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Family-Centered Care for Military and Veteran Families Affected by Combat Injury

Stephen J. Cozza · Allison K. Holmes · Susan L. Van Ost

Abstract The US military community includes a population of mostly young families that reside in every state and the District of Columbia. Many reside on or near military installations, while other National Guard, Reserve, and Veteran families live in civilian communities and receive care from clinicians with limited experience in the treatment of military families. Though all military families may have vulnerabilities based upon their exposure to deployment-related experiences, those affected by combat injury have unique additional risks that must be understood and effectively managed by military, Veterans Affairs, and civilian practitioners. Combat injury can weaken interpersonal relationships, disrupt day-to-day schedules and activities, undermine the parental and interpersonal functions that support children's health and well-being, and disconnect families from military resources. Treatment of combat-injured service members must therefore include a family-centered strategy that lessens risk by promoting positive family adaptation to ongoing stressors. This article reviews the nature and epidemiology of combat injury, the known impact of injury and illness on military and civilian families, and effective strategies for maintaining family health while dealing with illness and injury.

Keywords Military family · Military child · Combat injury · Post-traumatic stress disorder · Traumatic brain injury · Family resilience

S. J. Cozza (✉) · A. K. Holmes · S. L. Van Ost
Center for the Study of Traumatic Stress, Uniformed Services University of the Health Sciences, Bethesda, MD, USA
e-mail: stephen.cozza@usuhs.edu

Introduction

Since the start of combat operations in Iraq and Afghanistan, over 50,000 men and women have been injured in combat with varying levels of severity (www.defense.gov/news/casualty, accessed January 17, 2013). Advances in medical practice have increased the rates of injury survival during Operation Enduring Freedom (OEF, combat operations in Afghanistan) and Operation Iraqi Freedom (OIF, combat operations in Iraq) to as high as 90 % (Congressional Budget Office 2007), far more than previously experienced in war (Gawande 2004). The relatives of these survivors are often left to cope with their loved one's extensive injuries, long-term recovery, permanent disability, and changed behavior. Protecting and ensuring the health of these families is critical to the rehabilitation of service members and to prevention of mental health problems in all family members.

Nature of Combat Injuries

Injuries are broadly categorized as either *visible* or *invisible* in nature. The distinction of these injury types is important, given their unique and differential impact on families and children, and familial relationships. *Visible injuries* are those easily identified by others, such as amputations (1,184 amputations through 2009, approximately 1 % of all injuries; CRS 2009), other musculoskeletal injuries, shrapnel injuries, blindness or eye injuries (10–13 % of all injuries; Owens et al. 2008), auditory damage (approximately 10 % of all blast injuries; Ritenour et al. 2008), and burns (approximately 1 % of injuries). Due to improvised explosive devices (IEDs) and use of vital-organ-sparing body armor, an individual may suffer multiple visible injuries to

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the extremities (54 %) and head and neck (29 %) (Owens et al. 2008). This pattern of injury increases the likelihood of multiple injuries as well as co-morbid psychological trauma, causing both visible and invisible wounds.

Invisible injuries are without external indication of trauma but include symptoms that are presented through cognitive, behavioral, and social dysfunction (Jones et al. 2010). These include neurological and psychological wounds, such as traumatic brain injury (TBI), post-traumatic stress disorder (PTSD), and other combat-related mental health disorders (e.g., depression, substance use disorders). Notably, 33 % of all service members who return from combat are reported to suffer from TBI, PTSD, or depression; and 5 % meet criteria for all three diagnoses (Tanielian and Jaycox 2008).

The incidence of combat-related TBI has been variably reported in the literature, depending upon the source of information, screening criteria and threshold of diagnostic clarity, as well as severity level (i.e., mild, moderate or severe). The military health system has reported the cumulative number of diagnosed cases of TBI in military service members to be over 250,000 through the second quarter of 2012 (http://www.health.mil/Research/TBI_Numbers.aspx). Others have estimated the number of TBI cases to total 19 percent, or 320,000 veterans of OIF and OEF through 2007 (RAND 2008), a significantly higher incidence. TBIs are not always immediately identified, diagnosed, and treated when service members return from combat. Therefore, families may not be aware of causes for the behavioral and cognitive changes they see in their returning service members.

Longitudinal data suggest that those having physical or "visible" combat injury are at significant risk of the eventual development of additional psychiatric problems such as PTSD and depression (Koren et al. 2005; MacGregor et al. 2009). These invisible injuries present cognitive, behavioral, and interpersonal challenges. For example, one study found that of OIF/OEF veterans with amputations, 58 % and 24 % were diagnosed with PTSD and depression, respectively (Reiber et al. 2010). In addition, mental health symptoms are not always immediately apparent. Grieger et al. (2006) reported that nearly 80 % of combat-injured who screened positive for either PTSD or depression at seven months post-injury had previously screened negative for both conditions at one month post-injury (Grieger et al. 2006). This suggests that either the physically injured population's mental status changes throughout the recovery period or initial sub-clinical symptoms go unnoticed.

Impact of Combat Injury on Children and Families

Starting with the initial shock of injury notification to longer-term injury adjustment problems, children and families face difficult emotional and practical challenges (Cozza and Guimond 2011). Anecdotal reports (Cozza et al. 2005, 2010; Cohen et al. 2006) describe combat-injured families that are stressed by the injury itself, as well as the tasks inherent in providing both physical care and emotional support to their injured service member. The degree of reported stress likely depends upon time from the original injury, injury type, injury severity, and functional impact on the injured parent; the developmental status of the children; family composition; and preexisting parent, child, or family characteristics.

