Is the Military's Century-Old Frontline Psychiatry Policy Harmful to Veterans and Their Families? Part Three of a Systematic Review

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Abstract The explicit mission of the military's 100-year-old frontline psychiatry doctrine is to ensure that upwards to 95% of deployed service members diagnosed with war stress injury and/or psychiatric disorder are prevented from leaving war zones, unless they are either grossly incapacitated or pose imminent safety risks to self or others. In the final segment of this comprehensive three-part review, we examine systematically evidence that the military's mental health policies may be harmful to veterans and their families in order to address unanswered clinical, moral, and legal questions. Our analysis reviews, empirical studies on the health effects from cumulative exposure to war stress, previously classified reports on frontline psychiatry, prevalence and treatment of mental health conditions among deployed personnel, risk and protective factors of combat-related post-traumatic stress disorder (PTSD), and prospective deployment research on health outcomes. There has not been the proper research undertaken comparing in situ treatment vs. evaluation, so conclusions are limited. Nevertheless, results show there is a body of evidence that repeated exposure to war stress appears associated a wide variety of long-term adverse medical, psychiatric, and social outcomes. The current findings, combined with our two previous reviews, provide support for the conclusion that veterans and their families appear possibly more likely to be harmed than helped by the US military's policies and procedures. In this regard, it appears that frontline psychiatry is perhaps contributing to a generational cycle of self-inflicted wartime behavioral health crises. Several corrective actions including possible class action, as has happened in the UK, and a call for national independent inquiries with congressional oversight should be done.

"*During World War II infantrymen were breaking down psychologically at such high rates in certain combat areas as to suggest to many psychiatric observers that the resistance of the average man was being exceeded, that the stress of warfare in these areas was so great that most men exposed to it long enough would break down. Such studies as could be made in wartime seemed to confirm these impressions (Beebe & Appel, 1958; p. 1).*"

Psychiatric attrition and its prevention have been a prescient concern of world military powers. For example, during the lead-up to its belated 1918 entry into the First World War (WWI: 1914–1918), the US military openly acknowledged its duty to prepare for managing the adverse health effects from exposure to modern-day war stressors: "There is a strong suspicion that the high insanity rate in the Spanish-American War and the Boer War, and perhaps in earlier conflicts, was due, in part at least, to failure to recognize the real nature of the severe neuroses, which are grouped under the term 'shell shock' in this war" (Salmon, 1917; p. 14). In response, the military has fully embraced frontline psychiatry policies or combat operational stress control (COSC) programs designed to dramatically reduce psychiatric-

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related evacuations from war zones (see Russell & Figley, 2016a). The US military's current frontline psychiatry doctrine expects up to 95% of deployed personnel identified as war stress casualties and/or diagnosed with a psychiatric condition will be returned to duty (RTD) after brief respite and restoration interventions, unless their mental health status deteriorates to the point of severe impairment and/or present a clear danger to self or others (e.g., Brusher, 2011; Department of the Army, 2006).

Who Benefits from Frontline Psychiatry?

The US military claims that its force conservation policies are mutually beneficial to accomplishing the military mission as well as enhancing the long-term health and well-being of deployed personnel and their families (Russell & Figley, 2016a, b). Others, including the British High Court (e.g., McGeorge, Hughes, & Wessely, 2006), have questioned the ethical, legal, and scientific merits of frontline psychiatry (e.g., Russell & Figley, 2016a). Nevertheless, the factual bases underlying the military's justification for its century-old mental health policies has never been systematically reviewed or challenged until now (Russell & Figley, 2016b). In our second of three articles on the topic, we found evidence that the military has benefited from its policy to prevent psychiatric evacuations from war zones. However, claims of individual benefit are largely unsupported (Russell & Figley, 2016b). Consequently, critical questions remain. Is the military's frontline psychiatry doctrine generally harmful to the long-term health of deployed personnel and their families?

Acknowledging Competing Military Missions

The inherent risks of war include being killed, physically wounded, infected by disease, and exposure to chronic and potentially traumatic war stress that can lead to developing a spectrum of war stress injury including but certainly not limited to post-traumatic stress disorder (PTSD) and suicide (e.g., Russell & Figley, 2015a, b). Battlefield medical lessons have been properly researched and implemented to reduce the unnecessary or preventable physical suffering and death caused by human warfare in keeping with the mission of military medicine (e.g., Gabriel, 2013; Russell & Figley, 2016b). In the mental health area, the military should show an equivalent commitment to learning war trauma lessons toward preventing the unnecessary suffering and loss of life attributed to war stress exposure (Russell, Figley, & Robertson, 2015). In short, the issue can be boiled down to a single proposition. What can and should be done to mitigate predictable health risks of deployed personnel and their families while still allowing the military to accomplish its basic warfighting mission?

Purpose of the Study

Our third and final article on the topic provides a systematic evidentiary review of the potential harm to deployed service members and their families caused by the military's frontline psychiatry/COSC policies. We undertake this review as an attempt to improve the military mission or perhaps conclude that the military's frontline policies are the best available to meet its force health protection and warfighting missions. Our methodology in conducting our systematic review of the issues involved was described earlier (Russell & Figley, 2016b). We begin with an overview of the scientific and military reports on the nature and type of combat operational stress reactions (COSR) and the dosage effect of exposure to extreme stress and its health impact. Next, we examine studies that provide direct testing of the hypothesis that frontline psychiatry is harmful, followed by a review of several research lines offering indirect evidence of harm in these regards. Lastly, we offer suggestions for moving forward.

Overview of Deployment, War, and Combat-Related Stress

It is axiomatic that the war combatant, regardless of the combatant's predisposition or constitution, is susceptible to breakdown when confronted by protracted, excessive, or traumatic war stress. This point was made repeatedly by British military experts who testified during the 2003 *Multiple Claimants v. MoD* case (McGeorge et al., 2006) and reaffirmed by the 2007 Department of Defense (DoD) task force on mental health (DoD TF-MH, 2007): "Involvement in combat imposes a psychological burden that affects all combatants, not only those vulnerable to emotional disorders or those who sustain physical wounds. Combat is a life-changing experience, imposing long-lasting emotional challenges for combatants" (p. 5).

The empirical literature on the nature and long-term health effects of wartime stressors has been extensively reviewed [e.g., Institute of Medicine (IOM), 2008; Kulka et al., 1990; Marshall, Davis, & Sherbourne, 2000]. We know that acute and chronic breakdown will occur when human resistance threshold is exceeded by duration, intensity, and nature of cumulative, inter-related effects of (a) deployment-related stressors (i.e., prolonged family separation, chronic boredom, worrying about family, climate change, excessive noise, chemo-bio warning drills, disruption in stress-buffers, financial concerns, overcrowding, sexual harassment, dietary change, sleep deprivation, inescapable duty, anticipation anxiety, fear for buddy's safety); (b) war-related stressors from exposure to persistent, multiple invisible or "unpredictable" threats (i.e., ambush, chemo-bio weapons, mines, IEDS, torpedoes, mortars, long-range missiles, indistinguishable enemy), devastation and injury (i.e., high explosive munitions, armored vehicles, rapid-fire, automatic weapons), and

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Table 1 Risk factors for the US military personnel deployed to Iraq or Afghanistan (MHAT-I, 2003 and J-MHAT, 2013)

Survey question	2003	2009	2010	2012	2013
Combat exposure					
Threat: IED exploded near you	No data	39%	53%	63%	53%
Fighting: shooting at enemy	No data	49%	70%	56%	49%
Knowing someone seriously injured or killed	68%	54%	73%	74%	66%
Being attacked or ambushed	72%—receiving fire	60%	78%	68%	66%
Killing: responsible for death of combatant	25%	25%	38%	24%	20%
Multiple deployments					
% who have been on more than one deployment	No data			42%	36%
Anger					
Threaten someone in your unit with physical violence	No data	37%	32%	26%	21%
Sleep problem					
Concern about not getting enough sleep rated as high or very high	No data	28%	31%	34%	27%
Blast-related event					
% receiving no TBI evaluation after injury involving being dazed, confused, or "seeing stars"	No data			38%	37%
% receiving no TBI evaluation after knocked out (lost consciousness)	No data			26%	25%
Relationship problem					
Planning separation or divorce	11%	12%	15%	11%	12%

comparative lack of safety or "controllability" (i.e., armor piercing munitions, long-range weapons, real-time surveillance and communications, "bunker busters," night vision, precision-guided weapons, guerilla "swarming" tactics); and (c) potential exposure to combat-related stressors [i.e., killing, being wounded, buddy killed, "collateral damage," war atrocities, survivor guilt, prisoner of war (POW), death of children, handling human remains]; all potentially resulting in long-term health, social, and spiritual problems (e.g., IOM, 2008; Marshall et al., 2000).

Exponential increase in war-related stressors provides environmental context for acute and chronic psycho-physical breakdown (see Russell & Figley, 2016a). Table 1 provides a contemporary snapshot of war zone stressors that the US military personnel deployed to Afghanistan and Iraq must endure, each representing risk factors for developing war stress injury, such as PTSD (e.g., DVA/DoD, 2010).

Positive or Adaptive Stress Reactions

Discussions on war-related stressors are often unfairly slanted toward negative or aversive aspects of going to war (e.g., Department of the Army, 2006). Many service personnel, especially combat veterans, often regard their wartime experiences with mixed appreciation as being one of their "best" even if "hardest" and "worst" life events (e.g., Jones, 1995a).

Combat and Operational Stress Reactions

COSR is the DoD-approved term (replacing earlier terminology, like "battle fatigue" or "combat exhaustion") used to normalize "acute stress responses" (ASR) related to deployment and war zone stressors and acute "combat stress reactions" (CSR) related to combat exposure [e.g., Department of Veterans Administration (DVA)/DoD, 2004, 2010; Department of the Army, 2006]. The

COSR reflects a "normal" universal human adaptive stress response involving a broad spectrum of symptoms including physical (i.e., fatigue, muscle tremors, rapid heart rate, chest pain, nausea, bruxism, headaches), cognitive (i.e., intrusive images, hyper-vigilance, poor concentration, nightmares, memory problems), emotional (i.e., anxiety, grief, fear, guilt, emotional shock, depression, irritability, emotional numbing), and behavioral (i.e., insomnia, somatic complaints; exaggerated startle; pacing; alcoholism; antisocial acts; withdrawal; and change in communication) components lasting between 1 to 4 days (e.g., Department of the Army, 2006; DVA/DoD, 2004, 2010). Per the military's *Textbook of Military Medicine on War Psychiatry*, transient CSR/COSR are universal and not signs of psychopathology (Jones, 1995a? or b?). Differences in severity, type, and length of COSR associated with acute breakdown is highly individualized and determined by a wide range of risk and protective factors, but the most important determinant of when and how breakdown occurs concerns the intensity, severity, and duration of war stress (e.g., IOM, 2008).

