach out to and increase response rates in future studies. Additionally, this study does not include a number of variables that could help to more fully describe the study sample. It is recommended that future research efforts include additional demographic variables such as respondents' academic performance, choice of majors, and military experience beyond what is presented in this study to better understand the demographics and characteristics of veteran students' experiences and assess the generalizability of study findings. Student veterans represent a diverse population consisting of subsets that merit their own individual examination in research efforts, such as students who are attending school while also serving as members of the active duty or reserve component military. This population's academic success directly affects the military as service members develop professional expertise and pursue career advancement through their college endeavors. Gaining an understanding of student veterans through additional research efforts may provide guidance for implementation of support and transition programs that promote successful entry of service members into the campus community and their retention. With their diverse skill sets and experiences and effective support, student veterans can excel in academic environments, just as they did in their military service.

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Mental Health Outreach and Screening Among Returning Veterans: Are We Asking the Right Questions?

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Abstract

This study looked at predictors of mental health treatment utilization in a unique cohort of recently separated Veterans coming to the Department of Veterans Affairs (VA) (N=152). This convenience sample voluntarily completed questionnaires, which included mental health screening tools, during an outreach event at a large urban VA Medical Center. Researchers reviewed computerized medical records of these consenting participants to record VA treatment utilization. There is a statistically significant association between posttraumatic stress disorder screening results, functional impairment, and treatment-seeking. Certain functional impairments increase the odds of participation in VA mental health care. These include problems with school and/or work (odds ratio (OR)=2.8), physical fights (OR=2.8), physical health problems (OR=3.0), financial difficulties (OR=3.0), irritability/anger (OR=3.4), isolation (OR=3.8), drug use (OR=5.7), and problems with social support (OR=7.0). This study concluded that asking about symptoms alone may not capture the breadth and nature of Veterans' postdeployment difficulties.

The US military and Veterans Health Administration (VHA) regularly conduct outreach with the hope of engaging those who need it in effective treatment. The need for active mental health outreach is apparent. Estimates place the prevalence of posttraumatic stress disorder (PTSD) among returning Veterans between 10% and 20%.[1,2] Despite these high rates, treatment utilization rates among returning Veterans remain low with only half of those who indicate mental health problems seeking help from the military or VHA.[3] According to the most recent VHA health care utilization report, roughly 55% of all separated Veterans of Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and Operation New Dawn (OND) Veterans used VHA health care. Of those, 53.3% carried a mental health diagnosis.[4]

The response to this unmet need for mental health treatment includes regular screening both in the VHA and Department of Defense (DoD), both of which provide active screening to detect the presence of potential mental health symptoms and guide referral to appropriate services.[5,6] Screening gathers important information for providers and researchers alike. Identifying Veterans who may be experiencing difficulties and responding with appropriate treatments can prevent long-term disability and chronic difficulties.[7] These screening tools also provide important data for epidemiological studies of treatment utilization and need.[8]

The VHA currently uses the 4-item Primary Care PTSD Screen (PC-PTSD) to identify Veterans who may have PTSD.[9,10] Primary care providers then use this information to guide referrals for mental health treatment. When compared with the Clinician Administered PTSD Scale (CAPS), the screen has the ability to correctly identify 78% of PTSD cases.[9]

While research demonstrates that the PC-PTSD screen can accurately predict a PTSD diagnosis, research has not demonstrated whether the screen is useful for predicting treatment use. Within the VHA, regular screening provides a means of referring Veterans for treatment. In one study, 38% of Veterans who screened positive on the PC-PTSD screen (by answering "yes" to any 2 of the 4 questions) completed a mental health follow-up visit within 90 days.[11] Screening instruments in non-VA or civilian primary care settings are more likely to capture those with more severe diagnoses of PTSD,[12] which means screens may not aid in identifying individuals who may benefit from intervention before their symptoms become worse. Research has also shown that

age plays a factor in the effectiveness of the PC-PTSD screen in referring Veterans for treatment. One study showed that Veterans aged 30 to 44 years are 57% less likely than Veterans aged 18 to 29 years to attend any mental health visits after screening positive on the PC-PTSD screen. Older veterans, over the age of 75, are the least likely to attend a follow up appointment.[13]

One reason for concern about VHA screening measures predicting treatment use might be that screening focuses on symptoms rather than on functioning in daily life. The concern is that screening procedures may underestimate the impact of subthreshold symptoms, thus deterring seeking help before problems get worse.[14] Returning combat Veterans report difficulties in their general functioning and adjustment to civilian life, independent of diagnosis,[15] and it is often these functional impairments that are foremost among their concerns.[16] Researchers at the VHA Puget Sound[17] found that OEF/OIF Veterans with PTSD were no more likely than Veterans with subthreshold PTSD (as measured by the Posttraumatic Stress Disorder Checklist–Military Version) to endorse difficulty with aggression. There is a broad body of literature that also points to examination of distress that does not necessarily meet diagnostic thresholds yet still merit intervention.[18,19] Functional difficulties, or problems related to everyday life, may provide a glimpse into these subthreshold conditions.

This study sought to uncover the relationship between screening for functional impairments and mental health care engagement among a cohort of new VHA enrollees. This study was designed to answer 3 main research questions:

1. What types of functional impairments do service members and Veterans report?
2. What associations exist between problem presentation and eventual VHA treatment-seeking?
3. Can screening for functional impairment better predict VHA mental health treatment-seeking than screening for PTSD symptoms alone?

Methods

Following approval from a Veterans Administration Medical Center Committee on Human Subjects and the Research and Development Committee, questionnaires were distributed to Veterans during a "Welcome Home" event. This event was held by the VHA at a sports stadium in a suburb of a major US city in the summer of 2010 for Veterans who recently returned from deployment. This event offered Veterans the opportunity to learn more about and enroll in the VHA. It targeted a group of Veterans who may or may not decide to seek VHA care. The authors often work in a clinical capacity at these events, offering screening and support. The usefulness of such events, beyond enrollment numbers, had not yet been examined in a research capacity.

