From Combat to Civilian Life: An Integrative Review of Mental Health Challenges and Recovery Pathways for Warzone Veterans

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Abstract—**Background: The mental health of military veterans returning from warzones represents a critical public health concern with profound individual and societal implications. Understanding the complex interplay of psychological, physical, and social factors affecting this population is essential for developing effective interventions and support systems.**
Objective: This integrative review synthesizes current evidence on mental health challenges faced by warzone veterans, examining prevalence rates, contributing factors, clinical presentations, and recovery pathways across the deployment cycle and reintegration process.
Methods: A systematic literature search was conducted across multiple databases including MEDLINE, PubMed, LILACS, SciELO, PsycINFO, PsycArticles, CINAHL, Cochrane Central Register of Controlled Trials, SocINDEX, and Academic Search Premier. The search strategy employed the PICo framework (Population, Interest, Context) and utilized Medical Subject Headings including "war disorders," "veterans," "post-traumatic stress disorder," "combat disorders," "psychological warfare," and "warfare." The review focused on peer-reviewed publications examining mental health outcomes in combat-deployed military personnel and veterans from 2001 through 2025. Sixty-two references meeting inclusion criteria were synthesized following established integrative review methodology.
Results: Prevalence rates of PTSD among veterans range from 9% to 31% depending on functional impairment criteria, with substantial comorbidity with depression (up to 70% co-occurrence), anxiety disorders, substance use disorders, and chronic pain. The triad of pain, PTSD, and depression demonstrates complex bidirectional relationships requiring integrated treatment approaches. Adding to this complexity, traumatic brain injury, particularly blast-related, presents unique symptom presentations and treatment challenges, with individuals with TBI having twice the likelihood of developing depressive symptoms compared to those without TBI. Reintegration difficulties encompass psychological adaptation, sociocultural transition challenges, identity reconstruction, and moral injury. Emerging evidence highlights the protective roles of resilience, social support, and positive spiritual coping, while identifying moral injury as a distinct clinical concern requiring targeted intervention.
Conclusions: Warzone veterans experience multifaceted mental health challenges requiring comprehensive, culturally competent, and trauma-informed care approaches. Future research priorities include longitudinal studies examining reintegration trajectories, comparative effectiveness trials of interventions, investigation of protective factors, and implementation research to translate evidence into practice. The findings support development of comprehensive care models addressing the full spectrum of veteran mental health needs across the lifespan.

Index Terms—**veterans, post-traumatic stress disorder, combat deployment, mental health, reintegration, integrative review, moral injury, resilience, traumatic brain injury, women veterans**

I. Introduction

The experience of war represents one of the most profound human stressors, leaving indelible marks on those who serve in combat zones. Veterans returning from warzones carry not only the physical wounds

of conflict but also complex psychological burdens that affect their mental health, relationships, and ability to reintegrate into civilian life. The contemporary context of military operations in Iraq and Afghanistan, during which more than 2.8 million service members served in combat operations over two decades, has brought renewed attention to the mental health sequelae of combat exposure. Research has documented substantial rates of post-traumatic stress disorder (PTSD), depression, substance use disorders, traumatic brain injury, and associated functional impairment in this population.

To fully appreciate these clinical outcomes, it is first necessary to understand the fundamental nature of warfare itself. War is understood as a moment of struggle and violence, characterized by physical confrontation between opposing sides, representing a continuous and large-scale act of force that seeks the subjugation of opponents. This process creates instability in the conflict zone, making it prone to developing a range of sequelae within the geographic and population landscape, which can at times be irreversible. War triggers stressful situations within a complexity where, historically, the human being inserted into the conflict scenario becomes a passive actor within the theater of emotions, pushed to the limits of their emotional capacity. The involvement extends from military personnel to civilian populations, who, when confronted with extreme situations and atrocities, are led toward illness.

Beyond this immediate psychological toll on individuals, however, the importance of understanding veteran mental health extends to broader societal implications. Veterans constitute a population with distinct cultural experiences, exposure patterns, and healthcare needs that differ substantially from civilian populations. The transition from military to civilian life involves fundamental shifts in identity, social networks, daily routines, and sense of purpose, a process that can be particularly challenging for those who have experienced combat. The military-to-civilian transition has been conceptualized as a transition between cultures, with veterans with warzone deployment histories demonstrating particular difficulty with the sociocultural and psychological adaptation aspects of this process.