Managing Combat and Operational Stress

Individuals with acute COSR are managed by frontline medical and mental health personnel applying the BICEPS-principles of Brevity (i.e., respite of 1–4 days), immediacy (i.e., when COSR appears), contact (i.e., maintain identity as soldier vs. patient), expectancy (i.e., return to full duty), proximity (i.e., near the soldier's unit), and simplicity (i.e., reassure of normality, rest, replenish bodily needs, restore confidence, and return to duty). BICEPS replaces earlier proximity, immediacy, and expectancy (PIE) principles (Department of the Army, 2006). Extensive efforts to normalize COSR began in earnest in WWII when psychoneurosis, war hysteria, and other psychiatric labels were largely replaced with "battle/combat fatigue" or "battle/combat exhaustion," conveying normalcy and clear expectation for recovery and RTD (Russell & Figley, 2016a). In addition to conserving the fighting force, the military's emphasis on normalizing COSR also serves to dispel negative attributions of individuals being predisposed, emotionally weak, psychiatrically ill, or otherwise incapable of continuing the mission (e.g., Jones, 1995b).

Maladaptive and Long-Term Stress Reactions

If COSR is unabated after 1–4 days of frontline intervention, service personnel are usually triaged and transitioned to more definitive levels of care (Department of Navy and U.S. Marine Corps., 2010). Constellations of diverse psychophysical symptoms cluster into any number of specific war stress injury categories, broadly classified as neuropsychiatric conditions (e.g., PTSD, mood disorders, anxiety disorders, psychotic conditions, conversion disorder, substance use disorders, traumatic brain injury, dissociative disorders, personality disorders, eating disorders, impulse control disorders) as well as

patterns of medically unexplained physical symptoms (MUPS) or "war syndromes" reported during every armed conflict (e.g., nostalgia, irritable/soldier's heart, hysteria, shell shock, dyspepsia, chronic fatigue, fibromyalgia; Jones & Wessely, 2005; Russell & Figley, 2015a, b).

Misconduct Stress Behaviors and Criminal Acts

The Department of the Army (2006) describes a range of maladaptive stress reactions involving misconduct/criminal acts, from minor to serious violations. Examples include mutilating enemy dead, not taking prisoners, looting, rape, malingering, combat refusal, self-inflicted wounds, "fragging," desertion, torture, and intentionally killing non-combatants (Department of the Army, 2006). In addition to predicting PTSD, high combat exposure is associated with war zone misconduct and participation in atrocities (e.g., Dohrenwend et al., 2013) as well as post-deployment violence toward self, spouse, and others (e.g., Beckham, Feldman, & Kirby, 1998; Hiley-Young, Blake, Abueg, Rozynko, & Gusman, 1995).

Evidence of a Harmful Dosage Effect from Cumulative Exposure to Extreme Stress

The empirical association between increasing levels of combat (traumatic) stress exposure corresponding with increased risk of adverse health outcomes such as war (traumatic) stress injury, like PTSD, is referred to as the *dose-response or dosage effect* [e.g., Institute of Medicine (IOM), 2008; Swank & Marchand, 1946]. For instance, Noy (2001) re-analyzed a longitudinal study of 4000 US soldiers evacuated for war stress injuries during WWII, and they found significant outcome differences associated with gradations of stress like Israeli Defense Force studies (e.g., Noy, 1991). However, many effects of war stress exposure are not accounted for uniquely by the dose-response model. According to the DVA/DoD (2010), "individuals with sub-threshold PTSD are at high risk for suicidal ideation" (p. 34) and level of combat exposure including killing has been linked to suicide in Iraq war veterans (e.g., Maguen et al., 2011), whereas other studies report that combat exposure is significantly related to only PTSD and depression and not suicide per se (e.g., Bryan, Hernandez, Allison, & Clemans, 2013). However, as the IOM (2008) asserted, "The lack of an apparent dose-response relationship does not rule out an association. If the relative degree of exposure among several studies can be determined, indirect evidence of a dose-response relationship may exist" (p. 25). Therefore, whether alone or secondary to developing PTSD, repeated exposure to war stress contributes to epidemics of wartime veteran suicides (see Russell & Figley, 2015a, b).

Non-Military-Related Research on Dosage Effects of Extreme Stress

Dosage effects from extreme stress are not unique to the military. For example, the Centers of Disease Control and Prevention's (CDC) ongoing Adverse Childhood Experiences, or ACE, study has been examining the longitudinal health impact of early cumulative exposure to extreme or traumatic stress since 1995 (see https://www.cdc.gov/violenceprevention/acestudy/). The CDC's researchers report a robust dosage effect whereby a familiar broad array of harmful physical and mental health-related outcomes in adults is linearly associated with the greater amount of ACE exposure. Specifically, graded increases in high stress exposure result in exponentially greater risks for PTSD, chronic pain, sleep disturbance, eating disorders, personality disorders, suicide, substance abuse, cardiovascular disease, risk-taking behaviors, interpersonal violence, psychosis, multiple unexplained physical symptoms, depression, poor physical health, and premature death (e.g., Felitti et al., 1998). However, akin to military studies on war stress, resilience and PTG in non-military populations is also a potential outcome to repeat exposure (e.g., Calhoun & Tedeschi, 2013). Understanding the inherent risks associated with the dosage effect of war stress is fundamental to appreciating the potential harm from the DoD's current frontline psychiatry doctrine. We first review the military's own reporting on the topic before examining current scientific medical evidence.

Military Research on Adverse Health Implications of Dosage Effect from War Stress

The military has long been aware of the linkage between modern combat stress from industrialized warfare and war stress injury, taking place as early as the 1858 Crimean War (Maclean, 1867) and certainly by the US Civil War (e.g., Da Costa, 1871). Prior to WWI, the UK army reviewed war stress casualty records from 1886 to 1908 of Germany, French, and British armies. They found significant associations between increased rates of war stress injury and duration of war stress—"the amount of the increase is proportional to the duration of campaign" (Kay, 1912; p. 153)—and intensity of combat exposure (Kay, 1912; p. 153). History has substantiated Kay's (1912) prognostications whereby the total number of neuropsychiatric casualties has outnumbered the combined total of deployed personnel both physically wounded and killed in action after every major war since WWI (Russell & Figley, 2015a, b).

The link between cumulative exposure to war stress and psychiatric breakdown was well documented during WWII. For example, during the WWII Italian Campaign, the US army researchers reported on psychiatric casualty rates ("about 75% and 100% of the original men were psychiatric casualties at the end of 125 and 300 days, respectively;" Swank, 1949; p. 500). The WWII cohort's lessons learned that regarding war stress exposure provides empirical support for Lord Moran's (1945) WWI-era claim that every man (and woman) has a breaking point (p. 11).

Contemporary military evidence for the dosage effect from war stress in Iraq and Afghanistan veterans was first reported in 2004 when the US army researchers assessed the level of combat exposure with pre- and post-deployment health screenings of 2530 combat personnel deployed to Iraq and 3671 deployed to Afghanistan (Hoge et al., 2004). Results indicated that, after combat duty in Iraq compared to before deployment, rates of PTSD were significantly higher. The results did not differ for the army and marine samples. Also, the study found significant associations involving major depression and alcohol misuse (p. 16). Moreover, further empirical substantiation of a dose-response was reported for PTSD. Considering soldiers and marines who had been deployed to Iraq, strictly defined PTSD increased in a dose-response way with the number of firefights experienced during deployment (Hoge et al., 2004; p.16).

Old Sergeant's Syndrome

Throughout military history, documentation of chronic war stress injury within the military's most combat seasoned, highly trained, and well-respected leaders presents further evidence of the dosage effect. For example, Sobel (1949) examined 100 non-commissioned officers "old" in combat experience who had been identified with "*old sergeant syndrome*" or "*Guadalcanal twitch*." Also, second lieutenant Audie Murphy (1924–1971), depicted in the 1949 movie *To Hell and Back*, is the American military's most highly decorated soldier, having received 33 awards for bravery including the Medal of Honor. He fought in nine major European campaigns and was physically wounded three times. Yet, he suffered publicly from severe battle fatigue, insomnia, and depression symptoms consistent with PTSD (http://www.audiemurphy.com). The aviator's equivalent of old soldier's syndrome was called *flier's fatigue* or *operational fatigue*. Flier's fatigue and battle deaths were highest for bomber crews, with fewer than 25% completing a full tour of duty. The diagnosed had high relapse rates, with the majority requiring further treatment after their tour (Chermol, 1985).

One finds contemporary support of old sergeant's syndrome in the past elite reports of high prevalence of war stress injury like PTSD even in the military's most elite Special Forces (e.g., Hing, Cabrera, Barstow, & Forsten, 2012). We could find no military research on the long-term health outcomes of deployed personnel diagnosed with old sergeant's syndrome or flier's fatigue.

US Government Studies on Dosage Effect from Combat Stress

Beebe and Appel (1958) conducted the first known US government sponsored study on the psychological tolerance to combat exposure. They followed 3500 US army infantry personnel from WWII units that fought in the European Theater of Operations (ETO; $N = 1000$ and $N = 500$ replacement personnel) or Mediterranean Theater of Operations (MTO; $N = 2000$ original personnel). Per the authors, evidence of the cumulative effects of war stress exposure that were apparent in that the probability of psychiatric "breakdown" per unit of stress was found to increase over succeeding weeks (Beebe & Appel, 1958; p. 152). They noted that fear of battle increases with length of combat (Beebe & Appel, 1958; p. 152). In conclusion, Beebe and Appel (1958) reported, "Our principal findings is that the breaking point of the average rifleman seems to have been reached at about 88 days of company combat (days in which a company casualty occurred)" (p. 164).