Though the course of recovery includes advances and setbacks, the overall sequence can be conceptualized as an *injury recovery trajectory* (Cozza and Guimond 2011). Within this rubric, there are four phases: *acute care*, *medical stabilization*, *transition to outpatient care*, and *long-term rehabilitation and recovery*. During *acute care*, life-saving and life-sustaining medical interventions are provided on the battlefield and in combat hospitals. *Medical stabilization*, often occurring at great distances from families' residences, includes definitive medical/surgical care that prepares the injured service member to function or receive care outside of a hospital environment. In a 2007 report (President's Commission on Care for America's Returning Wounded Warriors), 33 % of active-component, 22 % of reserve-component, and 37 % of retired combat-injured veterans reported that a family member or friend relocated temporarily to spend time with them while he or she was in the hospital. This creates upheaval for partners who leave households and employment to visit the hospital, for children who accompany the partner, and for children who remain at home with different caretakers or who relocate to the residences of friends and extended family members.

High injury severity leads to complex courses of treatment that are distressing to families. There may be alternating periods of medical stability and instability when complications occur, recovery progress is limited, or additional treatments (such as multiple reconstructive surgeries; Reiber et al. 2010) increase family distress (Halcomb and Davidson 2005). Polytrauma rehabilitative centers have noted that multi-trauma injuries due to blasts (Friedemann-Sanchez et al. 2008), and high rates of co-morbidity among visible and invisible injuries, make treatment complex and family adjustment difficult (Weaver et al. 2009). Amputation, musculoskeletal injuries, burns, or ocular injuries are likely to lead to temporary or permanent functional loss requiring prosthetic assistance or extensive rehabilitative care. Depending upon the condition, functionality may be partially or completely regained. The President's Commission on Care for America's Returning Wounded Warriors (2007) found that 21 % of active-component, 15 % of reserve-component, and 24 % of combat-injured veterans in a random sample of OEF/

OIF participants had a family member or friend who was forced to leave a job to provide full-time care. While the combat-injured service member is healing physically and psychologically, family members must manage their own reaction to the injury, while ensuring the service member's care during the outpatient and rehabilitation phase of recovery. This may require change in residence to be closer to medical care, altered caretaking responsibilities, adjustments in employment and financial support, and changes in child care and schooling arrangements.

Transition to outpatient care begins prior to discharge, as follow-up treatment and ongoing rehabilitation are planned. This transition can often be challenging to families as they lose resources that were available to them in the hospital setting and must take on additional roles and responsibilities themselves. *Rehabilitation and recovery* is the longer-term period in which service members and veterans learn to adapt to their injury and settle into their new lives. During this phase, families often must transition to new communities and engage new healthcare providers. Over time, continuity of care may be complicated by changes in healthcare facilities (e.g., recurring hospital-based treatments, rotating clinical staff, outpatient rehabilitative services), as well as changes in family living arrangements and associated disruptions in community connection (Chesnut et al. 1999).

Each stage of the injury recovery trajectory can also have early and lasting effects on the service member's children. Beginning with the initial notification of injury, children may be exposed to uncensored injury information, caregivers' emotional responses, medical providers' comments, other ill or injured individuals in the hospital setting, and evidence of medical procedures. For example, a small study of combat-injured families that were several years past injury found that 15 % of children evidenced clinical levels of emotional and behavior problems (Cozza et al. 2011b). Children's reactions vary by their age and developmental abilities (Cozza 2009; Cozza et al. 2010, 2011a; Cozza and Feerick 2011). Exposure to the injured parent may induce sadness, anxiety, or confusion, because children expect the parent to return home from deployment safely. Younger children may develop behavioral symptoms, loss of control, and regression requiring adult support and patience. Older children may assume responsibility for their parents' injuries, and adolescents may disengage from family interaction (Cozza and Feerick 2011). Importantly, children of all ages, infants to adolescents, respond to the injury, changes in the injured parent, changes in the non-injured parent (e.g., availability, emotional responses), and changes in the family routine. Because relationships within the family system bidirectionally impact individual and relationship functioning (e.g., Bronfenbrenner and Morris 2006; Cox and Paley 1997; MacDermid Wadsworth et al. 2013), service providers can promote health and recovery in the combat-injured population through support to their spouses and children.

Assessment and Treatment of Clinical Disorders

While this article focuses on family prevention strategies to promote child and family health, clinicians must be prepared to identify children or adults whose symptoms indicate the presence of clinical disorders and to refer them to competent evaluation and treatment, whether that be for depression, anxiety, trauma-related, or other required care. This may be particularly true for family members with preexisting psychiatric conditions, where the stress of injury can worsen symptoms. When children report clinically significant levels of traumatic response, they should be referred to a structured evidence-based trauma-informed intervention such as Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT; Cohen et al. 2012) or Cognitive-Behavioral Intervention for Trauma in Schools (CBITS; Stein et. al. 2003). Both programs employ cognitive-behavioral strategies, including psycho-education about reactions to trauma and stress, relaxation training to reduce anxiety, as well as cognitive and exposure-based approaches. TF-CBT has been refined for use in military populations (Cohen and Cozza 2012), as well. When clinically indicated, all treatment interventions can occur in conjunction with family-centered interventions that are described below.

Disruption to Parenting and Family Function

Parental injury can produce impairments in parenting and family functioning. For example, the injured parent may be unable to engage in prior enjoyable activities or take part in household routines, leading to increased responsibilities for other adults or children in the family. Prior to injury, many young military service members were physically active individuals who incorporated such traits in their parenting activities. Anecdotally, we know that physical activities (hiking, backpacking, and camping), hands-on activities (playful wrestling), and athletic activities (ball throwing, skiing, and golfing) were all likely modes of pre-injury interaction between young military fathers and their children (Cozza and Guimond 2011). Depending upon the nature of the injury, those modes of engagement either may no longer be possible or may require significant modification to continue.

When profound alterations in parenting activities are necessary, injured parents must modify a previously held, idealized sense of themselves as parents and mourn any

related body change or functional loss. Similarly, as described above, the non-injured parent may be attending to the injured parent's needs, also limiting parental availability and engagement to fulfill the child's emotional and basic physical or social needs. The physical absence and emotional unavailability of both the injured and non-injured parents, created by the prolonged hospitalization and rehabilitation associated with injury, can seriously limit a parent's ability to effectively interact with his or her children (Power 1979; Peters and Esses 1985; LeClere and Kowalewski 1994; Kelley and Sikka 1997; Kotchick et al. 1997). Thus, the injury can alter the injured and non-injured parents' engagement in parenting.