Compounding these cultural and social adaptation difficulties is a more recently identified psychological phenomenon. The concept of moral injury has emerged as a distinct clinical concern relevant to veteran reintegration. A growing body of evidence shows that veterans may experience identity confusion, social isolation, and moral pain during veteran reintegration. These issues might compound with exposure to traumatic events, leading to the development of moral injury. Moral injury and veteran reintegration appear to have a dynamic relationship that significantly impacts veterans' experiences of moral emotions, their ability to trust others, disclose potentially morally injurious experiences, and make meaning of their service. Mental health practitioners may need to be especially attuned to and assess for moral injury in reintegrating veterans, particularly as onset of moral injury may occur during reintegration as veterans reflect on their military experiences and come to new moral conclusions.

While the foregoing challenges are common across genders, it is critical to acknowledge that the veteran population is not monolithic. The more than 2 million women U.S. veterans are the fastest-growing military population. While research into women veterans has traditionally lagged, more recently studies have begun to focus on their needs and the impacts of combat and service on women. These studies have found that women in combat roles had higher levels of depression, PTSD, dissociation, and overall poorer health compared with civilians and noncombat women military personnel. Previous research had found that women veterans had higher rates of lifetime and past-year PTSD (13.4%) compared with female civilians (8.0%), male veterans (7.7%), and male civilians (3.4%). A 2020 U.S. Department of Veterans Affairs study of 4,928,638 men and 448,455 women similarly found that women had nearly twice the rates of depression and anxiety compared with men.

Given this complex and multifaceted landscape of risk, this integrative review addresses a critical gap in the literature by synthesizing evidence across multiple domains of veteran mental health. While previous reviews have examined specific conditions such as PTSD or treatment approaches, fewer have integrated findings across the full spectrum of mental health challenges, contributing factors, and recovery pathways facing

warzone veterans. The objective of this review is to critically examine and synthesize current knowledge regarding mental health outcomes in combat-deployed veterans, identify key risk and protective factors, and evaluate the evidence base for interventions supporting veteran mental health and community reintegration.

The significance of this review lies in its potential to inform clinical practice, guide policy development, and identify priorities for future research. Given the ongoing nature of military conflicts and the long-term needs of veteran populations, evidence syntheses that integrate findings across disciplines are essential for advancing care for those who have served.

II. Methodology

2.1 Review Design

This study employed an integrative review methodology, which is recognized as a valuable approach for synthesizing diverse evidence types and informing evidence-based practice in healthcare. More specifically, the integrative review method allows for inclusion of both empirical and theoretical literature, thereby enabling a comprehensive understanding of complex phenomena such as veteran mental health. To ensure methodological rigor, the framework followed established steps encompassing problem identification, literature search, data evaluation, data analysis, and presentation of findings.

This methodology is particularly appropriate for examining veteran mental health, largely because of the heterogeneous nature of the evidence base. In particular, this body of literature includes quantitative studies of prevalence and treatment effectiveness, qualitative investigations of lived experiences, and theoretical work on mechanisms and recovery pathways. Consequently, an integrative approach is well suited to capturing the full scope of this multifaceted field.

2.2 Research Questions

Building on this methodological foundation, the following research questions guided this integrative review:

1. What are the prevalence, severity, and clinical presentations of mental health conditions among veterans who have deployed to warzones?
2. What factors contribute to the development and persistence of mental health problems in this population, and how do these factors interact across the deployment cycle?
3. What is the nature of the relationships between combat exposure, physical injury, pain, and psychological symptoms?
4. What interventions and support mechanisms demonstrate effectiveness in promoting mental health and successful reintegration among warzone veterans?
5. What protective factors facilitate resilience and recovery in this population?