Similarly, after analyzing a host of pre-military (e.g., childhood trauma), military (e.g., combat), and post-military (e.g., level of social support) factors previously reported to be etiological factors in combat PTSD, the authors of the National Vietnam Veterans Readjustment Study (NVVRS; Kulka et al., 1990) concluded that, in war veterans, exposure to war zone stress contributes substantially to PTSD development. Moreover, the contribution in this regard is independent of a broad range of potential predisposing factors (Kulka et al., 1990; p. 85).

Dohrenwend, Yager, Wall, and Adams (2013) conducted an independent and scientifically more rigorous analysis of the NVVRS data to address methodological limitations, including the undertaking of a substantially more thorough assessment of the etiologic role of combat exposure (Dohrenwend et al., 2013). Results of the re-analysis revealed that, when combined, three measures of war stress exposure, combat exposure, vulnerability, and personal involvement in harming civilians or prisoners reached 97% sufficiency in eliciting new onset PTSD symptom syndrome (PSS). Per Dohrenwend et al. (2013), the statistically significant results revealed "a clear dose-response relationship between the combat stress exposure severity scale and the risk of both PSS onset and current PSS" (p. 14).

Contemporary Reviews of Scientific Literature on War Stress Impact on Health

After the Persian Gulf War, several large national scientific reviews were conducted on the long-term health effects of war stress exposure (e.g., IOM, 2008). Per the

IOM (2008), the generated symptoms of psychological or bodily distress might last for years (p. 49), which can lead to "adverse long-term health consequences" (p. 65).

In addition, the IOM (2008) cited empirical evidence linking excessive war stress exposure as at least a co-factor responsible for acute and long-term pathogenic changes in the (a) endocrine system linked to obesity, insulin resistance, and glucose intolerance; (b) immune and inflammatory response systems related to autoimmune and age-related diseases; (c) cardiovascular system contributing to hypertension, atherosclerosis, and coronary heart disease; and (d) gastrointestinal system and brain-gut axis related to functional gastrointestinal disorders, such as functional dyspepsia and irritable bowel syndrome providing common linkage to the clustering of somatic symptoms such as medically unexplained symptoms or war syndromes (Russell & Figley, 2015b).

Methodological limitations, especially few scientifically rigorous studies on health effects from deployment and war-related stressors, resulted in IOM (2008) finding insufficient evidence to determine a causal relationship between deployment-related stressors and specific health effects. However, there was sufficient evidence of a consistent positive association between deployment to a war zone and specific long-term health effects for psychiatric conditions (i.e., PTSD, anxiety, depression) with alcohol abuse, suicide, accidental death after deployment, and marital and family conflict also considered as adverse sequelae of deployment-related stress (IOM, 2008). Furthermore, the IOM (2008) found limited but suggestive evidence of connections between deployment-related stress and specific long-term medical conditions, like chronic fatigue syndrome, fibromyalgia, chronic pain, gastrointestinal symptoms, skin disorders, drug abuse, increased symptom reporting, and unexplained illness. In a later section, we review a recent series of prospective health studies and impact from military deployments.

Research on Durability of Long-Term Health Effects from War Stress Injury

Archibald, Long, Miller, and Tuddenhan (1962) followed 57 WWII combat veterans diagnosed with chronic combat fatigue syndrome 15 years after the war compared to 48 non-combat WWII veterans seen at a mental hygiene clinic. Combat veterans showed significantly more psychopathology than controls (tension, diffuse anxiety, irritability, depression, nightmares, headaches, sweaty hands, jumpiness, blackouts, avoidance behaviors, excessive guilt), with 82% reporting that their symptoms interfered with their abilities to provide for their family (in contrast to 71% of controls; Archibald et al., 1962). Evidence of the durability of psychophysical changes has been reviewed in 1475 WWII and Korean War veterans (Brill & Beebe, 1952), who reported residual symptoms years

after military discharge, including anxiety (45.3%), depression (29.6%), nightmares (22.1%), insomnia (31.9%), headache (42.8%), irritability (48.6%), difficult concentration (20.1%), restlessness (45.4%), and gastrointestinal (41.7%), cardiovascular (21.9%), and musculoskeletal (34.8%) problems. In addition, the National Research Council conducted a 5-year follow-up study on 1475 US personnel treated for psychoneuroses in the military (Brill & Beebe, 1955). Long-term outcomes reveal that most veterans were functioning in civilian life at about the same level as they did prior to military service. However, 90% of the clinical sample remained symptomatic, with 43% seeking psychiatric treatment after discharge, along with 70% reporting deterioration in overall health, and 34% identified as disabled (Brill & Beebe, 1955).

Solomon, Shklar, and Mikulincer's (2005) longitudinal study on treating acute CSR of Israeli soldiers led to the conclusions that chronic PTSD could develop along with possibly irreversible "pathological changes and debilitating co-morbidity" (p. 2312). Ranson (1949) similarly noted that "prolonged psychogenic visceral dysfunction" could lead to "permanent morphological changes" (p. 279). Also, Menninger (1947) noted that chronic "visceral dysfunction" could lead to "structure changes" (p. 96).

Lastly, the NVVRS (Kulka et al., 1990) reported 30% of combat veterans still had PTSD and multiple other co-occurring problems over a decade since the Vietnam War's end. Lippa et al. (2015) conducted an extensive examination of 255 deployed US service members undergoing medical disability assessment, finding that 90% had a psychiatric or behavioral condition, 50% had three or more conditions, and those with deployment trauma consisting of mild TBI, PTSD, and depression were significantly more likely to be substantially disabled.

Overall, there appears to be some reliable evidence that the harmful effects of war stress injury often become chronic impediments to health and well-being for service members and their families as concluded by the IOM (2008). The next section examines the question using more direct evidence, particularly in relation to harm.

Direct Evidence that Frontline Psychiatry Is Harmful

The US military's frontline psychiatry doctrine emphasizes early intervention for CSR/COSR or other behavioral health conditions within war zones. RTD is explicitly designed to prevent or mitigate the harmful dosage effect of war stress by avoiding stigmatizing psychiatric labeling, treatment, and evacuations (e.g., Department of the Army, 2006; Department of Navy and U.S. Marine Corps, 2010; Russell & Figley, 2016a). Our previous review found insufficient evidence supporting the military's beneficial health claims from its war zone mental health policies

(Russell & Figley, 2016b). However, what proof is there that the military's frontline psychiatry/COSC programs may be harmful to military personnel? To best address this question, we searched for any publication since WWI directly comparing the immediate and/or long-term outcomes for deployed personnel either RTD via frontline psychiatry or evacuated for psychiatric treatment outside war zones.

The US military and its medical departments has established numerous research agencies since 1893 to fulfill its force health protection mission, including mental health (see Russell & Figley, 2016b). Although research in war zones can be formidable, the direct benefits to military medicine and broader society from operational investigations have been instrumental in medical breakthroughs, such as immunizations, disease prevention, diagnostics, triage, surgery, burn care, emergency medicine, and a host of other life-saving advances responsible for a current 97% survivability rate from physical wounds (e.g. Gabriel, 2013). Moreover, the Israel Defense Force (IDF) has conducted research on its frontline psychiatry doctrine, including direct comparisons of outcomes for deployed personnel RTD versus evacuated to hospitals (e.g., Solomon & Benbenishty, 1986). Consequently, one would reasonably expect ample investigations of the frontline psychiatry's clinical outcomes to back up claims of "fostering resilience or ability to withstand adversity without becoming significantly affected, as well as the ability to recover quickly and fully from whatever stress-induced distress or impairment has occurred" (Department of Navy & U.S. Marine Corps, 2010; p. 1–2).

US Military Research on Frontline Psychiatry Outcomes

We could not find a single US military study comparing the immediate or long-term outcomes of deployed personnel RTD via frontline psychiatry versus psychiatrically evacuated. In fact, the only US studies reporting frontline psychiatry health outcomes were by the National Research Council and Veterans Administration after WWII (Brill & Beebe, 1955) and independent RAND researchers on the US Marine Corps' version of frontline psychiatry/COSC, called Operational Stress Control and Readiness (OSCAR) program (Vaughan, Farmer, Breslau, & Burnette, 2015). Neither investigation tested the core tenet of frontline psychiatry doctrine that RTD and preventing psychiatric evacuations "promotes long-term health and well-being of individual Marines and Sailors and their family members" (Department of Navy and U.S. Marine Corps, 2010; p. 1–2).

WWII Outcome Study of Psychiatric Casualties

Brill and Beebe's (1955) 5-year follow-up study involved an extensive examination of 1475 US personnel diagnosed and treated for psychoneuroses while on active duty compared to control groups of veterans not diagnosed with

psychoneuroses. The primary purpose of the research was to assess the long-term effects after psychiatric breakdown and treatment. They reported that 24% of the veterans received final treatment via frontline psychiatry and 76% were eventually evacuated and treated at hospitals outside war zones. About 70.1% of the combatants receiving hospitalized psychiatric treatment were RTD as compared to 70.2% of those medically treated for physical wounds (Brill & Beebe, 1955). In addition, data on length of hospitalized care revealed that only 9.6% of the evacuees for psychoneuroses remained in hospitals for 120 days compared to 26.6% of those physically wounded (Brill & Beebe, 1955). No direct comparisons were made between those RTD via frontline psychiatry or evacuated. Nonetheless, both findings appear to refute the principle of proximity (not being removed from the war zone helps) underlying the military's repeated claim of harm caused by psychiatric evacuations and treatment.

2015 RAND Outcome Study on Frontline Psychiatry

The second US government sponsored frontline outcome study was 80 years after the WWII investigation. RAND researchers examined the health benefits from extensive pre-deployment OSCAR prevention or resilience training and peer support, in a sample of 2523 US marines deployed to Iraq or Afghanistan who either received the supplemental frontline psychiatry services or did not (Vaughan et al., 2015). The independent investigators reported that the only significant benefit that OSCAR provided was an increase in personal help-seeking behaviors (Vaughan et al., 2015). More importantly, the researchers were taken aback that many clinical outcomes from the OSCAR group were generally worse compared to marines who did not receive the extra prevention intervention, including higher rates of PTSD, depression, and poorer physical health (Vaughan et al., 2015). While methodological limitations prevent generalizing the RAND's results to all the military's frontline psychiatry programs (Vaughan et al., 2015), it is notable that both non-military investigations into frontline psychiatry yielded evidence rebutting military claims of health benefits.