High rates of TBI in the combat veteran population and the unique consequences of the disorder bear additional attention. According to Urbach and Culbert (1991), psychiatric sequelae associated with TBI tend to be more distressing to family members and disruptive to family functioning compared to other physical and non-neurological impairment. The most troublesome symptoms include personality alterations, behavioral dyscontrol, erratic emotional expression, irritability, anger, apathy, and lack of energy (Weinstein et al. 1995). Veterans who sustain TBI may find that their parenting and interpersonal skills are limited by a neurological incapacity for multitasking and intolerance for overstimulation (Resnik and Allen 2007). Non-injured parents, who must assume responsibilities formerly shouldered by the injured spouse (Verhaeghe et al. 2005) are at high risk of depression and anxiety (Kreutzer et al. 2009a, b; Pessar et al. 1993; Ponsford et al. 2003) and therefore may find that their own parenting capacity is undermined. Parental individual well-being, adaptive parenting, and the marital relationship may be compromised due to the nature of the injury. Veterans diagnosed with TBI report difficulties engaging in social settings because of communication problems, low frustration levels, poor anger management, and difficulty with emotional and behavioral regulation (Resnik and Allen 2007). Due to an inability to connect, veterans with TBI may withdraw from family members to protect children and other loved ones from their own unintended emotional reactivity. Interactions with TBI parents pose unique challenges for children who may remember their parent's pre-injury behavior and erroneously blame themselves for parental outbursts, loss of control, or emotional aloofness.

Studies of non-military families have shown that parental TBI has detrimental effects on children. In a study relying on retrospective reports from the civilian non-TBI parent, children displayed increased acting-out behavior as well as emotional and post-traumatic stress following the parental TBI. In addition, parental TBI correlated with compromised parenting in both partners and depression in the non-TBI parent (Pessar et al. 1993). Comparison of children in civilian families having a TBI parent to children having a diabetic parent found higher levels of post-traumatic symptoms in children from TBI families, but no differences between these groups with respect to child depression or anxiety (Kieffer-Kristensen et al. 2011). This suggests that parental TBI may have distinct traumatic effects on children.

In qualitative studies of TBI, children have reported feelings of loss and grief at the change in the injured parent (Butera-Prinzi and Perlesz 2004), as well as a sense of isolation (Charles et al. 2007). As described by one 12-year-old girl whose father had brain injury "I basically just feel sad, because he's there physically. I suppose I've got a Dad but he's not my Dad" (Butera-Prinzi and Perlesz 2004, p. 89). Factors related to impact on children include TBI symptom severity, chronicity, and stability; existing parent, child, and family functioning and relationships; children's developmental level and gender; family cohesion, adaptability, resources, and conflict; and degree of disruption to routine, residence, and household composition (Verhaeghe et al. 2005; Urbach and Culbert 1991).

Unlike other physical injuries, the impact of TBI on children and families may not remit or improve. Verhaeghe et al. (2005) underscored the very long-term impact on family stress caused by a TBI and the continued need for intervention by professionals 10–15 years after injury. In this study, a key factor was the TBI's impact on the injured adult's cognitive and interpersonal functional capacities. In addition, the non-TBI partner's experience was heavily affected by the inability to have a reciprocal emotional relationship and effective communication. Young families with the least financial and social support were found to be at the highest risk. Therefore, both practical (financial, housing, social, and employment) and professional supports were deemed critical for caregivers and families of long-term TBI sufferers (Verhaeghe et al. 2005).

Family Theory that Informs Intervention

Of theoretical and practical interest are the *mechanisms or processes* by which parental impairment impacts overall child adjustment and family functioning. For example, Rutter and Quinton (1984) found that exposures to parental irritability, aggression, and hostility were highly predictive of poor child adjustment. Using a family systems perspective, MacDermid Wadsworth et al. (2013) noted that the behavior and reactions of each family member affect everyone in the system (both adults and children) in a reciprocal fashion. These interactions potentially support family equilibrium or lead to greater disequilibrium. As a result, military healthcare services directed solely to the individual service member or veteran miss the opportunity

to address the family context where the injured parent receives the bulk of emotional support.

By describing the processes by which family and parenting dysfunction impact adult and child adjustment, several key theorists have targeted the interactive skills and routines which tend to protect family members and therefore promote health in spouses and children during times of stress or trauma. Walsh's (2006) Family Resilience Theory emphasizes the family's need to develop and preserve shared beliefs, constructive communication, and healthy patterns of organization. Based on their work with families undergoing the stress of military deployment and separation, Saltzman et al. (2011) affirmed and expanded on these concepts by hypothesizing that intervention should promote: (1) increased understanding, support, and forgiveness among family members; (2) improved communication and cohesion; (3) coordinated parental leadership; (4) defined but adjustable roles and responsibilities; and (5) development of shared goals and beliefs.

Models of parental illness and combat injury (Armistead et al. 1995; Gorman et al. 2010) highlight the need for such a framework, proposing that the impact of parental physical injury on child functioning is mediated by its disruption of the marital dyad, parenting, and parent–child relationships (attachment, parental responsiveness to the child's needs). Among children of parents suffering from a stroke, parent-reported internalizing symptoms in their children and child self-reported depressive symptoms have been associated with caregiver strain and depression. Prior child depression as well as depression and marital dissatisfaction in the well parents contributed to greater risk in these families (Visser-Meily et al. 2005). Among children of parents with multiple sclerosis, child internalizing and externalizing symptoms were associated with parental impairment and family functioning, respectively (Diareme et al. 2006). In a small hospitalized combat-injured population, greater levels of parentally reported child distress were associated with pre-injury deployment-related family distress as well as post-injury family disorganization (e.g., disrupted schedules, change in living arrangements) (Cozza et al. 2010, 2011a). In combination, early and ongoing emotional and behavioral challenges to children of combat-injured are associated with the disruption of parenting and family relationships that occur under the stress of adjusting to an injury.