Researchers provided a full description of the study both verbally and in writing. Participants provided written informed consent and completed questionnaires that included clinical screening tools and questions about military history, perceived stigma, and attitudes toward the VHA. At this time, Veterans also provided consent for a review of their medical records. Demographic questions like age, gender, and housing status were also included.

In December 2011, researchers reviewed computerized medical records of consenting participants to record treatment utilization data. This information was coded according to standard criteria and entered into the dataset. Of note, the race/ethnicity variable was taken from chart reviews of VHA records.

Questionnaire

The questionnaire included the PC-PTSD Screen[5]; the yes/no version of the 2-item Patient Health Questionnaire (PHQ-2)[20] to assess for possible depression; the Cut down, Annoyed, Guilty, and Eye-opener (CAGE)[21] and the Alcohol Use Disorders Identification Test-C (AUDIT-C)[22] to assess for alcohol abuse; and the VHA's traumatic brain injury (TBI) screening tool.[23] The TBI screening tool consists of items that ask about mechanism of head injury as well as immediate and long term postconcussive symptoms.

Two other assessments were created. While not validated measures, these questions were adapted from the literature and clinical observation to asses for perceived barriers to care[24] and functional difficulties.[25] The functional impairment questions asked Veterans on a 4-point Likert scale (None=1, Severe=4) to rank their level of difficulty with road rage or driving, school/education or work, relationships, finances, irritability or anger, isolation, physical fights, drug use, social support, physical health, sleep, and home life.

Electronic Health Records

In addition to data collected by questionnaire, a brief chart review for each subject was conducted with available records to determine VHA health care use. Data collected in these chart reviews included percentage of service connected disability benefits (including service connection due to mental health diagnoses), race and ethnicity, and VHA health care use. These included data points for all VHA medical encounters (eg, specialist

referrals, primary care appointments), receipt of VHA mental health treatment, and mental health diagnoses (ie, depression, PTSD, Bipolar, Anxiety and/or other). Mental health treatment was defined as care provided in a mental health clinic by a psychiatrist, psychologist, social worker, registered nurse, or nurse practitioner.

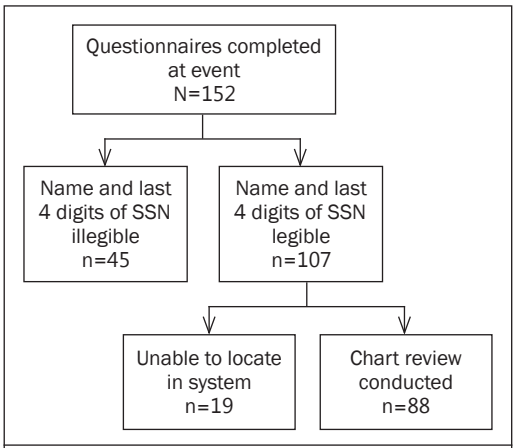
Statistical Analyses

Associations between categorical variables were examined using χ^2 tests for association. Logistic regression was used to examine prediction models with utilization as the dependent variable. Data were analyzed using SAS Version 9.2 (SAS Institute Inc, Cary, NC) with $P \leq .05$ considered significant. Corrections were not made for multiple comparisons as this is considered a pilot study with initial results presenting important questions to guide future research. Full P values are provided to assist with interpretation. The study is powered to detect a medium effect size (Cohen's d=0.5) for bivariate associations and for multiple regression.

Sample

The sample included consenting service members and Veterans who attended the event. For some, the event was their only contact with the VHA system of care. Others had used VHA health care services. Inclusion criteria stipulated that participants had to be an OEF/OIF active duty service member or an OEF/OIF veteran.

At the event, 152 questionnaires were completed. Research assistants then conducted chart reviews using VHA computerized records on the 88 participants with available records. The process flow in shown in the Figure. Questionnaires that were partially completed or did not have the Veteran's name or other identifying information were included in the dataset. Chart reviews were not performed for questionnaires that either did not have needed identifiers (n=45) or in which identifiers were provided but the participant was locatable in the VHA electronic medical record system (n=19). The final sample was split into 2 groups for initial analyses as shown in Table 1. This consisted of participants who had a chart review completed (n=88) and those who did not (n=64). No clinical data on treatment use could be provided for those Veterans who did not have a chart review completed.



Processing of participants' questionnaires and chart reviews.

Results

Subjects

Bivariate analyses showed few significant differences between Veterans with and without chart reviews. There were more women in the group without a chart review (χ^2=9.3, $P \leq .001$). Forty percent of participants who did not have chart reviews responded that they had children compared with 20% of those with chart review data (χ^2=8.0, P=.02).

Results of Screening, Report of Functional Impairment, and VHA Treatment-Seeking

Of the total sample (N=152), 28.9% of Veterans screened positive for PTSD (endorsed 2 or more PTSD symptoms), 34.0% screened positive for depression, and 35.4% screened positive on the CAGE. A large number of Veterans chose not to respond to the AUDIT-C (n=56). Of the 96 who did respond, 35.4% screened positive. Many Veterans also left the TBI screen blank, of the 72 who did respond, 36.1% screened positive. Veterans reported problems with numerous functional difficulties. These included moderate to severe problems with drug use (2.0%), social support (6.7%), physical fights (7.9%), physical health (8.5%), home life (8.5%), isolation (16.8%), finances (18.4%), school/education/work (19.8%), relationships (21.7%), road rage or driving (27.0%), irritability/anger (34.3%), and sleep (34.9%).