Israel Defense Force Outcome Research

Only three IDF retrospective studies from the 1982 Lebanon War met inclusion criteria for head-to-head comparisons of deployed personnel RTD via frontline psychiatry versus those evacuated and treated outside war zones (Solomon & Benbenishty, 1986; Solomon, Weisenberg, Schwarzwald, & Mikulincer, 1987; Solomon et al., 2005). Moreover, the IDF's research offers direct assessment of the harm hypothesis from a longitudinal perspective at 1 (Solomon et al., 1987) and 20 years (Solomon et al., 2005) after war. We had previously

reported data on this series of studies in the first of our three articles in this series (Russell & Figley, 2016a).

1986 Study of Clinical Outcomes from Frontline Psychiatry

Solomon and Benbenishty's (Solomon & Benbenishty, 1986) study was the first-ever investigation directly comparing clinical outcomes of groups of deployed personnel RTD after receiving frontline psychiatry versus those evacuated and treated at a general hospital. They examined RTD and PTSD rates of an unspecified number of Israeli soldiers treated for combat stress reactions (CSR) 1 year after the 1982 Lebanon War. Results indicated that being diagnosed with CSR was significantly related to developing PTSD regardless of treatment group. The researchers also reported a positive dose-response of applying frontline psychiatry proximity, immediacy, and expectancy (PIE) principles. Consequently, as mentioned in our first article, the initial IDF findings appear to lend direct support for the military's health benefit claims and refute the harm hypothesis. However, caution is required in drawing conclusions about the efficacy of PIE principles because the authors found no overall statistical significance (Solomon & Benbenishty, 1986). That said, a 55% PTSD rate for deployed personnel RTD after receiving frontline psychiatry greatly exceeds those reported in every epidemiological study conducted on combat-related PTSD. For example, national studies on Vietnam veterans reported a 30% lifetime prevalence of PTSD in combat veterans (Kulka et al., 1990). Importantly, Solomon and Benbenishty's (Solomon & Benbenishty, 1986) results offer a glimpse into the relative clinical outcomes (PTSD rates) of deployed personnel RTD after receiving frontline psychiatry and what is known about PTSD prevalence in deployed populations. Given that CSR severity and inpatient treatment are two major unspecified variables for evacuees, the initial analysis from the IDF's seminal study raises legitimate concerns of potential greater harm from frontline psychiatry. Nevertheless, substantial methodological limitations exist prohibiting any firm conclusions.

1987 IDF Re-Analysis of Frontline Psychiatry Outcomes

The second IDF study compared outcomes from both frontline psychiatry and psychiatric evacuation of 470 Israeli veterans 1 year after the 1982 Lebanon War (Solomon et al., 1987) as well as a control group. Results indicated experiencing CSR significantly increased a veteran's risk of subsequent PTSD diagnosis regardless if the soldier was RTD or evacuated (Solomon et al., 1987). That said, in regard to potential evidence of harm from frontline psychiatry, we can now compare the relatively low 16% PTSD rate of deployed veterans who did not receive frontline psychiatry (control group) with a 59% PTSD rate of those RTD after frontline intervention (Solomon et al., 1987). A finding of 16% PTSD in deployed

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veterans falls within the range of previous epidemiological investigations (e.g., Hoge et al., 2004).

Therefore, we should reasonably expect that if frontline psychiatry is effective in mitigating the adverse dosage effects of war stress as the military proclaims (e.g., Department of the Army, 2006), then PTSD rates of a frontline psychiatry group should be comparatively equal to the control group. However, a 59% PTSD rate from the frontline psychiatry group is like the 52% reported earlier (Solomon & Benbenishty, 1986) and represents a clear negative trend that substantially exceeds expectations even of the controversial 30% PTSD rate reported by the NVVRS (Kulka et al., 1990). Combined with the fact that the IDF's second and reportedly more rigorous study now reports no significant differences in clinical outcomes between frontline psychiatry and evacuated treatment groups, the finding is even more troublesome for frontline psychiatry, given the unknown status of CSR severity and inpatient treatment factors of evacuees (Solomon et al., 1987).

2005 IDF 20-Year Follow-Up on Long-Term Health Outcomes from Frontline Psychiatry

The final study directly comparing clinical outcomes of frontline psychiatry and evacuees is the IDF's 20-year retrospective re-analysis of its 1987 study (Solomon et al., 2005). Results of the analysis comparing veterans RTD after frontline psychiatry versus those evacuated again revealed no significant differences in regard to PTSD diagnosis whereby 30 (frontline psychiatry) and 41% (evacuated) veterans were later diagnosed with PTSD that was significantly higher than 14% PTSD in the control group (Solomon et al., 2005). However, the researchers referred to the serious methodological flaws mentioned earlier, thus prohibiting any causal inferences associated with RTD and evacuation status.

Looking at evidence of potential harm from frontline psychiatry, we find the same trend of substantially greater PTSD rates in personnel RTD after frontline interventions (30%) than veterans who remained in war zones (14%). Again, on the face of it, one may argue the RTD (30% PTSD) group enjoyed better clinical outcomes than those evacuated (41% PTSD). However, CSR severity and absence of treatment information at a general hospital prohibit inferences about evacuees. For example, is the 41% PTSD rate in evacuees a by-product of more severe CSR and inadequate treatment? More importantly, the third IDF study found the two treatment groups to be relatively indistinguishable across most clinical outcomes, including PTSD diagnosis. All things being equal, we would expect that if RTD via frontline psychiatry is efficacious in ameliorating the adverse health impact from cumulative war stress as purported (e.g., Department of the Army, 2006), then the clinical outcomes between veterans RTD should be roughly equal to controls and significantly better than evacuees. Neither was the case. Whereas the majority

(70%) of veterans RTD after receiving frontline psychiatry did not develop PTSD, the IDF found overall significantly poorer clinical outcomes of veterans RTD (e.g., 30% PTSD) than their non-frontline psychiatry counterparts (e.g., 14% PTSD) and insignificant differences between RTD and evacuated groups 20 years after the war (Solomon et al., 2005

Summary of Direct Empirical Testing of Frontline Psychiatry Harm

The IDF's two most recent semi-controlled analyses allowed statistical comparisons of clinical outcomes (i.e., PTSD diagnosis) between deployed personnel RTD after frontline treatment, veterans evacuated to general hospitals, and a matched control group of veterans receiving no treatment 1 and 20 years after the war (Solomon et al., 1987; Solomon et al., 2005). The two IDF investigations offer the only head-to-head comparisons of the relative health benefits versus harm posed by frontline psychiatry resulting in two major findings: (a) both studies reported no substantial clinical outcome differences between frontline psychiatry and evacuated groups in direct contradiction to expectations of significantly worse outcomes in evacuees based on the military's claim of health promoting benefits from RTD and prevention of evacuation and (b) both IDF studies reported statistically significantly worse long-term outcomes from frontline psychiatry versus control groups, in direct contradiction to expectations of roughly equivalent outcomes based on the military's claim of the proven efficacy of frontline psychiatry's treatment to safely RTD up to 95% of personnel who experience CSR/COSR.

In sum, the overall preponderance of evidence from the IDF studies directly assessing the research question indicates that frontline psychiatry more likely harms versus protects the health of deployed personnel. That said, serious methodological flaws of the IDF's retrospective uncontrolled research preclude any definitive conclusions. However, the absence of any subsequent replication of the IDF studies from the 1982 Lebanon War, particularly by DoD with its extensive research capabilities, suggests concerns about opening Pandora's box. Nevertheless, recognizing the need for additional evidence, we extend our review to other research lines providing less direct testing but no less important evaluation of the harm hypothesis.

Indirect Evidence that Frontline Psychiatry Is Likely Harmful

To further our investigation into the potential harm of frontline psychiatry, we reviewed the following seven lines of research: (a) outcome studies on CSR/COSR, (b) relapse rates from frontline psychiatry, (c) etiological studies of combat PTSD,

(d) research on deployment length, (e) prospective research on health impact from deployments, (f) effects of stress on mental illness, and (g) access to evidence-based therapies.

IDF studies almost universally report statistically significant worse outcomes for veterans developing CSR/COSR in war zones even after receiving frontline psychiatry, including significantly greater risk of immediate and delayed onset of PTSD (e.g., Horesh, Solomon, Zerach, & Ein-Dor, 2011). Furthermore, the IDF provides evidence of a dosage effect whereby progressively poorer clinical outcomes are associated with repeat CSR (e.g., Solomon, Mikulincer, & Jakob, 1987; Solomon, Oppenheimer, Elizur, & Waysman, 1990), a major problem for the frontline psychiatry's RTD doctrine.

Overall, the evidence poses a serious challenge to the military's frontline psychiatry policies. Significantly, worse outcomes for frontline psychiatry groups experiencing CSR as compared to veterans without CSR suggest that RTD may be harmful. Secondly, if the IDF is correct and the presence of CSR alone is the single best predictor of nearly every negative outcome measured, what real purpose does frontline psychiatry serve other than to prevent psychiatric attrition via evacuation? And should this spur a reformulation of the military's paradigm of CSR/COSR?

Research on Frontline Psychiatry Relapse Rates

Jones and Wessely's (2003) seminal review of frontline psychiatry efficacy studies raised serious concerns about the integrity of military research on frontline psychiatry in regard to evaluating relapse rates of service members RTD after psychiatric breakdown, which can be an indicator of the harmful impact of the military's RTD policy. As reflected in Tables 2–4 and 5–8 from our previous review (Russell & Figley, 2016b), only a handful of frontline psychiatry studies over the past century include information on relapse. For example, Hanson and Ranson (1949) reported that 30% of the 18,255 soldiers were RTD as fully restored after being discharged from army hospitals, with 54% RTD to combat units but of limited service and 19% reassigned to backline units. Individuals not fully RTD, but reassigned to lesser duties, are most likely to be symptomatic and/or evidence some level of impairment, but not serious enough to warrant evacuation (e.g., Department of the Army, 2006).

A longitudinal survey of 11 US seventh army division psychiatrists in WWII indicated 77 to 84% of the soldiers remained resilient after 4 months of returning to full combat duty, decreasing to 56–89% at 7 months and reducing further to 32–36% after 12 months (Hanson & Ranson, 1949), thereby reinforcing a dose-response to war stress. Furthermore, Glass (1947) revealed that 54% of the personnel treated by frontline psychiatry were returned to some form of duty, but only 30% were restored to combat units, with two thirds relapsing by other routes (i.e., disease, injury or military

misconduct). In addition, Ludwig and Ranson's (1947) 3-month follow-up study showed 27% of soldiers RTD remained in combat units with acceptable performance levels, whereas 48% relapsed and 70% were no longer on active duty, leading the authors to conclude that acute impairment from war-related anxiety resulted in chronic loss of resistance to further combat stress (p. 61).