The powerful and defining effect that severe combat injury has on families, its capacity to generate toxic levels of distress, undermine parenting, and disorganize family roles and functions requires careful application and expansion of the above principles. Treatment of combat-injured families must also include linkage to supportive community and military services, as well as improved family routine and role definition, understanding of the impact and meaning of the injury to family members, and fostering a sense of future hopefulness despite experiences of loss.

Family-Centered Intervention Strategies

The following strategies have been developed to promote family equilibrium and resilience under the stress of combat injury and its sequelae: (1) educate adults and children about the impact of injury and the expected recovery process. The family should be encouraged to locate their progress within the *injury recovery trajectory* while acknowledging that setbacks may occur (see above); (2) reduce family distress and disorganization through *family care management* (Cozza and Feerick 2011) and provision of practical and socioeconomic support; (3) develop emotion regulation skills necessary for ongoing dialogue and collaboration; (4) promote helpful and ongoing communication about the injury that incorporates developmentally appropriate language (*injury communication*); (5) encourage optimism through development of successful problem-solving and shared future goals. Each of these approaches is detailed in the following paragraphs.

1. Educate Adults and Children About the Impact of Injury and the Expected Recovery Process

To further reduce the family's sense of uncertainty and distress, professional guidance must include information about the typical course of family recovery from combat injury. After a serious injury, family members often describe a sense of chaos and confusion, with little awareness that this frenzied experience can be organized into a predictable sequence: emotional shock, family separations, hospital visits, variable courses of recovery, outpatient rehabilitation, and transitions to civilian life. Families therefore can be helped to locate their experiences within the *injury recovery trajectory*, as they progress from *acute care* through *medical stabilization* and into *outpatient and long-term rehabilitation/recovery*. Though outpatient treatment and rehabilitation often includes re-hospitalizations and repeated surgery, placing these experiences in the framework of an injury recovery "journey" provides a sense of predictability and hope. An added sense of normality can develop from exchanges with other combat-injured families as they, too, move through broadly defined phases of recovery toward definition of a new lifestyle.

Equipped with information about what to expect, families and providers must work together to manage the different challenges associated with each phase of the recovery process (Cozza et al. 2011b). During *acute care*,

decisions must be made about providing information appropriate to the different developmental levels of the children, whether to include them in hospital visits, and how to arrange for their care and maintain the family household. During the period of in-hospital *medical stabilization*, professional intervention must insure that hospital-based accommodations are family friendly and that practical resources are available (housing, travel, child care, finances) for an extended stay. Further interventions must include education about the injury, screening of family members for possible psychiatric intervention, counseling to reduce conflict among family members, and help with planning the transition to outpatient care.

During *outpatient and longer-term care*, families transition from the supportive hospital environment toward having to independently shoulder the bulk of daily care. Because the injured parent may be unable to resume previous roles and responsibilities, families must accept that their relationships and routines may be permanently changed. Professional guidance must facilitate adaptive problem-solving while at the same time promoting a process by which the family can accept and embrace this changed reality.

Because the injured family member's changed behavior is typically a direct result of the injury, providers must offer helpful psycho-education about diagnoses and likely long-term outcomes. Clinicians often need to remind family members to attribute new and unexpected interactions with the service member or veteran to the injury or combat-related illness rather than to a change in the emotional commitment of the relationship or to some action of their own. A key principle is that everyone, parents and children alike, is affected by the injury. Children, especially, must be reminded that the tension they see at home is not their fault and that it is not their responsibility to "fix" it. Adolescents should be relieved of adult responsibilities that conflict with academic, occupational, or emotional development. In general, parents must provide their children with opportunities for normal growth and development that are independent from any struggle the family is having with injury recovery.

2. Reduce Family Distress and Disorganization Through Family Care Management and Provision of Practical Support

Family care management (FCM) is modeled on Zatzick's (Zatzick et al. 2004) evidence-based "early combined collaborative care" (ECCC) treatment approach that has demonstrated benefit to civilian trauma patients of continuous post-injury case management over usual care. Zatick's model aims to prevent post-trauma mental health problems through development of a care plan that simultaneously addresses the medical and psychosocial complications of the injury. This is done by creating linkages across medical-surgical, primary care, mental health, and community support resources so that changing needs are addressed as patients move from the hospital to outpatient care. Services are delivered in a "stepped" manner which allows for an increase or decrease in support as family needs wax and wane over time. "Collaborative" delivery means that services occur only when the family agrees that they are clearly necessary and is therefore more likely to favorably receive them (Zatzick et al. 2001).

Similarly constructed, FCM expands the ECCC model by shifting the focus of preventive intervention from the injured patient to his or her family as transition is made from the hospital to the community setting. Consistent with Zatzick's collaborative care model, FCM incorporates motivational interviewing techniques (eliciting change and commitment talk, increasing awareness of personal discrepancies, clarifying goals, making change plans) to facilitate the family's awareness of and interest in unrecognized issues (substance abuse, clinically significant mental health problems) that can undermine family relationships. Case management services are prioritized based on the family's expressed satisfaction or concern with services in physical health, medical access, psychological/mental health, social interactions, child care/education, health, work/finance, housing, military status, and legal. This paradigm is currently being studied in clinical trials (FOCUS-CI Research and Training Manual 2012).

Effective management of these basic needs provides a sense of order and predictability that allows family members to be less distracted, function more effectively, and be supportive of each other as the family moves through the course of injury recovery. Continuous coordination of services promotes family organization by reducing worry about basic needs and providing overburdened caretakers with support and respite. Adults are calmer, and the frequency of impulsive, threatening, or disruptive behavior among family members is reduced when there is access to systems for household maintenance, meals, medical care, money management, and child care. Children are calmer when adults provide a predictable daily routine and model restraint.