2.3 Search Strategy

To address these research questions systematically, a comprehensive literature search was conducted across multiple electronic databases to identify relevant publications. To structure this process, the search strategy was developed using the PICo framework (Population, Interest, Context), which guided descriptor selection and question formulation. Specifically, the databases searched included MEDLINE, PubMed, LILACS, SciELO, PsycINFO, PsycArticles, CINAHL, Cochrane Central Register of Controlled Trials, SocINDEX, and Academic Search Premier.

For the indexing phase, Medical Subject Headings (MeSH) and DeCS (Descriptors in Health Sciences) terms were employed, including "war disorders," "veterans," "post-traumatic stress disorder," "combat disorders," "psychological warfare," and "warfare." In addition to these controlled vocabulary terms, free-text searches were conducted using combinations of terms related to veteran status, combat deployment, mental health conditions, pain, traumatic brain injury, moral injury, resilience, reintegration, and recovery outcomes.

Regarding the temporal scope, the search was conducted between June and August 2024, with a focus on publications from 2001 through 2025. This timeframe was deliberately chosen to capture research relevant to contemporary conflicts, including Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and Operation New Dawn (OND).

2.4 Inclusion and Exclusion Criteria

Following the search phase, studies were included if they met the following criteria:

1. **Population:** Military veterans or active-duty service members who had deployed to combat zones, with specific attention to the OEF, OIF, and OND eras.
2. **Focus:** Mental health outcomes, including PTSD, depression, anxiety, substance use disorders, suicidal ideation, and related conditions; risk and protective factors; reintegration experiences; and intervention effectiveness.
3. **Study design:** Original research (quantitative, qualitative, mixed-methods), systematic reviews, integrative reviews, meta-analyses, and theoretical papers.
4. **Publication timeframe:** 2001–2025.
5. **Language:** English, Spanish, and Portuguese publications.
6. **Publication type:** Peer-reviewed journal articles, government reports, and dissertations.

Conversely, exclusion criteria included studies focused exclusively on civilian populations, non-combat-related trauma, publications not addressing mental health outcomes, and opinion pieces without empirical or theoretical grounding. Thus, these criteria ensured that the review remained tightly focused on the veteran combat-deployed population while maintaining methodological inclusivity across study designs.

2.5 Data Extraction and Synthesis

Once the final set of studies was determined, data extraction was conducted using a standardized template developed to capture study characteristics, including aims, population, sample size, combat exposure assessment, mental health measures, key findings, and identified gaps. Subsequently, studies were grouped thematically to identify patterns across populations, outcomes, and research frameworks. Given the heterogeneity of study designs and outcome measures, a narrative synthesis approach was employed, organizing findings into thematic categories that reflected the major domains of veteran mental health.

To ensure a rigorous synthesis process, the analysis involved iterative reading and re-reading of included studies, identification of recurrent themes, and organization of findings into coherent categories. In keeping with the integrative review methodology, findings were then compared across studies to identify consistencies, contradictions, and gaps in the evidence base. This comparative step was essential, as it allowed for a nuanced interpretation of the available data.

2.6 Quality Assessment

In parallel with data synthesis, quality assessment was performed using critical appraisal tools appropriate to each study design. For quantitative studies, assessment focused on methodological rigor, sample representativeness, validity and reliability of outcome measures, and adequacy of statistical analyses. For qualitative studies, criteria included credibility, transferability, dependability, and confirmability. Meanwhile, systematic reviews and meta-analyses were assessed for comprehensiveness of search strategy, transparency of methods, and appropriateness of synthesis approach.

After appraising individual studies, the overall body of evidence was evaluated for consistency, coherence, and relevance to the research questions. It is important to note, however, that studies were not excluded based on quality assessment alone; rather, quality findings were considered in the interpretation and presentation of results. In this way, the review maintains both transparency and comprehensiveness, ensuring that the final synthesis reflects the full range of available evidence while acknowledging methodological limitations.

III. Results

The search identified 62 references meeting inclusion criteria. The synthesized findings are organized into six thematic categories reflecting the major domains of veteran mental health: (1) prevalence and clinical presentations of mental health conditions; (2) comorbidity and the pain-PTSD-depression triad; (3) traumatic brain injury and mental health outcomes; (4) reintegration challenges, identity transitions, and moral injury; (5) barriers to care and health disparities; and (6) protective factors, resilience, and recovery pathways.