Bivariate analyses were used to determine associations between problem presentation and eventual VHA treatment-seeking. A χ^2 test for association was used to determine the relationship between conditions reported and receipt of any VHA treatment (ie, mental health and/or medical treatment) (Table 2). The population described in Table 2 consists only of those Veterans who had a chart review completed (n=88). Results indicate that one-half of those Veterans (n=44) eventually sought VHA health care after the event. Analyses showed that stable housing, PC-PTSD screen responses, AUDIT-C responses, TBI screen responses, the CAGE, and PHQ-2 were not significantly associated with VHA treatment. However, 2 functional impairments appeared to be significantly associated with VHA treatment-seeking. Twenty percent of participants who sought VHA medical and/or

mental health treatment reported moderate or severe difficulty with isolation (a functional impairment that is not assessed in diagnostic screening tools). This is in comparison to 9% among those who did not seek VHA treatment (χ^2=11.1920, *P*=.0107). Similarly, the majority of those who did not receive VHA treatment (90.9%) did not self-report any problems with social supports. Those who sought VHA treatment were more likely to report problems related to social support (χ^2=11.3002, *P*=.0035). No other functional impairments were statistically significantly associated with any VHA treatment.

Table 1. Demographic Characteristics of Sample: VA Chart Review Versus No VA Chart Review

		Chart Review Completed (n=88) Number (%n)	Chart Review not Completed (n=64) Number (%n)	χ^2	*P* value
Age, years	<=25	8 (42.1%)	45 (51.1%)	2.5554	.4654
	26-30	7(36.8%)	31 (35.2%)		
	31-35	1 (5.3%)	7 (8.0%)		
	36+	3 (15.8%)	5 (5.7%)		
	Missing	0	45		
Gender	Female	1 (1.1%)	3 (15.8%)	9.324	.0023
	Male	87 (98.9%)	16 (84.2%)		
	Missing	0	45		
Race	White	54 (61.4%)	Not available (chart reviewed for race variable)		
	Unanswered/Unknown	23 (26.1%)			
	African American	7 (8.0%)			
	Other (Multiple or Asian)	4 (4.5%)			
Ethnicity	Hispanic/Latino	8 (9.1%)	Not available (chart reviewed for ethnicity variable)		
	Not Hispanic/Latino	56 (63.6%)			
	Unanswered/Unknown	24 (27.4%)			
Marital Status	Married	35 (39.8%)	27 (42.2%)	2.2365	.6923
	Remarried	0 (0%)	1 (1.6%)		
	Divorced	3 (3.4%)	3 (4.7%)		
	Separated	3 (3.4%)	1 (1.6%)		
	Never Married	47 (53.4%)	31 (48.4%)		
	Missing	0	1		
Children	Yes	18 (20.5%)	25 (39.7%)	6.6646	.0098
	Missing	0	1		
Service Status	Enlisted	74 (86.1%)	56 (93.3%)	1.9232	.1655
	Officer	12 (14.0%)	4 (6.7%)		
	Missing	2	4		
Branch	Army	1 (1.1%)	3 (4.7%)	4.792	.091
	Marine Corps	87 (98.9%)	58 (90.6%)		
	Navy	0 (0%)	2 (3.1%)		
	Missing	0	1		
Rank	E-3	13 (17.3%)	6 (11.3%)	3.673	.452
	E-4	31 (41.3%)	17 (32.1%)		
	E-5	26 (34.7%)	23 (43.4%)		
	E-6	3 (4.0%)	5 (9.4%)		
	E-7+	2 (2.7%)	2 (3.8%)		
	Missing	13	11		
Deployments	0	2 (2.6%)	0 (0%)	4.5165	.4777
	1	25 (32.5%)	21 (39.6%)		
	2	40 (52.0%)	27 (50.9%)		
	3	9 (11.7%)	4 (7.6%)		
	4	1 (1.3%)	0 (0%)		
	5	0 (0%)	1 (1.9%)		
	Missing	11	11		

Results of Screening, Report of Functional Impairment, and VHA Mental Health Treatment-Seeking

A total of 23 Veterans sought mental health treatment following the Welcome Home event. Bivariate analyses using a second χ^2 test were conducted to determine factors associated with VHA mental health treatment. Certain functional impairments increase the odds of participation in VHA mental health care (Table 3). These include problems with irritability/anger (odds ratio (OR)=2.5, *P*=.0333), school and/or work (OR=3.5, *P*=.0174), difficulty with sleep (OR=4.8, *P*=.0283), physical health problems (OR=10.9, *P*=.0010), and difficulties with social support (OR=11.3, *P*=.0008). Veterans who reported 3 or more functional impairments were 3 times more likely to engage in mental health treatment (OR=3.1, *P*=.0254). There was no association between screening positive on the PC-PTSD or PHQ-2 screens and participation in mental health treatment.

Statistically significant functional impairments were selected for inclusion in a series of logistic regressions. These regressions were used to calculate odds ratios and 95% confidence intervals for the associations between functional impairment and mental health treatment after controlling for a positive PC-PTSD screen and a positive PHQ-2 screen (Table 4). After controlling for a positive PC-PTSD screen, Veterans who reported difficulty with school or work (OR=3.5, *P*=.0239), irritability or anger (OR=3.2, *P*=.0339), social support (OR=11.8, *P*=.0049), physical health (OR=12.9, *P*=.0050), or sleep (OR=3.1, *P*=.0333) were more likely to seek mental health treatment. After controlling for a positive PHQ-2 screen, Veterans who reported difficulty with school or work (OR=3.3, *P*=.0425), social support (OR=10.9, *P*=.0059), or physical health (OR=10.4, *P*=.0087) were more likely to seek mental health treatment.