Classified Reports on Frontline Psychiatry

The durability of frontline psychiatry interventions to restore psychological equilibrium of soldiers returned to a combat environment was evaluated in several secret and classified military investigations from the WWII generation. For instance, a US army "restricted" report on frontline psychiatry outcomes concluded that "Of patients returned to duty, how many go back combat? We have no figures with which to answer the question, but can make a fairly good estimate—*it is less than 2.0 per cent*!" (underscore in original citation by Grinker & Spiegel, 1943; p. 255). Although Grinker and Spiegel (1943) initially predicted that 98% of the RTD combatants are to be fully restored, they found: "a pitiful few are sufficiently recovered to enable us with clear conscience to order them back to the front." They added that "over 70% can be rehabilitated for selective non-combatant service, in quiet sectors" (p. 235).

Additional classified studies by the British Army in WWII found similar low restoration rates, including a restricted report citing full recovery rates fluctuated between 16 and 32% (Sandiford, 1944a) and a secret report on the frontline treatment of battle exhaustion indicating a 43% relapse rate (Sandiford, 1944b). Furthermore, a 1945 military commission sent to France to investigate combat exhaustion programs determined that only 40% of the service personnel receiving PIE principles and RTD fully recovered, leading to a consensus that recoveries from acute breakdown were short lived (Bartemeier, Kubie, Menninger, Romano, & Whitehorn, 1946).

Considering the IDF studies on the long-term adverse impact of CSR, the above relapse findings are concerning. Specifically, serious health and safety implications exist for deployed personnel with even a mild level of impaired functioning in a war zone.

Taken together, during WWII, there was sufficient skepticism by senior military leaders over the veracity of RTD claims made by frontline psychiatry proponents resulting in several classified investigations that essentially confirmed suspicions of possible harm in RTD. The high-level inquiries did not examine long-term health effects of service members RTD, or evacuated, and appeared to be concerned primarily with discrediting mental health services rather than effecting change in policy. Nevertheless, after WWII, most Western militaries, including the USA, established a permanent frontline psychiatry doctrine toward conserving the fighting force

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by preventing mass psychiatric attrition (e.g., Glass, 1966b; Russell & Figley, 2016b). Subsequently, to our knowledge, the military has not conducted any further high-level or classified investigations, or even basic research, into the effects of its RTD policy.

Scientific Reviews on Causes and Risk Factors for Combat PTSD

Table 11 from Russell and Figley (2016b) contains systematic literature reviews and meta-analyses of etiologic predictors for combat-related PTSD. With rare exceptions (e.g., Brewin, Andrews, & Valentine, 2000), the research almost universally cites that the single greatest predictor and risk factor for war stress injury like PTSD is the level of combat exposure (e.g., Kulka et al., 1990; Xiu et al., 2015—Xue et al., 2015?). In other studies, the variable of peritraumatic dissociation is the best predictor, and it is an indirect measure of the level of exposure to traumatic stimuli (e.g., Ozer, Best, Lipsey, & Weis, 2003). Table 1 provides an overview of the type and frequency of exposure to potentially traumatic stressors during the current wars in Iraq and Afghanistan as well as possible warning signs of potential war stress injury in war zones (e.g., moral injury, traumatic grief, anger, sleep disturbance, etc.). A re-analysis of NVVRS data revealed even stronger evidence of a dosage effect from war stress exposure (Dohrenwend et al., 2013).

In sum, reasonable conclusion from etiologic studies in Russell and Figley's (2016a) review and of war zone stressors (Table 1) is that any pol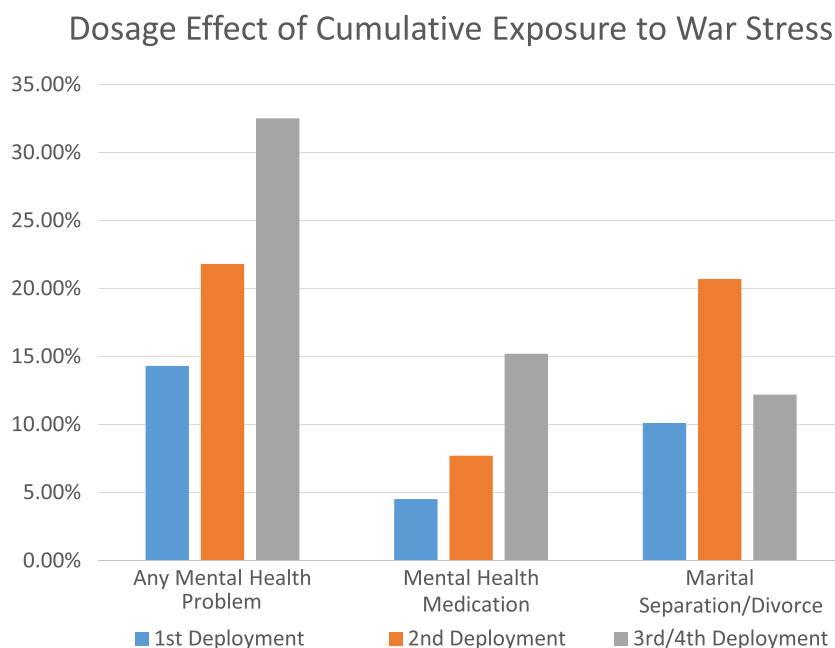icy compelling healthcare providers to keep up to 95% or more of individuals experiencing war stress injury and/or mental disorder in a high-stress environment, like a war zone, ensures repeated exposure to the most reliable predictor for chronic injury, such as PTSD. The military's frontline psychiatry doctrine that promotes RTD might be harmful in these regards.

Research on Harmful Effects of Deployment Length and Multiple Deployments

Beebe and Appel (1958) reported the highest risk for breakdown in the war zone is within the first 5–21 days of combat for newcomers, with seasoned veterans crashing on average of 80–90 combat days. Research on Israeli soldiers with previous history of CSR were 57% more likely to experience CSR in the next war, 67% if they participated in two wars, and 83% likelihood of experiencing CSR if participated in three wars (Solomon, 1993). The US Vietnam War veterans serving 13-month combat tours or longer were more likely to have PTSD than those who served 12 months or less (Kulka et al., 1990). In today's cohort, an army-wide study of 20,000 OEF/OIF soldiers found length of deployment was positively correlated with the severity of self-reported interpersonal violence perpetration in the year after deployment (Klostermann, Mignone, Kelley, Musson, & Bohall, 2012). Figure 1 offers a visual analysis of the characteristic dose-response effects on several mental health-related outcomes in regard to multiple deployments.

Adler, Huffman, Bliese, and Castro (2005) examined 3339 US military personnel deployed to the Balkan theater for

Fig. 1 Cumulative impact of multiple deployments on mental health

Dosage Effect of Cumulative Exposure to War Stress

NATO peacekeeping missions and found the length of deployment was significantly associated with greater severity of PTSD and depression symptoms in male service members. Kline et al., (2010) analyzed anonymous pre-deployment surveys from 2543 National Guard members deploying to Iraq in 2008. Twenty-five percent reported at least one previous OEF/OIF deployment and were three times more likely to screen positive for PTSD and major depression than first-time deployers, twice as likely to report chronic pain, and more than 90% were likely to score below population norms on physical health functioning.

A recent literature review of studies published between 2009 to 2014 found six studies that assessed the effects of multiple deployments on service members deployed to Iraq or Afghanistan, five of which reported the number of deployments significantly increase PTSD prevalence, with the lone outlier from a US study on healthcare professionals reporting two or more deployments reducing PTSD risk (Ramchand, Rudavsky, Grant, Tanielian, & Jayconx, 2015). For of 2086 US soldiers deployed to Iraq, research showed that the resilient factor of *benefit finding*, or the ability to ascribe meaning to enduring high stress of combat, is associated with the initial reduction in combat PTSD rates, but the protective element was found to significantly erode after 9 and 12 months into the deployment as well as subsequent deployments (Wood, Britt, Wright, Thomas, & Bliese, 2012).

Cumulative length of deployment of longer than 3 years was significantly associated with multiple physical symptoms, PTSD, and other mental illness in UK military personnel as well as problems at home, interpersonal conflict, and family problems (REF?). In 2003, the MoD implemented deployment policy changes (Army Harmony Guidelines) due largely to the class action (McGeorge et al., 2006) that strictly limits deployment length and cumulative exposure (Rona et al., 2014). In 2007, 22% of the UK deployed personnel had tour lengths longer than the recommended Harmony Guidelines threshold of 13 months or less in the past 3 years, resulting in significant adverse health outcomes. The authors concluded that there is a damaging effect of "overstretch," i.e., "related to the pace of military deployments" (Rona et al., 2014; p. 531).

Under recent pressure by the MoD to relax its deployment limitations, the UK researchers reviewed 131 studies on the effect of number and cumulative length of deployments between 2002 and 2014, identifying ten studies deemed suitable (Rona et al., 2014). Five studies reported significant associations of increased PTSD rates and number of deployments and two showed no association, with mixed findings on mood disorders, alcohol misuse, anxiety, and somatic symptoms (Rona et al., 2014). Inconsistency in findings was attributed to marked variation in defining and measuring combat exposure, health outcomes, and deployment roles, along with inadequate long-term data and probable ceiling effects from

stigma by relying upon non-anonymous self-reports (Rona et al., 2014).

Both the DoD and the MoD implement a frontline psychiatry policy of RTD and avoiding psychiatric evacuation. However, the US military's unrestricted deployment policy results in levels of combat exposure greatly exceeding the MoD's Harmony Guidelines and may be at least partly responsible for significantly higher prevalence of conditions like PTSD (e.g., 24%, per IOM (2014)) compared to 4% in the UK despite equivalent combat exposure (Fear et al., 2010). The combined impact of the US military's rigid RTD policy and overly lenient deployment policies places service members at high risk of exceeding their coping capacities, which can be injurious to their health (e.g., IOM, 2008) and the safety of others (e.g., Department of the Army, 2006). In addition, multiple deployments have been linked to significant increase in spouse and child mental health utilization (e.g., DOD-TF-MH, 2007; White, de Burgh, Fear, & Iversen, 2011).