3.1 Prevalence and Clinical Presentations of Mental Health Conditions

Post-traumatic stress disorder constitutes the most extensively studied mental health condition among warzone veterans, with prevalence estimates varying substantially across populations, assessment methods, and functional impairment criteria. For instance, Giordano and colleagues found that prevalence rates of PTSD and depression after returning from combat range from 9% to 31% depending on the level of functional impairment reported. Moreover, a meta-analysis of studies involving 4,945,897 veterans estimated the overall prevalence of PTSD at 23%.

Prevalence estimates for specific conflicts reveal notable variation. Among Vietnam theater veterans aged at least 60 years, a lifetime prevalence of 16.9% was documented, while a survey of women Vietnam veterans reported a 20.1% lifetime prevalence of PTSD. More recent estimates for post-9/11 combat veterans range from 14% to 16% in some studies to as high as 65-70% in others, reflecting differences in sample characteristics, assessment approaches, and diagnostic criteria. Data from over 3,000 veterans obtained through the National Health and Resilience in Veteran Study indicate a probable prevalence of PTSD around 16%. Furthermore, post-9/11 combat veterans show substantial comorbidity, with depression rates of 43-48% and anxiety disorders of 12-13%.

The clinical presentation of combat-related PTSD encompasses multiple symptom domains including re-experiencing of traumatic events, avoidance of trauma-related stimuli, affective numbing, and hyperarousal. Secondary symptoms frequently include other psychiatric conditions, depression, anxiety, and panic attacks, as well as somatic manifestations such as generalized pain, fatigue, insomnia, migraines, tachycardia, sexual dysfunction, and substance abuse. Consequently, these latent symptoms diminish quality of life and complicate recovery processes.

Depression represents one of the most prevalent and challenging mental health conditions affecting veterans, with the VA reporting that nearly 1 million veterans served by VHA have a diagnosis of major depressive disorder and more than 1.1 million have any depression diagnosis. In units deployed to Iraq or Afghanistan, military medical facilities reported a nearly 25% increase in diagnosed depression cases, rising from a baseline of 11.4% to 15%. Importantly, depression in veterans develops in connection with other mental health conditions, particularly PTSD and traumatic brain injury. Up to 50% of individuals with PTSD also experience depression, and nearly two in five individuals who suffer traumatic brain injury develop symptoms of depression severe enough to interfere with daily life.

Substance use disorders represent another significant concern, with high comorbidity documented between PTSD, depression, and alcohol misuse in post-deployment populations. Veterans are more likely to smoke, drink heavily, engage in substance use, exercise less, and have limited activities than civilians. As a result, these patterns of substance use compound mental health challenges and complicate treatment.
Suicidal ideation and behaviors constitute a particularly urgent concern. Evidence indicates that suicide rates among U.S. active-duty soldiers and veterans have surpassed rates among civilians. In a related development, post-service identity disruption has been identified as a contextual vulnerability associated with suicide risk among military veterans. Military service is conceptualized as a highly structured institutional identity system characterized by role clarity, cohesion, mission orientation, and reinforced contribution. Consequently, separation from this system may involve the loss of stable identity anchors, social belonging, and recognized purpose, particularly when civilian reintegration does not provide parallel structures of meaning and role continuity.

3.2 Comorbidity and the Pain-PTSD-Depression Triad

A substantial body of evidence documents the complex interrelationships between combat injury, pain, PTSD, and depression. Giordano and colleagues' integrative review specifically examined these relationships, finding that greater injury and pain severity pose risks for developing PTSD following combat injury, while early symptom management may lessen this risk. This finding has significant implications for clinical practice, suggesting that aggressive pain management in the acute post-injury period may have preventive mental health benefits.

The relationship between blast exposure and subsequent symptom presentation deserves particular attention. Service members injured via blast demonstrated a broader spectrum of physical injuries, higher levels of admission and discharge opioid analgesic use, reduced improvement in pain intensity following treatment, and higher rates of PTSD and other psychiatric diagnoses than those injured via other mechanisms. Notably, the historical concept of "shell shock" from World War I finds contemporary resonance in these findings, with blast-related injuries appearing to carry unique psychological sequelae.