Comment

Once enrolled in the VHA, seeking treatment for a mental health condition, as defined by a visit to a mental

Table 2. Functional Impairment, Diagnosis and Prediction of Any VHA Treatment

		Total Sample (N=152) Number (%N)	VHA Treatment* Number Who Received Any VHA Treatment (n=44) Number (%n)	Number Who Did Not Receive Any VHA Treatment (n=44) Number (%n)	χ^2	*P* value
PTSD Screen	Positive	43 (28.9%)	15 (34.1%)	10 (76.7%)	1.2467	.2642
	Negative	106 (71.1%)	29 (65.9%)	33 (76.7%)		
PTSD Screen Responses	Nightmares	39 (25.7%)	13 (29.6%)	9 (20.9%)	0.8544	.3553
	Avoidance	37 (24.7%)	11 (25.0%)	8 (18.6%)	0.5211	.4704
	Hypervigilance	46 (30.5%)	16 (36.4%)	13 (30.2%)	0.3679	.5442
	Numbing	44 (29.1%)	14 (31.8%)	11 (25.6%)	0.4131	.5204
AUDIT-C	Positive	62 (64.6%)	31 (73.8%)	22 (61.1%)	1.4356	.2309
	Negative	34 (35.4%)	11 (26.2%)	14 (38.9%)		
TBI	Positive	26 (36.1%)	7 (38.9%)	8 (47.1%)	0.2383	.6254
	Negative	46 (63.9%)	11(61.1%)	9 (52.9%)		
CAGE	Positive	51 (35.4%)	17 (40.5%)	15 (37.5%)	0.0763	.7824
	Negative	93 (64.6%)	25 (59.5%)	25 (62.5%)		
Depression	Positive	51 (34.0%)	17 (38.6%)	13 (30.2%)	0.6798	.4096
	Negative	99 (66.0%)	27 (61.4%)	30 (69.8%)		
Functional Difficulties						
Road rage/driving	None	70 (46.1%)	17 (38.6%)	20 (45.5%)	1.042	.7910
	Mild	41 (27.0%)	13 (29.5%)	14 (31.8%)		
	Moderate	32 (21.1%)	12 (27.3%)	9 (20.5%)		
	Severe	9 (5.9%)	2 (4.5%)	1 (2.3%)		
School/education/ work	None	89 (58.6%)	26 (59.1%)	25 (56.8%)	0.5752	.9021
	Mild	32 (21.2%)	8 (18.2%)	10 (22.7%)		
	Moderate	25 (16.5%)	8 (18.2%)	8 (18.2%)		
	Severe	5 (3.3%)	2 (4.5%)	1 (2.3%)		
Relationships	None	76 (50.0%)	20 (45.5%)	25 (56.8%)	4.1969	.2410
	Mild	43 (28.3%)	10 (22.7%)	13 (29.5%)		
	Moderate	26 (17.1%)	11 (25.0%)	5 (11.4%)		
	Severe	7 (4.6%)	3 (6.8%)	1 (2.3%)		
Finances	None	86 (56.7%)	23 (52.3%)	25 (56.8%)	0.2142	.9753
	Mild	37 (24.3%)	13 (29.5%)	12 (27.3%)		
	Moderate	23 (15.1%)	6 (13.6%)	5 (11.4%)		
	Severe	5 (3.3%)	2 (4.5%)	2 (4.5%)		
Irritability/anger	None	57 (37.5%)	13 (29.5%)	18 (40.9%)	4.4435	.2174
	Mild	43 (28.3%)	13 (29.5%)	14 (31.8%)		
	Moderate	32 (21.1%)	10 (22.7%)	10 (22.7%)		
	Severe	20 (13.2%)	8 (18.2%)	2 (4.5%)		
Isolation	None	81 (54.4%)	16 (36.4%)	31 (70.5%)	11.1920	.0107
	Mild	43 (28.9%)	19 (43.2%)	8 (18.2%)		
	Moderate	19 (12.8%)	7 (15.9%)	3 (6.8%)		
	Severe	6 (4.0%)	2 (4.5%)	1 (2.3%)		
Physical fights	None	112 (76.7%)	27 (61.4%)	34 (77.3%)	2.6604	.2644
	Mild	28 (18.4%)	13 (29.5%)	8 (18.2%)		
	Moderate	12 (7.9%)	4 (9.1%)	2 (4.5%)		
	Severe	0	0	0		
Drug use	None	140 (92.1%)	38 (86.4%)	42 (95.5%)	2.8667	.2385
	Mild	9 (5.9%)	5 (11.4%)	1 (2.3%)		
	Moderate	2 (1.3%)	1 (2.3%)	1 (2.3%)		
	Severe	1 (0.7%)	0	0		
Social support	None	119 (79.9%)	27 (64.3%)	40 (90.9%)	11.3002	.0035
	Mild	20 (13.4%)	7 (16.7%)	4 (9.1%)		
	Moderate	10 (6.7%)	8 (19.0%)	0		
	Severe	0	0	0		
Physical health	None	96 (63.2%)	23 (52.3%)	29 (65.9%)	6.0256	.1104
	Mild	43 (28.3%)	14 (31.8%)	14 (31.8%)		
	Moderate	9 (5.9%)	5 (11.4%)	0		
	Severe	4 (2.6%)	2 (4.5%)	1 (2.3%)		

Table 2 continued on the next page.

***Includes mental health treatment.**

Table 2 (continued). Functional Impairment, Diagnosis and Prediction of Any VHA Treatment

		Total Sample (N=152) Number (%N)	VHA Treatment*			
			Number Who Received Any VHA Treatment (n=44) Number (%n)	Number Who Did Not Receive Any VHA Treatment (n=44) Number (%n)	χ^2	*P* value
Sleep	None	63 (41.5%)	15 (34.1%)	19 (43.2%)	1.7087	.6350
	Mild	36 (23.7%)	10 (22.7%)	11 (25.0%)		
	Moderate	33 (21.7%)	13 (29.5%)	8 (18.2%)		
	Severe	20 (13.2%)	6 (13.6%)	6 (13.6%)		
Home life	None	97 (63.8%)	25 (56.8%)	29 (65.9%)	4.8677	.1817
	Mild	42 (27.6%)	13 (29.5%)	13 (29.5%)		
	Moderate	11 (7.2%)	6 (13.6%)	1 (2.3%)		
	Severe	2 (1.3%)	0	1 (2.3%)		
Stable housing	Yes	137 (92.6%)	39 (88.6%)	38 (90.5%)	0.0776	.7805
	No	11 (7.4%)	5 (11.4%)	4 (9.5%)		
Three or more functional difficulties†	Yes	26 (29.6%)	17 (38.6%)	9 (20.5%)	3.4938	.0616
	No	62 (70.5%)	27 (61.4%)	35 (79.5%)		