3. Develop Emotion Regulation Skills Necessary for Ongoing Dialogue and Collaboration

Similar to all families, interpersonal transactions and communication will be more effective in combat-injured families if delivered in a measured, calm manner. Given the higher likelihood of emotional dysregulation in combat-injured families, particularly those with PTSD or TBI, there is greater need for clinical attention. As a result,

children and adults should be taught to practice personally effective stress reduction strategies. This training includes instruction on how to monitor changes or extremes in emotional states by first learning to label and express feelings, then to identify when and how positive or negative responses are precipitated. An example of this strategy is the FOCUS program's use of the "feeling thermometer" and the association of colors with different intensities of feeling (green = calm; yellow = mild discomfort; orange = significant discomfort; red = severe discomfort) (Lester et al. 2011). Use of colors to describe beginning or growing intensities of feeling gives individual family members a quick and mutually understood vocabulary to identify and talk about emotions as they occur in response to various situations and stressors. This facilitates decision-making by allowing family members to anticipate and plan for situations and times of day that are positive or stressful for each individual.

Emotion regulation activities can be taught to families, couples, and parent–child dyads, as well as individuals. Though identifying and sharing feelings is a first step toward the control of emotion, families also must use this information to develop and encourage individual and group activities that promote calm and relaxation. Individuals can be taught to reduce worry and tension by engaging in positive self-talk, allowing themselves breaks as needed, developing more realistic expectations, and setting priorities. Families can increase a sense of unity and mutual support by sharing enjoyable activities. Similarly, couples and parent–child dyads can be encouraged to jointly identify and engage in activities that are calming for both participants.

Preventive strategies designed to minimize family dysregulation can be very helpful to combat-injured families. While all families have "hot spots" or issues that tend to provoke more intense emotional responses when they arise (homework, chores, finances, etc.), physical injury, PTSD, and TBI can contribute to greater reactivity and therefore leave combat-injured families more easily upset by ordinary stressors. In addition, reminders or "triggers" can prompt memories of previous losses and traumas. For example, the occurrence of an unexpected noise (a child's shout) may agitate a combat veteran who suffered injury due to an IED. A child might become upset at the unannounced absence of his father, because this is a reminder of when the father was in the hospital. Each family member brings hypersensitivities to their mutual interaction that can disrupt the calm of their time together. Professionals must help identify hot spots and triggers so that family members are able to anticipate the service member's reactions to such events, as well as their own. For example, family members can be helped to control their reaction to a service member's provoking behavior by not taking the triggered behavior personally and by prompting the SM to employ previously developed strategies for calming or controlling the reaction.

A related treatment issue is the timing and choice of mutually enjoyable and relaxing activities. Due to medication timing or sleep problems, the injured service member or veteran may experience daily fluctuations in pain, alertness, and irritability. The caregiving spouse or relative may value personal rest and respite rather than an energetic outing with children. Knowledge of these factors allows families to identify and take advantage of "windows of availability" for mutually enjoyable activity and interaction. Providers must therefore assist family members to identify daily and weekly intervals when they are more or less likely to successfully enjoy themselves and each other's company.

4. Developing a Shared Understanding Using Injury Communication

Given injury-related distress and the amount of information that must be shared among loved ones and with professionals, combat-injured families face unique challenges that can compromise communication. *Injury communication* refers to the process of effective communication regarding injury-related topics, both within and outside the family (Cozza and Guimond 2011). This process begins at or near the time of notification and continues through the recovery period. A primary goal of this communication, to be achieved over time through frequent discussion, is to foster the family's *shared understanding* of the injury's impact on the service member's behavior and ability to fulfill family responsibilities, define how these changes affect each family member and how family life and routines will change or adapt as a result of the injury.

The following are key principles of injury communication:

Judicious Communication is Ongoing and Must Occur Across a Variety of Relationships Injury-related discussions must occur between multiple parties: the injured and spouse, family members (including children), friends, medical personnel, and other community professionals. The detail and amount of information to be shared must be tailored to each recipient's "need to know" and "capacity to know."

Though injury communication with outside resources (extended family, neighbors, care systems, schools, clergy, etc.) is essential to the family's sense of safety and stability, it must also respect the family's need for a measure of privacy. Some families adopt the strategy of having a "point person" who answers the questions of interested relatives and friends. Other families might use a Web site or telephone tree to convey information or request timely assistance and support.

Children and adults alike should adopt a brief, clear, easily repeated, and general description of the injury and injury story when speaking teachers, coaches, and other concerned adults. When speaking with a coach, a child can be taught to say that "My Dad would love to see me play but can't be here today because he is a soldier who was injured in the war." If asked for more information, the child might learn to respond with "My Dad lost his legs in the war and is getting better" or "My Dad was injured in the war, so gets bothered by crowds."

Healthcare professionals can help combat-injured families develop the messages that they will use to convey their experience. Because different factions of the same family may have conflicting interests and agendas with regard to the service member, professional consultation can facilitate communication and cooperation between parents, grandparents, in-laws, and children regarding such critical issues as transportation to medical appointments and school activities, balance of employment and child care, and maintenance of a predictable household schedule. For example, the family may decide that an unmarried service member or veteran may reside with parents or siblings or friends. The spouse of an injured service member or veteran may require the support of extended family to care for children while also sustaining employment and providing injury care.

Because recovery often proceeds over a period of years, the explanation to children must account for the service member's changing capacities and be commensurate with each child's increasingly sophisticated ability to understand. Professionals who maintain an ongoing supportive role with the family can assist with this process of clarification to children as they develop.

Injury Communication is Developmentally Appropriate The most important communication to children of any age is that they are safe and that important adults will remain available to them. The Workgroup on Combat Injured Families (Cozza 2009) has proposed that parents and professionals be aware of the following guidelines: (a) The importance of speaking with children as soon as possible after the injury. Children infer from adult behavior that something has happened and can be protected from unfounded worry if informed in a timely manner. (b) Adults should speak in a calm and matter-of-fact manner using language that is comprehensible to the child but excludes unnecessary or frightening detail. When speaking with younger children, it may be helpful to use a doll or puppet to show the location of the injury. (c) The type of provided information will vary with each child's developmental status. For younger children, reassurance about the care being administered to the injured parent and about the ongoing safety of both the child and the uninjured parent are important. Teenagers will require more detailed and logical explanations of the injury, its impact on the family, and reasons for carefully calibrated expansions of their own household responsibilities. (d) Create a family atmosphere in which discussion is encouraged regarding the injured parent's changed behavior. When they are prompted to express confusion or voice questions, children can be relieved of feeling personally responsible for changed interactions between the injured parent and other household members. Maintaining this dialogue allows children and adults alike to develop an ongoing understanding of how the recovery process differentially affects each family member.