Particular injury types show differential associations with mental health outcomes. Giordano and colleagues noted that service members with blunt or combination injuries merit particular attention when screening for PTSD. Research examining veterans with combat injuries found that self-reported mental health symptoms were significantly higher for both minor and moderate-severe battle injury compared to non-battle injury and previous population estimates. Importantly, the severity of self-reported somatic symptoms, rather than clinician-determined injury severity, predicted the development of probable PTSD and major depressive disorder in wounded service members. This finding underscores the importance of patient-reported outcomes in clinical assessment.

The relationship between PTSD and major depressive disorder (MDD) in combat veterans has been examined through the lens of deployment cycle adversity and social support. In a study of 223 U.S. veterans with primary combat-related PTSD, 69.5% had current comorbid MDD. After adjustment for sex, a linear regression model indicated that more concerns about family disruptions during deployment, more harassment during deployment, and lower ratings of postdeployment social support were associated with more severe self-reported depression symptoms. Taken together, these findings suggest that interventions enhancing social support and fostering successful postdeployment reintegration are critical for reducing the mental health burden associated with this highly prevalent comorbidity.

Several hypotheses have been proposed to explain the high comorbidity between PTSD and MDD: (a) PTSD may incur causal risk for MDD; (b) PTSD and MDD are independent but interacting conditions that occur after trauma exposure due to common risk and vulnerability factors; and/or (c) comorbidity is a consequence of symptom overlap. Evidence to date has been most compelling for the hypotheses concerning causal and interacting conditions. This understanding has important implications for intervention design, suggesting that approaches addressing shared risk factors may be particularly valuable.

3.3 Traumatic Brain Injury and Mental Health Outcomes

Traumatic brain injury (TBI), particularly mild TBI sustained in combat, represents a significant risk factor for adverse mental health outcomes. The signature injury of the conflicts in Iraq and Afghanistan, TBI affected a third of veterans who required medical treatment and 20% of those deployed. The Defense and Veterans Brain Injury Center reported 414,000 TBIs among U.S. service members who served between 2000 and 2019, and VA records indicate more than 185,000 veterans who use the VA for their health care have had at least one TBI diagnosis.

The relationship between TBI and mental health conditions is complex and multifaceted. Individuals with TBI have twice the likelihood of developing depressive symptoms compared to those without TBI. Moreover, nearly two in five individuals who suffer TBI develop symptoms of depression severe enough to interfere

with daily life. The relationship between TBI and PTSD is particularly complex, with individuals with TBI potentially having impaired memory for traumatic events, which may affect PTSD symptom presentation. Conversely, the experience of injury itself constitutes a traumatic event that can trigger PTSD. This complexity presents challenges for differential diagnosis and treatment planning.

Greer and colleagues conducted a systematic review examining the prevalence, severity, and symptom persistence of PTSD, depression, substance abuse, suicidal ideation, and anxiety disorders in service members and veterans with and without combat-deployed mild TBI. Their review found that TBI is associated with elevated rates of multiple mental health conditions, with implications for clinical assessment and treatment planning. However, the effectiveness of interventions in populations with comorbid TBI and mental health conditions remains an area requiring further investigation.

Research has examined genetic and peripheral biomarkers of comorbid PTSD and TBI. A systematic review evaluating the current body of literature on genetic and peripheral biomarkers associated with comorbid TBI and PTSD found that multiple gene variants are likely to contribute to the cumulative risk of PTSD comorbid with TBI. Furthermore, an elevated circulating level of the pro-inflammatory cytokine IL-6 was the most consistently replicated blood-based indicator of comorbid illness, compared to mild TBI alone. Several genetic and protein markers of cellular injury and inflammation appear to be promising indicators of chronic pathology in comorbid TBI and PTSD.