*Includes mental health treatment.
†Determined by answering "moderate or severe" to 3 or more functional difficulties.

health professional, is associated with difficulties with school/education or work, irritability or anger, social supports, physical health, and sleep. Surprisingly, screening positive for PTSD, alcohol abuse, TBI, or depression are not associated with seeking treatment for mental health care. After controlling for screening positive for PTSD or depression, functional impairments predicted engagement in mental health treatment. In our study, those Veterans with children were less likely to have a chart review completed, indicating that this sample may be biased towards Veterans without children.

This study joins a body of literature that points to the importance of social support in the treatment and identification of PTSD. Functional social supports are an important factor in recovery from and prevention of symptoms of PTSD for Vietnam Veterans.[26] Specifically, emotional as well as concrete support mediates the effects of war zone stressors on development of PTSD.[27] Other studies of OEF/OIF Veterans indicate that readjustment stressors, including those related to marriage and children are integral to examination of treatment-seeking behaviors among older returning National Guard Veterans.[28] In a path analysis examining PTSD symptoms as the outcome, the effects of postdeployment social support were equal to those of combat exposure.[29] While this study presents similar findings, they are within a younger, recently separated sample.

Implications for Behavioral Health

These results suggest that at outreach events like Welcome Home and within the VHA in general, screening might be improved by assessing functional impairments in addition to psychiatric symptoms. Clinicians should pay particular attention to difficulties with social support when screening for mental health needs among returning service members. Awareness of PTSD symptoms as well as other mental conditions has improved in military settings. Veterans may believe that these symptoms are a normal part of the homecoming process. However, functional difficulties can point to areas where this normal response to abnormal circumstances may result in impairment. Early detection of difficulty with social support, physical health conditions, and school or work may also indicate that while a PTSD or depression screen is negative, Veterans may still benefit from brief interventions at the primary care level or through referral.

Like any health care system, the VHA has a goal of enrolling new users. In the case of the VHA, this means enrolling veterans at the end of their active duty status (ie, like the current sample). These results could help inform VHA policymakers how to better approach and advertise potential VHA users who are not currently enrolled in VHA care. For instance, a campaign conceptualizing VHA as an avenue for additional social support, which in our experience it tends to be (similar to a family, circle of friends, or caring individuals) might be considered.

The importance of functional outcomes, highlighted in these findings, has implications for referral for care and treatment approach. Due to noted difficulties with functional impairment, mental health treatments that target both symptom reduction and functional status may be most effective. This could include multidisciplinary care that combines traditional psychotherapy with tangible resources like case management and systems focused

Table 3. Functional Impairment, Diagnosis, and Prediction of VHA Mental Health Treatment

		VHA Mental Health Treatment*					
		Number Who-Received VHA Mental Health Treatment (n=23) Number (%n)	Number Who Did Not Receive VHA Mental Health Treatment (n=65) Number (%n)	Total (N=88) Number (%N)	χ^2	Odds Ratio	*P* value
PTSD Screen (2 or more)	Positive Negative	7 (30.4%) 16 (69.6%)	18 (28.1%) 46 (71.9%)	25 (28.7%) 62 (71.3%)	0.0441	1.1	.8337
PTSD Screen (3 or more)	Positive Negative	5 (21.7%) 18 (78.3%)	13 (20.3%) 51 (79.7%)	18 (20.7%) 69 (80.3%)	0.0210	1.1	.8848
AUDIT-C	Positive Negative	18 (81.8%) 4 (18.2%)	35 (62.5%) 21 (37.5%)	3(67.9%) 25 (32.1%)	2.7066	2.7	.0999
TBI	Positive Negative	6 (60.0%) 4 (40.0%)	9 (36.0%) 16 (64.0%)	15 (42.9%) 20 (57.1%)	1.6800	2.7	.1949
CAGE	Positive Negative	8 (9.8%) 14 (63.6%)	24 (40.0%) 36 (60.0%)	32 (39.0%) 50 (60.9%)	0.0895	0.52	.7649
Depression	Positive Negative	10 (43.5%) 13 (56.5%)	20 (31.3%) 44 (68.8%)	30 (34.5%) 57 (65.5%)	1.1199	1.7	.2900
Functional Difficulties							
Road rage/driving	None/Mild Moderate/Severe	15 (65.2%) 8 (34.8%)	49 (75.4%) 16 (24.6%)	64 (72.7%) 24 (27.3%)	0.8854	1.6	.3467
School/education/ work	None/Mild Moderate/Severe	14 (60.9%) 9 (39.1%)	55 (84.6%) 10 (15.4%)	69 (78.4%) 19 (21.6%)	5.6584	3.5	.0174
Relationships	None/Mild Moderate/Severe	15 (65.2%) 8 (34.8%)	53 (81.5%) 12(18.5%)	68 (77.3%) 20 (22.7%)	2.5768	2.4	.1084
Finances	None/Mild Moderate/Severe	18 (78.3%) 5 (21.7%)	55 (84.6%) 10 (15.4%)	73 (83.0%) 15 (17.1%)	0.4851	1.5	.4861
Irritability/anger	None/Mild Moderate/Severe	11(47.8%) 12 (52.2%)	41 (72.3%) 18 (27.7%)	58 (65.9%) 30 (34.1%)	4.5316	2.5	.0333
Isolation	None/Mild Moderate/Severe	17 (73.9%) 6 (26.1%)	57 (89.1%) 7 (10.9%)	74 (85.1%) 13 (14.9%)	3.0552	0.8	.0805
Physical fights	None/Mild Moderate/Severe	21 (91.3%) 2 (8.7%)	61 (93.9%) 4 (6.2%)	82 (93.2%) 6 (6.8%)	0.1728	1.5	.6777
Drug use	None/Mild Moderate/Severe	22 (95.7%) 1 (4.4%)	64 (98.5%) 1 (4.4%)	86 (97.7%) 2 (2.3%)	0.6037	2.9	.4372
Social support	None/Mild Moderate/Severe	16 (72.7%) 6 (27.3%)	62 (96.9%) 2 (3.1%)	78 (90.7%) 8 (9.3%)	11.3154	11.6	.0008
Physical health	None/Mild Moderate/Severe	17 (73.9%) 6 (26.1%)	63 (96.9%) 2 (3.1%)	80 (90.9%) 8 (9.1%)	10.8837	11.1	.0010
Sleep	None/Mild Moderate/Severe	10 (43.4%) 13 (56.5%)	45 (69.2%) 20 (30.8%)	55 (62.5%) 33 (37.5%)	4.8071	2.9	.0283
Stable housing	Yes No	20 (87.0%) 3 (13.0%)	57 (90.5%) 6 (9.5%)	77 (89.5%) 9 (10.5%)	0.2228	0.70	.6369
Three or more functional difficulties†	Yes No	11(47.8%) 12 (52.2%)	15 (23.1%) 50 (76.9%)	26 (29.5%) 62 (70.5%)	4.9990	3.1	.0254