5. Develop Optimism and Future Hopefulness

During injury recovery, the family often must engage in a process of grieving their previous life while developing hope and optimism about a changed future. The changed personality and interpersonal skills of a service member suffering from TBI and/or PTSD can create a sense of grief in family members who mourn their previous relationship. *Ambiguous loss* (Boss 2002, 2004) is a particularly useful way of referencing a family's grief and confusion over the presence of someone who resembles the previously loved person, but no longer behaves in a way that is similar to prior experience. Grief over this relationship loss is further complicated by confusion about whether some semblance of the prior connection might be recovered over time. The service member's unclear prognosis and fluctuating behavior/capabilities create a sense of longing and sadness among family members who remember their previously shared life.

Professionals can encourage acceptance of this changed reality while developing the family-based skills by which to create a positive, though different future. If a family can develop a sense of safety and competency in their management of daily life with the injured loved one (through the strategies described above), then it can look to the future with greater hope. In addition, when families reduce isolation and feel embedded in a larger, potentially helpful context of interested people and connections, they develop greater self-advocacy and confidence about their ability to manage future challenges. Future hopefulness also develops when families are able to share new and positive experiences together while recognizing and respecting changes brought about by the illness or injury.

Moving forward by trying new activities or thinking about the future is not always easy for injured families, and many barriers to progress can get in the way. Family growth can be complicated by the injured parent's pain, fatigue, immobility, trauma triggers, and other pressing needs and worries (finances, employment). Spouses may feel severely pressed for time due to the conflicting

demands of children and caring for the injured parent. Children may have trouble understanding and coping with their injured parent's behavior while at the same time struggling to adjust to new schools, neighborhood, and peer groups. In addition, a child's ability to grasp the implications of the injury will vary and change based on his or her evolving emotional and cognitive maturity.

Readiness, defined as an injured family's ability to confidently try new activities and develop mutually shared goals, is critical to the development of optimism about the future. To feel that future plans are possible and realistic, individual family members must feel competent to effectively manage personal stress. The family as a group must have effective routines for the management of differences and conflict. When individuals vary in their ability to move forward at the same time, conflict and frustration can develop. Family members must accept these individual differences in readiness, develop an understanding of why some may be less capable of moving forward, and pace changes accordingly. In addition, professional intervention should help families translate hopes for the future into clearly stated and achievable goals that all can agree to. This process builds individual agreement on family priorities, prevents working on too many things at once, and provides a framework from which to recognize and evaluate progress.

Conclusion

Increased rates of survival from injuries suffered in the current wars have changed the lives of children and families who must cope with the long-term disability of their injured family member. In addition to the challenges posed by physical or "visible" injuries, the "invisible" injuries caused by TBI and PTSD can change the injured family member's cognition and interpersonal behavior in ways that are disruptive to intra-familial relationships and family functioning.

Family theorists have noted that positive family function is often characterized by mutual understanding, coordinated leadership, defined roles and responsibilities, and development of shared goals. Intervention with combat-injured families should be informed and guided by an awareness of these processes, with attention to the unique challenges posed to combat-injured families. Effective strategies should: (1) reduce family distress and disorganization through FCM and provision of instrumental support; (2) develop emotion regulation skills necessary for ongoing dialogue and collaboration; (3) educate adults and children about the impact of injury and the expected recovery process; (4) develop a shared understanding through helpful and developmentally appropriate *injury communication*; and (5) encourage optimism, readiness, and hopefulness about the future through successful stress management, and development of shared future goals. Adult, child, and family service providers, whether they work in military, VA, or civilian settings, should utilize these perspectives while providing care during all phases of recovery. Combat-injured families live within communities around the country where their significant needs may go unnoticed or unmet. Family-centered intervention strategies can support the well-being of both adults and children in these families.

References

Armistead, L., Klein, K., & Forehand, R. (1995). Parental physical illness and child functioning. *Clinical Psychology Review, 15*(1995), 409–422.

Boss, P. (2002). *Stress management: A contextual approach*. Newbury Park, CA: Sage.

Boss, P. (2004). Ambiguous loss research, theory, and practice: Reflections after 9/11. *Journal of Marriage and Family, 66*, 551–566.

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In W. Damon & R. Lerner (Eds.), *The handbook of child psychology* (6th ed., Vol. 1, pp. 793–828). New York: Wiley.

Butera-Prinzi, F., & Perlesz, A. (2004). Through children's eyes: Children's experience of living with a parent with an acquired brain injury. *Brain Injury, 18*, 83–101.

Charles, N., Butera-Prinzi, F., & Perlesz, A. (2007). Families living with acquired brain injury: A multiple family group experience. *NeuroRehabilitation, 22*, 61–76.

Chesnut, R. M., Carney, N., Maynard, H., Patterson, P., Mann, N. C., & Helfand, M. (1999). *Rehabilitation for traumatic brain injury*. Rockville, MD: Agency for Health Care Policy and Research.

Cohen, J. A., & Cozza, S. J. (2012). Children in military families. In J. A. Cohen, A. P. Mannarino, & E. Deblinger (Eds.), *Trauma-focused CBT for children and adolescents: Treatment applications* (pp. 199–224). New York: Guilford Press.

Cohen, J. A., Mannarino, A. P., & Deblinger, E. (2006). *Treating trauma and traumatic grief in children and adolescents: A clinicians guide*. New York: Guilford Press.

Cohen, J. A., Mannarino, A. P., & Deblinger, E. (2012). *Trauma-focused CBT for children and adolescents: Treatment applications*. New York: Guilford Press.