Harm from Continued War Stress Exposure and Mental Health Diagnoses

Another major source of potential harm from frontline psychiatry is the exacerbating effects of repeated exposure to excessive and potentially traumatic stress on service members who are deployed with already known psychiatric diagnosis and/or develop a mental health condition during deployment and RTD in war zones (see Russell & Figley, 2016a). According to Russell and Figley (2016a), we indicated that individuals with previous history of trauma exposure and/or a current mental health diagnosis are at heightened risk of new onset PTSD or an exacerbation of their mental illness when exposed to chronic, severe stressors.

Research on Mental Health-Related Relapse

It has been demonstrated that individuals are at risk for relapse after experiencing initial psychological breakdown. For example, the IDF reported that soldiers diagnosed with a prior CSR were significantly more likely to be diagnosed with a subsequent CSR than soldiers without a history of breakdown (e.g., Solomon, 1993). Furthermore, studies on depression reveal a "kindling effect" whereby individuals are significantly at risk for subsequent episodes after the initial incident especially when exposed to severe life stressors (e.g., Kendler, Thornton, & Gardner, 2000). Similar kindling effects or neurosensitization are reported with PTSD diagnosis (e.g., Miller, 2000). In addition, level of recovery following psychiatric treatment has been associated with subsequent risk for relapse. For instance, 2 years after receiving treatment for major depression, 68% of the individuals who demonstrated only partial remission of their symptoms experienced relapse, compared to 15% with complete remission (Pintor, Gasto,

Navarro, Torres, & Fananas, 2003). The above findings are pertinent to our discussion because, per the Assistant Secretary of Defense for Health Affair's (2006) memorandum of *Policy Guidance for Deployment-Limiting Psychiatric Conditions*, deployed personnel with a known psychological condition as well as those exhibiting only partial remission after treatment of mental health conditions, such as PTSD, depression, and substance abuse, are subject to deployment to war zones despite the inherent risk.

Table 2 provides a snapshot of the prevalence of several mental health conditions of deployed US personnel to Iraq and Afghanistan, revealing that, during a 10-year period, between 10 to 20% of currently deployed American soldiers met diagnostic criteria for one of three mental health conditions measured. Military studies on the prevalence of mental health problems in deployed personnel have been conducted, revealing a high percentage of military personnel are deployed to war zones despite having a documented mental health condition and/or they develop a mental health condition in the war zone. For example, Crain, Larson, Highfill-McRoy, and Schmied (2011) reported that 3258 marines who deployed with a documented pre-existing mental health diagnosis were significantly more likely to develop a new onset mental health condition, such as PTSD, after deployment compared to marines deploying without a pre-existing condition. In addition, a retrospective screening of US soldiers for pre-deployment problems in deployed personnel seeking mental health services in the war zone examined a group of personnel who could be treated in theater ($N = 511$) compared to those requiring medical evaluation ($N = 123$) due to psychiatric deterioration (Weber & Weber, 2015). Findings revealed that 50.1% of those medically evacuated had a previously diagnosed mental health condition before they were deployed to the war zone (Weber & Weber, 2015). This is not to say that every service member with a history of trauma or pre-deployment psychiatric disorder will be unsuccessful in completing their deployment without major erosion in health and functioning. However, one might reasonably expect the long-range health effects of tens of thousands of deployed personnel enduring repeated exposure with a pre-deployment mental disorders are significantly more likely to be harmful rather than beneficial.

Prospective Studies on the Health Effects of Deployments

A recent series of prospective analyses on the impact of US deployment and combat stress exposure have been published, comparing large samples of military personnel on a host of physical and mental health-related outcomes prior to and after deployment to assess the unique impact of deployment (see Table 3). Consequently, in the table, exposure to combat stress significantly increases risk of new onset PTSD (e.g., LeardMann, Smith, Smith, Wells, & Ryan, 2009; Nash et al., 2014, Smith et al., 2008), depression (e.g., Wells et al., 2010),

disordered eating (e.g., Jacobson et al., 2009), traumatic brain injury (e.g., Stein et al., 2015), coronary heart disease (e.g., Crum-Cianflone et al., 2015), hypertension (e.g., Granado et al., 2009), respiratory illness (e.g., Smith et al., 2009), multiple physical health complaints (e.g., McCutchan et al., 2016), marital conflict and divorce (e.g., Wang et al., 2015), sleep disturbance (e.g., Seelig et al., 2010), and substance abuse (e.g., Jacobson et al., 2008). Therefore, a frontline psychiatry policy emphasizing RTD can reasonably be said to substantially aggravate the risk to the health and well-being of individuals suffering from one or more of the adverse conditions during or after deployment and are repeated exposing service members to RTD until their health status deteriorates into more serious disabling forms of injury.

Harmful Delays in Accessing Evidence-Based Treatment of Behavioral Health Diagnoses

Per the US army, "Once mental disorder symptoms emerge, the most effective strategy for ensuring recovery lies in prompt application of evidence-based treatments" (J-MHAT, 2011; p. 78). In 2004, the DVA and DoD published their joint practice guidelines for managing post-traumatic stress that included expert consensus recommendations for use of the identified evidence-based treatments (DVA/DoD, 2004). The practice guidelines were updated in 2010 and explicitly state the necessity for timely PTSD treatment: "The clinically significant symptoms cause significant distress or impairment in social, occupational, or other important areas of functioning. The symptoms last more than 3 months after exposure to trauma. Chronic PTSD is unlikely to improve without effective treatment" (DVA/DoD, 2010; p. 24). However, the military's RTD mandate, coupled with restricting psychiatric evacuations for treatment outside war zones, inevitably results in delays in accessing quality, effective treatment. What is the potential or foreseeable impact of these systemic barriers of such treatment delay?

An IDF study examined clinical characteristics between delayed and immediate CSR responders. In the study, 125 combat veterans sought help for war stress injury 8 years after the 1982 Lebanon War, and they were compared to 370 soldiers diagnosed with CSR treated 1 year after the war (Solomon, Singer, & Blumenfeld, 1995). Findings indicate that veterans from the delayed help-seeking group suffered a significantly higher rate (92 vs. 59%) and a greater intensity of PTSD as well as more intrusive symptoms and more general psychiatric symptoms than the immediate help-seeking group (Solomon et al., 1995).

DoD's Treatment Guidelines for Traumatic Stress Injuries

The DVA/DoD's (2010) post-traumatic stress treatment guidelines are recommended treatment for all acutely traumatized

Table 2 Frontline mental health burden as reported by the US Army MHAT surveys (2003–2013)

Source	Sample	ASD/PTSD	Any mental health (PTSD, depression, anxiety)	Concussive injury with loss of conscious	% suicidal ideation (SI) and number of completed suicide	Number (%) of personnel screened positive for MH and received COSC or BH in war zone	Number (%) taking psychiatric medications in war zone	Number (%) psychiatric evacuations
MHAT-I OIF (2003)	Army N = 750	15%	17%	No data	17% SI N = 24 complete	27% soldiers positive MH screen	No data	7%
MHAT-II OIF (2005)	Army N = no data	10%	13%	No data	No data	40% soldiers positive MH screen	No data	6%
MHAT-IV OIF (2006)	Army N = 1320; Marine N = 447	17% Army 14% Marine	20% Army 15% Marine	No data	18% SI N = 14 Army complete N = 2 Marine complete	42% soldiers positive MH screen 15% marines positive MH screen	No data	No data
MHAT-V OIF (2008)	Army N = 2195	16%	Deployment 1st: 11% 2nd: 19% 3rd: 27%	12%	15% SI N = 34 complete	No data	No data	No data
MHAT-VI OIF (2009)	Army N = 1260	11%	14%		12% SI N = 34 complete		3%—psych	No data
J-MHAT-7 OEF (2011)	Army N = 911	15%	20%	11%	13% SI N = 6 complete	No data	4%—psych 11%—sleep	No data
J-MHAT-7 OEF (2011)	Marine N = 335	17%	19%	12%	12% SI N = 6 complete	No data	2%—psych 7%—sleep	No data
J-MHAT-8 OEF (2013)	Army N = 1363; Army N = 994; Marine N = 369	11%	13%	4%	9% SI	14% overall	2%—psych 6%—sleep	No data
J-MHAT-9 OEF (2013)	Army N = 849	9%	10%	4%	9% SI	18% overall	3%—psych 11%—sleep	No data

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Table 3 Prospective research on the health effects of deployment and combat stress exposure in the US military personnel

Study	Sample	Outcome	Measures	Design	Major findings	Limitations
Boyko et al. (2010)	N = 44,754 the US military: deployed with combat exposure (CE) (N = 4813), deployed but no CE (N = 4908), non-deployed (N = 33,624)	New onset diabetes	Self-report of diabetes diagnoses after deployment; review of DoD medical dbase for new diagnosis of diabetes; PHQ; PCL-C; CE survey	Randomly selected sample baseline assessments before deployment and up to 3 years post-deployment	PTSD diagnosis significantly related to new onset diabetes; diabetes not significantly linked to deployment, with or without CE; two or more deployments and separation from the service significantly linked to diabetes	Bias in medical records of Reserves and National Guard who do not use DoD or VA healthcare; deployment group without CE had lower risk of diabetes; No objective assessment of diabetes
Crain et al. (2011)	N = 63,890 the US Marines on first combat deployment: N = 3258 with a pre-deployment mental health diagnosis; N = 60,632 control group with no mental health diagnosis	New onset mental health diagnoses	Medical record review; career outcome: demotion and discharge rates 6 months after deployment	Non-random pre-and 6 months post-deployment screening for mental health diagnosis	Pre-deployment diagnosis was significant risk factor for post-deployment diagnosis; 16% of pre-existing diagnosed with new onset vs. 5% control; 8% of pre-existing and 4% of control demoted in rank; 7% of preexisting and 3% of control discharged	Severity of combat exposure not assessed; no data on COSR or use frontline psychiatry; no data on pre-existing diagnoses; no standardized assessment of mental health status; no data on new onset diagnoses and career outcomes
Crum-Cianflone et al. (2015)	N = 35,465 the US military: deployed with CE (N = 12,280), deployed but no CE (N = 10,602), non-deployed (N = 37,143)	New onset coronary heart disease (CHD) and PTSD	DoD medical dbase records; PHQ; PCL-C; CAGE	Randomly selected sample baseline assessments before deployment and on average 5.6 years post-deployment	1.0% (N = 657) new onset CHD; Increase odds of new onset CHD in deployers with CE; CHD linked to PTSD prior to deployment only (n = 900—previously deployed)	Bias of non-deployers may have more health problems; report and recall bias; Ceiling effects of stigma and fears of career reprisal
Granado et al. (2009)	N = 36,061 the US military: deployed with CE (N = 4444: 1 CE event N = 586; >1 CE event N = 3858), deployed but no CE (N = 4385), non-deployed (N = 27,232)	New onset hypertension	SF-36V; physical and mental health component summary; behavioral outcomes (smoking, BMI, alcohol); DoD medical record review	Randomly selected sample baseline assessments before deployment and on average 2.7 years post-deployment	6.1% (N = 2345) deployers with multiple CE reported new onset hypertension; Non-deployers reported higher rate of new onset hypertension than deployers (with and without CE); Deployers with multiple CE highest risk for new onset	Bias of non-deployers may have more health problems; Report and recall bias; Selection bias against deployers with CE in remote areas and excluded from survey
Jacobson et al. (2008)						