*Only treatment in a VA medical center, including medication management.
†Determined by answering "moderate or severe" to 3 or more functional difficulties.

care, such as family therapy. This study also confirms research examining social functioning specifically as a focus of treatment.[30,31] These findings inform a patient-centered care approach; meeting the Veteran where they are is important when screening for mental health problems. Veterans may first present with problems related to everyday life rather than distinct PTSD symptoms. This should be an indication of need for treatment just as much as a positive response to the Primary Care PTSD screen. Veterans may not pursue care because they do not meet criteria for specific programs (eg, the PTSD Clinical Team) and therefore do not necessitate the evidenced-based practices these programs offer. The treatment indicated in these cases may be a referral to family therapy, recreational therapy, or to community support. These referrals, when applied appropriately, may prevent Veterans from developing more complex diagnoses later in life.

Table 4. Odds Ratio Predicting VA Mental Health Treatment Adjusting for Positive PTSD Screen and Positive Depression Screen

	PTSD Screen Positive*		Depression	
Functional Difficulty	Odds Ratio (95% OR)	*P* value	Odds Ratio (95% OR)	*P* value
School or work	3.5 (1.2-10.5)	.0239	3.3 (1.0-10.2)	.0425
Irritability or anger	3.2 (1.1-9.6)	.0339	2.6 (0.9-7.4)	.0721
Social support	11.8 (2.1-65.9)	.0049	10.9 (2.0-59.8)	.0059
Physical health	12.9 (2.2-76.5)	.0050	10.4 (1.8-60.1)	.0087
Sleep	3.1 (1.1-8.6)	.0333	2.7 (0.9-7.8)	.0642

*Two or more questions in screen answered affirmatively.

Limitations

The research team identified numerous limitations within this study. First, the questionnaire relied upon self-report data using very short yet validated scales as well as scales developed from the literature and clinical experience. Researchers have questioned the diagnostic validity of self-report scales that do not have the input of clinicians.[32] Secondly, this population, which consists of mostly white, male Marines, is not indicative of the entire population of Veterans returning from OEF/OIF/Operation New Dawn. Finally, not all Veterans surveyed had a chart review completed, creating a small sample for these analyses.

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This study was conducted at the VHA Medical Center, 50 Irving Street NW, Washington, DC.

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A New Offering from the Borden Institute History Series

Skilled and Resolute

Sanders Marble, PhD
Office of Medical History
US Army Medical Department
Center of History and Heritage

COL Betsy Vane, AN, USA

Skilled and Resolute chronicles the history of the 12th Evacuation Hospital which then became the 212th Mobile Army Surgical Hospital (MASH), covering the years from 1917 to 2006. Each chapter provides a comprehensive summary from researched resources and begins with the role of the hospital for that time period. The chapters are supplemented with excellent maps, diagrams, photos, abbreviations and acronyms, and a list of all oral histories.

Dr Marble outlines the chapters in a clear narrative style while he explains the strategic and technological importance of a mobile hospital. Additionally, he ties in the sociopolitical and environmental contextual elements with the type of trauma care available at each time period, and has blended his research analysis with many oral history accounts to help readers better understand the progress made by the Army Medical Department's (AMEDD) oldest mobile/deployable hospital unit.

Skilled and Resolute is the culmination of a 7-year quest to capture the story of this mobile hospital unit with their challenges, sacrifices, and beliefs. The book encompasses 90 years of "who we are" and "what we do" as health care professionals on the battlefield, as well as during humanitarian and peacekeeping missions.

It is the author's goal to give credit to where references and resources were found. Relying on official interviews, books, files, and oral histories, Dr Marble paints a colorful picture of capabilities and missions. He has made the information available to the reader with valuable depictions of results, observations, ideas, and perspectives of military medicine.

Perhaps the books' strongest feature is the detailed descriptions of mobile medical care that transformed with each conflict. Much change occurred in 90 years with regard to military force structure and doctrine, along with advances in medical military technology and its applications. Over the years, the capabilities of military medicine have dramatically expanded, a fact directly reflected in the ever-improving, significant survival rates of those injured on the battlefield. Understanding that context while seeing the details of life and medical care throughout those times provides a fascinating picture of military innovation, leadership, and caring. Dr Marble expertly weaves numerous eyewitness accounts into the chapters, providing welcomed additions and a virtual account of the challenges and successes of providing medical care in this mobile environment. This book addresses numerous areas of interest, including how education, training and experience can help staff actions remain within the commander's intent and in support of the overall objectives, yet remain flexible and responsive for quality patient care solutions.