Congressional Budget Office. (2007). *Projecting the costs to care for veterans of US military operations in Iraq and Afghanistan.* Testimony presented by Matthew S. Goldberg, Deputy Assistant Director for National Security, before the US House of Representatives Committee on Veterans Affairs. Washington, DC. Accessed January 31, 2013 from http://www.cbo.gov/ftpdocs/87xx/doc8710/10-17-VAAdmin_Testimony.pdf.

Congressional Research Service. (2009). *United States military casualty statistics: Operation Iraqi freedom and operation enduring freedom*. Washington, DC. http://fas.org/sgp/crs/natsec/RS22452.pdf.

Cox, M. J., & Paley, B. (1997). Families as systems. *Annual Review of Psychology, 48*(1), 243–267.

Cozza, S. J. (Ed.) (2009). *Proceedings: Workgroup on intervention with combat injured families*. Center for the Study of Traumatic Stress, Uniformed Services University of the Health Sciences, Bethesda, MD.

Cozza, S. J., Chun, R. S., & Miller, C. (2011a). The children and families of combat-injured service members. In E. C. Richie (Ed.), *War psychiatry* (pp. 503–533). Washington: Borden Institute.

Cozza, S. J., Chun, R. S., & Polo, J. A. (2005). Military families and children during operation Iraqi freedom. *Psychiatric Quarterly, 76*, 371–378.

Cozza, S. J., & Feerick, M. M. (2011). The impact of parental combat injury on young military children. In D. Osofsky (Ed.), *Clinical work with traumatized young children* (pp. 139–154). New York: Guilford Press.

Cozza, S. J., Feerick, M. M., Saltzman, W. R., Lester, P., Zatzick, D. J., Schmidt, J. A., et al. (2012). *FOCUS-CI, families overcoming under stress: Combat injured, research and training manual*. Bethesda: Center for the Study of Traumatic Stress, Uniformed Services University.

Cozza, S. J., & Guimond, J. M. (2011). Working with combat-injured families through the recovery trajectory. In S. MacDermid Wadsworth & D. Riggs (Eds.), *Risk and resilience in US military families* (pp. 259–277). New York: Springer.

Cozza, S. J., Guimond, J. M., McKibben, J. B. A., Chun, R. S., & Ursano, R. J. (2010). Combat-injured service members and their families: The relationship of child distress and spouse-perceived family distress and disruption. *Journal of Traumatic Stress, 23*(1), 112–115.

Cozza, S. J., Holmes, A. K., Feerick, M. M., Schmidt, J. A., Harris, A. M., Mendelson, M. L., et al. (2011b). *The impact of combat injury on the adjustment of military service members, spouses, and their children*. Baltimore, MD: Poster session presented at the annual meeting of the International Society for Traumatic Stress Studies.

Diareme, S., Tsiantis, J., Kolaitis, G., Ferentinos, S., Tsalamanios, E., Paliokosta, E., et al. (2006). Emotional and behavioural difficulties in children of parents with multiple sclerosis: A controlled study in Greece. *European Child and Adolescent Psychiatry, 15*, 309–318.

Friedemann-Sanchez, G., Sayer, N. A., & Pickett, T. (2008). Provider perspectives on rehabilitation of patients with polytrauma. *Archives of Physical Medicine Rehabilitation, 89*, 171–178.

Gawande, A. (2004). Casualties of war—military care for the wounded from Iraq and Afghanistan. *New England Journal of Medicine, 351*, 2471–2475.

Gorman, L. A., Fitzgerald, H. E., & Blow, A. J. (2010). Parental combat injury and early child development: A conceptual model for differentiating effects of visible and invisible injuries. *Psychiatry Quarterly, 81*, 1–21.

Grieger, T. A., Cozza, S. J., Ursano, R. J., Hoge, C., Martinez, P. E., & Engle, C. C. (2006). Posttraumatic stress disorder and depression in battle-injured soldiers. *American Journal of Psychiatry, 163*, 1777–1783.

Halcomb, E., & Davidson, P. (2005). Using the illness trajectory framework to describe recovery from traumatic injury. *Contemporary Nurse, 19*, 232–241.

Jones, K. D., Young, T., & Leppma, M. (2010). Mild traumatic brain injury and posttraumatic stress disorder in returning Iraq and Afghanistan war veterans: Implications for assessment and diagnosis. *Journal of Counseling and Development, 88*, 372–376.

Kelley, S. D., & Sikka, A. (1997). A review of research on parental disability: Implications for research and counseling practice. *Rehabilitation Counseling Bulletin, 41*, 105–121.

Kieffer-Kristensen, R., Teasdale, T. W., & Bilenberg, N. (2011). Post-traumatic stress symptoms and psychological functioning in children of parents with acquired brain injury. *Brain Injury, 25*, 752–760.

Koren, D., Norman, D., Cohen, A., Berman, J., & Klein, E. M. (2005). Increased PTSD risk with combat-related injury: A matched comparison study of injured and uninjured soldiers experiencing the same combat events. *American Journal of Psychiatry, 162*, 276–282.

Kotchick, B. A., Summers, P., Forehand, R., & Steele, R. G. (1997). The role of parental and extrafamilial social support in the psychosocial adjustment of children with a chronically ill father. *Behavior Modification, 21*, 409–432.

Kreutzer, J. S., Stejskal, T. M., Ketchum, J. M., Marwitz, J. H., Taylor, L. A., & Menzel, J. C. (2009a). A preliminary investigation of the brain injury family intervention: Impact on family members. *Brain Injury, 23*, 535–547.

Kreutzer, J. S., Stejskal, T. M., Ketchum, J. M., Marwitz, J. H., Taylor, L. A., & Menzel, J. C. (2009b). A preliminary investigation of the brain injury family intervention: Impact on family members. *Brain Injury, 23*(6), 535–547.

LeClere, F. B., & Kowalewski, B. M. (1994). Disability in the family: The effects on children's wellbeing. *Journal of Marriage and Family, 56*, 457–468.