Table 3 (continued)

Study	Sample	Outcome	Measures	Design	Major findings	Limitations
	N = 48,481 the US military: deployed with CE (N = 5531), deployed but no CE (N = 5561), non-deployed (N = 37,310)	New onset alcohol abuse, binge drinking, and heavy drinking	Frequency and intensity of weekly drinking; PHQ; CAGE; Holmes-Rahe; CE survey	Randomly selected sample baseline assessments before deployment and on average 1 year post-deployment	New onset drinking outcomes highest in active duty exposed to combat; combat exposure significantly associated with greater new onset alcohol problems in National Guard and reservists with combat exposure vs. those who did not deploy	Representativeness of sample; potential bias of less healthy non-deployed comparison group; recall bias of self-reported drinking; ceiling effect from stigma and fear of career reprisal
Jacobson et al. (2009)	N = 42,174 the US military: male N = 33,578 and female N = 12,641. Assigned three groups: deployed with CE, deployed but no CE, and non-deployed	New onset disordered eating (e.g., extreme weight gain or loss)	Holmes-Rahe; PCL-C; CAGE; PHQ	Randomly selected sample baseline assessments before deployment and on average 2.7 years post-deployment	New onset disordered eating highest in deployed and CE group; 5.2% women reported post-deployment disordered eating with 63% (N = 2174) new onset; 3.9% men reported post-deployment disordered eating with 67% (N = 3532) new onset	Potential unrepresentativeness of sample; non-specific measures of combat-related PTSD and CE; differentiation of new onset due to CE vs. episodic nature; Did not assess purging behaviors; Ceiling effects of stigma
LeardMann et al. (2009)	N = 5410 the US military deployed with CE without pre-deployment history of PTSD symptoms	New onset PTSD and pre-deployment physical health problems	SF-36V; PCL-C; CAGE	Randomly selected sample baseline assessments before deployment and 2–3 years post-deployment	58% of new onset PTSD ranked in lowest 15% on pre-deployment mental and physical health status; 7.3% (N = 395) new onset PTSD based on PCL criteria; 8.6% (N = 457) new onset PTSD diagnosed by physician	Potential unrepresentativeness of sample; report and recall bias; non-specific measures of combat-related PTSD and deployment trauma
McCutchan et al. (2016)	N = 75,934 the US military assessed three different time periods divided into deployed with CE, deployed without CE, and no deployment	New onset multiple physical symptoms (MPS)	PHQ-15; somatoform disorders subscale; PCL-C; CE	Randomly selected sample baseline assessments before deployment and post-deployment	Deployed personnel significantly more likely to report MPS at each time point compared to control; 10% of deployed with CE with new onset MPS at baseline, increased to 13% in 2007	Potential sampling bias; uncertainty of temporal relationship between deployment and MPS; unable to specify if MPS are medically unexplained

Table 3 (continued)

Study	Sample	Outcome	Measures	Design	Major findings	Limitations
Nash et al. (2014)	N = 867 the US Marines deployed to Afghanistan with high combat exposure; N = 673 deployed marines with low CE	New onset PTSD and depression and pre-existing symptoms	CAPS; PCL-M; BDI-II; BAI; WHODAS; LEC; CTQ; DRRI; brief COPE; PDEQ	Baseline assessment 1 month prior to deployment and 1, 5, and 8 months post-deployment	13% new onset PTSD; 8% reported high PTSD at pre-deployment-(pre–existing-69% met PTSD criteria pre-deploy, decreased to 50% at 8 months; 79% overall reported low-stable symptom trajectory across cycle	Non-random selection; males only; older Marines excluded more likely to have previous deployments; follow-up limited to 8 months
Seelig et al. (2010)	N = 41,225 the US military: follow-up survey during deployment (N = 1770); follow-up survey post-deployment (N = 9264, before follow-up survey of non-deployed (N = 30,190)	New onset sleep disturbance	Holms-Rahe; CE survey; PHQ; PCL-C; CAGE; sleep duration	Randomly selected sample baseline assessments before deployment and at least 2 weeks post-deployment	Deployed personnel significantly more likely to report sleep disturbance vs. non-deployers; CE significantly increased odds of sleep problems; deployed personnel with CE were 52 to 74% more likely to report sleep problems vs. no CE groups	Potential unrepresentativeness of sample; non-specific measures of combat-PTSD; ceiling effect of stigma and fear of career reprisal; no objective measure of sleep duration & quality
Smith et al. (2009)	N = 46,077 the US military: deployed (N = 10,753) compared to non-deployed (N = 35,324)	New onset respiratory illness	DoD medical dbase records; PHQ; PCL-C; CAGE	Randomly selected sample baseline assessments before deployment and on average 2.7 years post-deployment	Deployers (14%) had higher rate of respiratory symptoms vs. non-deployers (10%); no significant new onset illness associated with deployment	Bias of non-deployers may have more health problems; report and recall bias Ceiling effects of stigma and fears of career reprisal; CE not assessed
Smith et al. (2008)	N = 50,184 the US military: deployed (N = 11,942) compared to non-deployed (N = 38,176)	New onset PTSD	PCL-C; CE survey; smoking and drinking questions	Randomly selected sample baseline assessments before deployment and on average 2.7 years post-deployment	New onset PTSD using specific DSM-IV criteria and more sensitive criteria significantly associated with deployment and CE (7.6 and 8.7%) as compared to deployed without CE (1.4 and 2.1%), and non-deployers (2.3 and 3.0%) threefold increase in PTSD in deployers with CE; CE significantly linked to new onset PTSD	Potential unrepresentativeness of sample; non-specific measures of combat-related PTSD; ceiling effect of stigma and fear of career reprisal; report and recall bias

Table 3 (continued)

Study	Sample	Outcome	Measures	Design	Major findings	Limitations
Stein et al. (2015)	N = 4645 US soldiers deployed to Afghanistan	New onset TBI and PTSD and other mental health problems	CDIC-SC; PCL-C; Columbia Suicide Severity Rating Scale	Assessed 1–2 months pre-deployment, redeployment, and 3 and 9 months post-deployment	18% reported mild TBI; 1.2% > mild TBI; After adjustment to pre-deployment risk factors, deployment acquired TBI significantly increases risk of PTSD, generalized anxiety, depression at 9 months.; elevated suicide risk at 3 months	Bias of self-report on clinical outcomes; lack objective measures of TBI; moderate and severe TBI not tracked because most likely hospitalized; non-anonymous surveys; ceiling effect of stigma and fear of career reprisal
Wang et al. (2015)	N = 29,314 married US military at time of deployment compared recently divorced (N = 1545) and stayed married (N = 27,769)	New onset marital divorce and physical and mental health problems	Self-report of marital status; PCL-C; CAGE; PHQ; Physical component summary; mental component summary	Randomly selected sample baseline assessments before deployment and on average 3 years post-deployment	5.3% (N = 1545) military personnel divorced compared to non-divorce (n = 27,769); divorce and all outcomes (physical, mental, behavioral) all significantly linked to CE; divorce associated with being female, young, enlisted, active duty, low education, reports of poor physical and mental health	Potential unrepresentativeness of sample; non-specific measures of combat-related PTSD; no data on length of marriage or children; no measure of marital satisfaction at pre-deployment; ceiling effect of stigma; report and recall bias
Wells et al. (2010)	N = 40,219 the US military: deployed with CE (N = 4719), deployed but no CE (N = 4831), non-deployed (N = 30,669)	New onset depression	PHQ; SF-36V; PCL-C; CAGE; CE survey	Randomly selected sample baseline assessments before deployment and on average 349 days post-deployment	Deployed men and women with CE had significant increase in new onset depression 5.7 and 15.7%, respectively) compared to non-deployers (3.9 and 7.7%) and the deployed but no CE group (2.3 and 5.9%)	Potential unrepresentativeness of sample; non-specific measures of combat-related PTSD; limited CE questions Ceiling effect of stigma and fear of career reprisal

BAI Beck Anxiety Inventory, *BDI-II* Beck Depression Inventory—Second Edition, *CAPS* Clinician Administered PTSD Scale, *CIDI-SC* Composite International Diagnostic Interview Screening Subscales, *CTQ* Childhood Trauma Questionnaire, *DRRI* Deployment Risk and Resilience Inventory, *Holmes-Rahe* Holmes-Rahe Social Adjustment Scale, *LEC* Life Events Checklist, *PCL-C* PTSD Checklist—Civilian Version, *PDEQ* Peritraumatic Dissociative Experiences Questionnaire, *PHQ* Patient Health Questionnaire, *SF-36V* Medical Outcomes Study Short Form 36-item Health Survey for Veterans, *WHODAS* World Health Organization Disability Assessment Scale-II

service members who meet the criteria for diagnosis of acute stress disorder (ASD), as well as for those with significant levels of acute stress symptoms that continue for more than 2 weeks after the index trauma, as well as for those who are "incapacitated" by their acute physical or psychological symptoms (p. 45). Although the procedure of "psychological first aid" is listed, the guidelines refer to "insufficient support" empirically for it. Psychological first aid avoids psychiatric labeling or treatment and essentially consists of non-psychotherapeutic interventions akin to frontline psychiatry/ COSC (e.g., DVA/DoD, , 2010).