It should be noted that this book is not intended to be a comprehensive reference for how the AMEDD delivers care at every level. It examines Level III hospitals, not the forward battlefield care or the care in rear-area hospitals.

Skilled and Resolute is chronologically organized, encompassing service in World War I, World War II, the Vietnam War, Operation Desert Shield/Desert Storm, the Balkans, and Operation Iraqi Freedom. Below are snippets of interesting facts to entice readers to read the book in its entirety:

World War I: Evacuation hospital experiences in WWI called for not only a surgical focus, but the addition of dentists, administrative officers, clerks, a chaplain, mechanics, 2 buglers (there was no public address system),

cooks, pharmacists, and x-ray operators. These mobile hospitals now had 750 beds, but only 5 trucks with which to be mobile.

World War II: Evacuation hospitals were not as important as in WWI, but they could handle major surgical and medical procedures for casualties. These hospitals had a neurosurgical team, a thoracic surgeon, and a plastic-maxillofacial team. There were also 3 general surgical teams and splint and shock teams. During the 12th Evacuation Hospital's stay in England in 1943, they treated about 8,000 patients, and another 26,000 in France, Luxembourg, and Germany. They had many risks such as German shells, buzz bombs, debarking from landing ships at Normandy beaches, and a glider insert—yet only 2 staff died, both were nurses.

The Vietnam War: In May 1966 the 12th Evacuation Hospital was sent to an "undisclosed location" in the Pacific. It ended up at Cu Chi for 4 years and treated over 37,000 patients. Over 36,000 survived because of treatment received there. The 12th Evacuation Hospital was awarded 3 Meritorious Unit Commendations, the Vietnamese Cross of Gallantry with Palm (twice), and Civil Action Honor Medal. In 1970, the 12th Evacuation Hospital (semimobile) was deactivated for the third time.

Operation Desert Storm/Desert Shield: The 12th Evacuation Hospital was in Saudi Arabia from December 1990 until April 1991. It was augmented with 3 medical teams: orthopedic surgery, neurosurgery, and anesthesia. The 12th Evacuation Hospital treated injured from traffic accidents and other accidents; their own staff; older active duty personnel with seizures, diabetes, high blood pressure, and asthma; POWs; friendly fire casualties; civilians; and Coalition troops. In 101 days of hospital operations, they saw 10,309 outpatients and 1,299 inpatients. Upon redeployment to Germany, the hospital was converted to the 212th MASH.

The Balkans: The 212th MASH deployed for an international operation and was under foreign command, something that had not happened since 1918, and had to have vehicles and equipment painted white with light blue United Nations markings. The 212th treated patients from 34 countries across 5 continents, which obviously produced some language problems. Landmines caused 9 wounds, and there were 2 gunshot wounds. Supplies came from 3 sources: the United Nations, the United States, and some local procurement. The 212th cared for 4,454 outpatients, and admitted 333 inpatients in 6 months' time.

By 1999, the 212th Contingency Medical Facility in Kosovo had seen 788 patients and 32 surgical patients. In 6 months during 2000, the 212th handled 339 major surgical and medical cases before returning to Germany.

Operation Iraqi Freedom: The 212th saw 701 patients and admitted 394. This portion of the book includes first-hand accounts from the Soldier caregivers.

In October 2006, the 212th MASH became the 212th Combat Support Hospital (CSH). As of that redesignation, this unit's history already included service in 5 wars, over 18 campaigns, and many humanitarian and peacekeeping missions.

"Skilled and Resolute" remains the motto of the US Army's oldest deployable hospital and illustrates how it gave the best care for its time and remains effective today, no matter the mission or the locations. The symbolism of the distinctive unit insignia of the 212th CSH includes the maroon and white colors associated with medical units. The 12-sided device reflects the heritage of the parent organization. The stars and fleurs-de-lis commemorate campaign credits earned in WWI and WWII. The red and gold stripes signify service in Vietnam. The scarlet motto scroll and ribbon symbolize the 2 Meritorious Unit Commendations (European theater during WWII and Vietnam 1966-1967), and the circle suggests mobility and speed. The cross is symbolic of medical care.

This book is highly recommended for those studying the best way to provide quality medical and surgical care to Warriors and other designated patients as soon as it is needed whether in combat, peacekeeping, or humanitarian environments. In approximately 250 pages of *Skilled and Resolute*, we walk alongside these caregivers and reflect on their lives, times, challenges, and successes. Dr Marble reminds us that much of this practical information can help healthcare providers of today, not only in appreciating AMEDD history and heritage, but in planning and responding to current situations.