Lester, P., Mogil, C., Saltzman, W., Woodward, K., Nash, W., Leskin, G., et al. (2011). Families overcoming under stress: Implementing family-centered prevention for military families facing wartime deployments and combat operational stress. *Military Medicine, 176*(1), 19.

MacDermid Wadsworth, S., Lester, P., Marini, C., Cozza, S. J., Sornborger, J., Strouse, T., et al. (2013). Approaching family-focused systems of care for military and veteran families. *Military Behavioral Health, 1*, 1–10.

MacGregor, A. J., Corson, K. S., Larson, G. E., & Shaffer, R. A. (2009). Injury-specific predictors of posttraumatic stress disorder. *Injury, 40*, 1004–1010.

Owens, B. D., Kragh, J. F., Wenkos, J. D., Macaitis, J., Wade, C. E., & Holcomb, J. B. (2008). Combat wounds in operation Iraqi freedom and operation enduring freedom. *Journal of Trauma-Injury Infection and Critical Care, 64*, 295–299.

Pessar, L. F., Coad, M. L., Linn, R. T., & Willer, B. S. (1993). The effects of parental traumatic brain injury on the behaviour of parents and children. *Brain Injury, 7*, 231–240.

Peters, L. W., & Esses, L. M. (1985). Family environment as perceived by children with a chronically ill parent. *Journal of Chronic Diseases, 38*, 301–308.

Ponsford, J., Olver, J., Ponsford, M., & Nelms, R. (2003). Long-term adjustment of families following traumatic brain injury where comprehensive rehabilitation has been provided. *Brain Injury, 17*, 453–468.

Power, P. W. (1979). The chronically ill husband and father: His role in the family. *Family Coordinator, 28*, 616–621.

President's Commission on Care for America's Returning Wounded Warriors. (2007). *Serve, support, simplify: Report of the President's Commission on Care for America's Returning Wounded Warriors*. Washington, DC.

RAND Center for Military Health Policy Research. (2008). *Invisible wounds: Mental health and cognitive care needs of America's returning veterans*. Arlington, VA: RAND Corporation.

Reiber, G. E., McFarland, L. V., Hubbard, S., Maynard, C., Blough, D. K., Gambel, J. M., et al. (2010). Service members and veterans with major traumatic limb loss from Vietnam war and OIF/OEF conflicts: Survey methods, participants, and summary findings. *Journal of Rehabilitation Research and Development, 47*(4), 275–298.

Resnik, L. J., & Allen, S. M. (2007). Using international classification of functioning, disability and health to understand challenges in community reintegration of injured veterans. *Journal of Rehabilitation Research and Development, 44*, 991–1006.

Ritenour, A. E., Wickley, A., Ritenour, J. S., Kriete, B. R., Blackbourne, L. H., Holcomb, J. B., et al. (2008). Tympanic membrane perforation and hearing loss from blast overpressure in operation enduring freedom and operation Iraqi freedom wounded. *Journal of Trauma, 64*(2 Suppl), S174–S178.

Rutter, M., & Quinton, D. (1984). Parental psychiatric disorder: Effects on children. *Psychological Medicine, 14*(4), 853–880.

Saltzman, W. R., Lester, P., Beardslee, W. R., Layne, C. M., Woodward, K., & Nash, W. P. (2011). Mechanisms of risk and resilience in military families: Theoretical and empirical basis of a family-focused resilience enhancement program. *Clinical Child and Family Psychological Review, 14*, 213–230.

Stein, B. D., Jaycox, L. H., Kataoka, S. H., Wong, M., Tu, W., Elliott, M. N., et al. (2003). A mental health intervention for school-children exposed to violence. *JAMA: The Journal of the American Medical Association, 290*(5), 603–611.

Tanielian, T., & Jaycox, L. H. (2008). *Invisible wounds of war: Psychological and cognitive injuries, their consequences, and services to assist recovery*. Arlington, VA: RAND Corporation.

Urbach, J. R., & Culbert, J. P. (1991). Head-injured parents and their children: Psychosocial consequences of a traumatic syndrome. *Psychosomatics, 32*, 24–33.

Verhaeghe, S., Defloor, T., & Grypdonck, M. (2005). Stress and coping among families of patients with traumatic brain injury: A review of the literature. *Journal of Clinical Nursing, 14*, 1004–1012.

Visser-Meily, A., Post, M., Meijer, A. M., Maas, C., Ketelaar, M., & Lindeman, E. (2005). Children's adjustment to a parent's stroke: Determinants of health status and psychological problems, and the role of support from the rehabilitation team. *Stroke, 36*(11), 2436–2440.

Walsh, F. (2006). *Strengthening family resilience* (2nd ed.). New York: Guilford Press.

Weaver, F. M., Burns, S. P., Evans, E. T., Rapacki, L. M., Goldstein, B., & Hammond, M. D. (2009). Provider perspectives on soldiers with new spinal cord injuries returning from Iraq and Afghanistan. *Archives of Physical Medicine and Rehabilitation, 90*, 517–521.

Weinstein, E. A., Andres, A., Salazar, M., & Franklin, D. J. (1995). Behavioral consequences of traumatic brain injury. In F. D. Jones, L. R. Sparacino, V. L. Wilcox, J. M. Rothberg, & J. W. Stokes (Eds.), *War psychiatry* (pp. 353–381). Washington, DC: Office of the Surgeon General, 319-51.

Zatzick, D. J., Roy-Byrne, P., Russo, J., Rivara, F., Droesch, R., Wagner, A., et al. (2004). A randomized effectiveness trial of stepped collaborative care for acutely injured trauma survivors. *Archives of General Psychiatry, 61*, 498–506.

Zatzick, D. J., Roy-Byrne, P., Russo, J. E., Rivara, F. P., Koike, A., Jurkovich, G. J., et al. (2001). Collaborative interventions for physically injured trauma survivors: A pilot randomized effectiveness trial. *General Hospital Psychiatry, 23*, 114–123.