That said, specific treatment recommendations by DVA/ DoD (2010) include

> Psychotherapy for ASD: "a. Consider early brief intervention (4 to 5 sessions) of cognitive-based therapy (CBT) that includes exposure-based therapy, alone or combined with a component of cognitive re-structuring therapy for patients with significant early symptom levels, especially those meeting diagnostic criteria for ASD" (p. 103).
> Pharmacotherapy: "There is no evidence to support a recommendation for use of a pharmacological agent to prevent the development of ASD or PTSD" (p. 103).
> Psychotherapy for PTSD: "Strongly recommend that patients diagnosed with PTSD receive one of the evidence-based trauma-focused psychotherapies" (p. 117) such as: "exposure based therapy (e.g., Prolonged Exposure), cognitive therapy (e.g., Cognitive Processing Therapy) or Eye Movement Desensitization and Reprocessing (EMDR)" (p. 117).

Psychotherapy Research in War Zones

The military's 100-year-old frontline psychiatry principle of simplicity requires clinicians in war zones to refrain from using traditional psychiatric labeling and treatments for deployed personnel exhibiting CSR/COSR to avoid harm from stigma and evacuations (e.g., Department of the Army, 2006). "Factors that emphasize percepts of individual or collective vulnerability increase the probability for psychiatric breakdown" (Jones, 1995b; p. 28). However, as mentioned earlier, the DoD's deployment policy ensures thousands of deployed personnel already diagnosed with psychiatric conditions are sent to war zones while others are diagnosed with psychiatric conditions in war zones (e.g., see Table 2; Russell & Figley, 2016b). Consequently, it is essential for deployed personnel to have ready access to high quality evidence-based treatments, as recommended by DVA/DoD (2010).

Research on psychiatric treatment in war zones has been reviewed (see Russell & Figley, 2016b). A handful of multiple case studies reported successful war zone treatment using evidence-based psychotherapies for deployed US service members diagnosed with PTSD, as recommended by the DoD's clinical practice guidelines (DVA/DoD, 2004, 2010), such as prolonged exposure (Cigrang, Peterson, & Schobitz, 2005) and virtual reality exposure therapy (McLay, McBrien, Wiederhold, and Wiederhold, 2010). However, the review uncovered a disturbing trend whereby treatment success was primarily defined as short-term symptom reduction and RTD, with no research looking at long-term outcomes of those RTD (e.g., Russell & Figley, 2016b). For instance, in regard to the case studies, both studies recorded 100% RTD coinciding with substantial reduction in symptoms. However, no clinical follow-up beyond the war zone was assessed (Cigrang et al., 2005; McLay et al., 2010).

The robust trend of reporting RTD rates while ignoring long-term clinical outcomes extends to larger military treatment record analyses (see Russell & Figley, 2016b). For instance, Hung (2008) analyzed treatment records of 49,670 deployed US personnel receiving frontline psychiatry, including 8622 personnel treated for psychiatric disorders such as depression disorders ($N = 1389$), anxiety disorders ($N = 928$), and ASD/PTSD ($N = 720$) in the war zone. The only treatment outcome reported was that 99% were RTD within the war zone (Hung, 2008). There was no information on type of treatment or whether treatments were in accordance to the DVA/DoD's (2004, 2010) clinical practice guidelines or post-deployment adjustment (Hung, 2008). In addition, another US military study examined frontline mental health provider treatment recommendations for 1136 deployed personnel seeking psychiatric treatment in the war zone (Schmitz et al., 2012). Psychotherapy is a strongly recommended treatment for ASD/PTSD diagnosis (e.g., DVA/DoD, 2004, 2010). However, while 63% of the military patients with a PTSD diagnosis were prescribed medications, only 40% had recommendations for psychotherapy or counseling (Schmitz et al., 2012), which is in contradiction to the DoD's practice guidelines (DVA/DoD, 2004, 2010). Moreover, the medical records of approximately 21% of the deployers diagnosed with a psychiatric disorder ($N = 245$) did not contain any treatment plans other than referral to other providers in war zones (Schmitz et al., 2012). The authors concluded that "Further examination of post-deployment health outcomes may help to facilitate the development of more effective acute intervention strategies in theater" (Schmitz et al., 2012; p. 388). However, such outcome research has yet to be undertaken by the DoD (see Table 5 in Russell & Figley, 2016b). In fact, the primary outcome reported by Schmitz et al. (2012), as in nearly all previous war zone treatment research (e.g., Hung, 2008; see Russell & Figley, 2016b), is high RTD and low psychiatric evacuation rates.

In sum, there is overwhelming evidence that most deployed personnel diagnosed with a psychiatric condition either before and/or during deployment do not receive optimal treatment in accordance with the military's own clinical practice guidelines (e.g., DVA/DoD, 2010; Schmitz et al., 2012; Russell & Figley,

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2016b). Reasons for this apparent oversight have been offered: "Furthermore, the therapy recommendations were mainly for supportive counseling instead of a full course of trauma-focused psychotherapy due to the inhospitable environment and access-to-care" (Schmitz et al., 2012; p. 386). Although this assertion appears contradicted by several multiple case studies employing evidence-based psychotherapies within war zones (e.g., McLay et al., 2010), it does raise critical, yet completely unexplored clinical and ethical questions regarding timing of trauma-focused treatment. Unfortunately, a century of frontline psychiatry has not even scratched the surface in advancing our knowledge in this vital area (e.g., DVA/DoD, 2010). Until thoroughly researched, we can only deduce that, due to the US military's strict RTD policy, many mental health-seeking deployed personnel do not have access to the top recommended evidence-based treatments within war zones and that non-mental health-seeking deployed personnel must endure extended delays to access optimal mental healthcare until they return from deployments. Therefore, we can only assume that military personnel and their families are more likely harmed than helped by the denial and excessive delay in accessing recommended treatments.

Summary of the Evidentiary Review that Frontline Psychiatry Is Harmful

As the military posits, it is a given that many deployed personnel experiencing CSR/COSR and RTD after frontline psychiatry do not experience negative long-term effects and may benefit from their experiences. What percentage of benefiters is unclear, as is why some may benefit from RTD and others are harmed? The military's studies on dosage effect from war stress, including old sergeant's syndromes, strongly dispute any assertion that those who do not benefit and are harmed by the military's RTD policy are somehow inherently defective. We concur with WWII-era conclusions by the National Research Council on limits in human tolerance to war stress exposure (Beebe & Appel, 1958; p. 168). Unfortunately, the state of research on the military's frontline psychiatry/COSC programs prohibits a definitive answer to basic questions about whether the military's frontline policies generally help or harm veterans.

Throughout out review, we find that war fighters most in need of mental health services were least likely to seek help and did not want to be forced to do so out of concern for appearing weak or fear of career reprisal. The double side of malingering (willful deception of illness (or lack of illness)) behavior is an important challenge since it delays the health and mental health needs of war fighters. This paradox deserves more attention from military and non-military behavioral health researchers because accurately detecting those in need can save lives.

Is Frontline Psychiatry Helpful or Harmful to Military Populations?

All things considered, after the most extensive review of the literature ever conducted on frontline psychiatry, we are left with the tentative conclusion, based on the preponderance of the evidence, that the military's frontline psychiatry doctrine is substantially more likely to harm than benefit service members and their families. Moreover, in our previous review, we found insufficient evidence supporting military claims of individual health benefits from its frontline mental health policies (see Russell & Figley, 2016b).

Moving Forward: Brief Discussion of Future Implications

Clearly, preventing psychiatric attrition in war zones helps the military accomplish its mission to fight and win wars. To this end, frontline psychiatry has been quite effective. Yet, at what cost to service members and their families? At a minimum, the US military's messaging around frontline psychiatry/COSC extolling the individual health benefits to deployed personnel and their families is not evidence supported. Potential military service member volunteers should be apprised of the spectrum of war stress injury and its potential lifelong negative impact. This may deter young Americans from joining the military, like emerging trends in youth avoiding traumatic brain injury from playing football (Fainaru & Fainaru-Wada, 2013). Therefore, improving psychiatric care for service members is our best option.

Plausible Alternative Solutions

What is a realistic alternative to the current frontline psychiatry doctrine? We do not pretend to have all the answers. We have already seen the negative impact of an overly lenient psychiatric evacuation policy during wartime. For example, before reconstituting its frontline psychiatry programs at the outset of the Korean War, US army psychiatric evacuation rates were 100% and, at the outset of WWII, US psychiatric attrition outnumbered the number of new accessions (e.g., Glass, 1966a). In both scenarios, an effort was made to discharge expeditiously war-stressed soldiers from the military, typically without treatment, thus greatly intensifying stigma (e.g., Glass, 1966b). In today's situation, evacuation of every service member diagnosed with CSR, war stress injury, and/or mental disorder would rapidly deplete the already shrinking all-volunteer military, thereby possibly forcing the Congress to reinstitute an unpopular draft or compulsory public service. As a better strategy to the problem, if properly treated, many personnel would want to be aptly reconditioned and RTD. This strategy

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presents a potential win-win for individuals and the military.

US politicians generally avoid making difficult choices related to military mental health care (see Russell, Zinn, & Figley, 2016). However, examination of what is occurring in other countries is informative. Every Western military incorporates a frontline psychiatry policy, including the IDF and MoD, which has the lowest rates of PTSD of Western military powers (e.g., Fear et al., 2010). As an intermediate action, our recommended corrective actions are three-fold: (a) First and foremost, conduct comprehensive investigations by external, impartial agency(ies) to provide more definitive answers to the basic questions we raised and offer better informed solutions; (b) the US military should adopt the UK's Harmony Guidelines to strictly limit deployment length and cumulative exposure in the war zone; and (c) the US military should return to WWII-era mandatory treatment policy, similar to the UK and IDF, emphasizing definitive treatment and reconditioning versus military discharge (see Russell, Zinn, & Figley, 2016). We have outlined other related solutions and courses of actions, including a possible class action against the DoD to compel policy changes (Russell, Butkus, & Figley, 2016a, b; Russell, Zinn, & Figley, 2016).

In concluding our three-article series, the DoD needs to confront the dilemma in frontline psychiatry that psychiatric casualties appear to exceed combined totals of personnel medically wounded and killed in action. A middle ground certainly exists to accomplish the military's two missions (fight wars and protect the force), but finding the solution requires the DoD and government leaders to exert due diligence and start conducting the required rigorous research. Or, as the DoD Task Force on Mental health (2007) put it, "Clearly, the challenges are enormous and the consequences of non-performance are significant" (p. 5).

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest..

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