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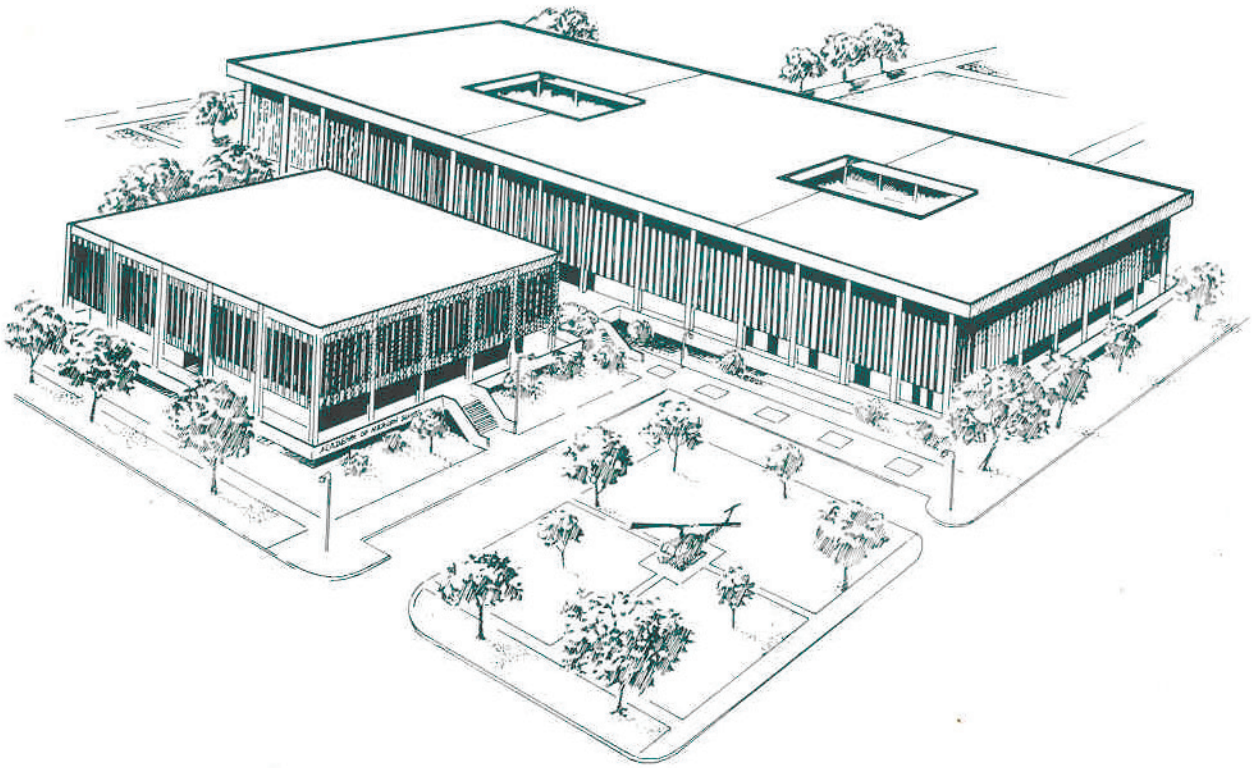

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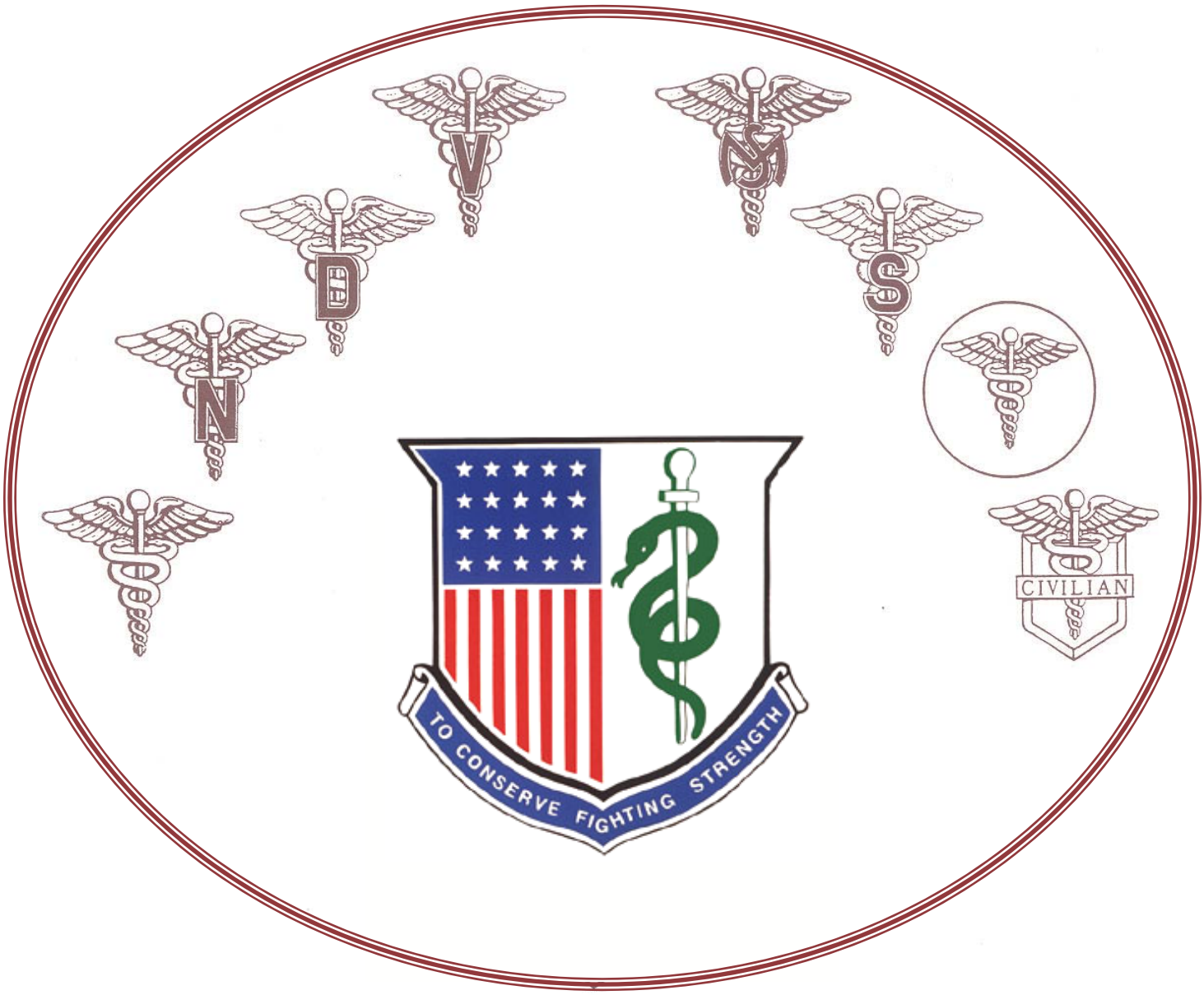

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