3.4 Reintegration Challenges, Identity Transitions, and Moral Injury

Transitioning from military service to civilian life represents a significant life change that can be particularly challenging for veterans with combat experience. Veterans face considerable obstacles after their service, including reliance on harmful coping mechanisms such as substance use or unhealthy lifestyles when struggling with trauma. The transition to civilian life can bring a profound sense of loss, as veterans leave behind the structure, order, and mission that the military once provided. In addition, feelings of isolation or disconnection from others can deepen these struggles, heightening the risk of depression, substance abuse, and suicide. In light of these challenges, research confirms the need for psychological rehabilitation of military personnel, which should begin during combat operations and continue throughout peacetime. Feelings of social isolation and difficulties in maintaining relationships are associated with a higher risk of developing PTSD symptoms. Studies have shown that veterans of the armed forces with mental disorders experience fewer reintegration difficulties when supported socially and when their quality of life is higher. Consequently, it may be necessary to intensify the development of additional social programs for occupational retraining and rehabilitation of military personnel. These programs should promote social resilience, develop new social skills, and expand social connections, thereby alleviating symptoms of adjustment dysphoria and improving overall quality of life.

Building on this understanding of social support as a protective factor, post-service identity disruption has been identified as a contextual vulnerability associated with suicide risk among military veterans. Drawing on interdisciplinary scholarship in veterans studies, psychology, and reintegration research, conceptual reviews have synthesized literature on role loss, social disconnection, moral injury, and chronic pain as interacting factors that may destabilize identity during the post-service period. Situating suicide vulnerability within processes of post-service identity reorganization may enhance conceptual clarity, inform prevention strategies, and strengthen interdisciplinary dialogue within veterans studies. Closely related to identity disruption, the concept of moral injury has emerged as a distinct clinical concern relevant to veteran reintegration. Moral injury is a severe form of combat trauma that shatters soldiers' moral bearings as the result of killing in war. Among the myriad ways that moral injury affects veterans' reintegration into civilian life, its impact on political and societal reintegration remains crucial for personal, community, and national health. Moral injury often occurs in extreme conditions of war where familiar moral norms collapse and cease to provide the necessary anchors of human behavior. These circumstances, usually conceptualized as potentially morally injurious events (PMIEs), may lead to moral injury and comprise incidents of

"perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations."

At the core of this phenomenon, shame, guilt, and anger drive moral injury. The potential of PMIEs to precipitate moral injury depends on their severity. A holistic view suggests that PMIEs cause moral distress because they compel agents to choose between two conflicting moral values when agents are forced into a choice incompatible with their moral inclinations. Perceptions of a just world, personal beliefs about the goodness of self/others, and trust in institutions are foundational elements that may be challenged by PMIEs.

Extending these theoretical insights, qualitative research has identified themes of shared narratives and shifting identities among veterans transitioning from combat zones. Veterans discussed the ways in which PMIEs violated their moral assumptions and understandings about the world and themselves, leading to persistent moral emotions. For example, veterans described the persistent guilt and anger they experience daily when reflecting on events where their actions, intended as good, resulted in unintended harm. Veterans also discussed the ways in which PMIEs violated their moral assumptions about themselves, leading to persistent shame following realization of their capacity to kill. Furthermore, veterans highlighted the way in which these emotions impacted their ability to reintegrate fully, with anger driving behavior early in reintegration, shaping their ability to "look at things logically" and impacting their lifestyle.

Moreover, veterans also discussed the way shame and guilt related to their military experiences prevented them from sharing their experiences with those they care about, building new relationships due to fear of judgment or lack of understanding, and even led them to feel unworthy of VA benefits. These perspectives capture how moral emotions derived from betrayal or specific PMIEs might drive veterans to avoid seeking out VA benefits and act as a barrier to care. Beyond these internal psychological struggles, the interpersonal consequences of PTSD symptoms create secondary problems including relationship difficulties, employment challenges, and social isolation. Veterans may become less aware of their families' challenges during deployment, and families may experience marital discord and challenges raising children, calling for the need to renegotiate roles and responsibilities. On the one hand, service members' dissatisfaction with their relationship can lead to depressive symptoms. On the other hand, psychiatric symptoms such as PTSD may interfere with relationship functioning.

3.5 Barriers to Care and Health Disparities

Mental health stigma represents one of the most significant barriers preventing service members and veterans from seeking treatment for depression and other mental health conditions. Sixty to seventy percent of military personnel who experience mental health problems do not seek help, even though seeking care early can address mental health issues before they worsen, leading to fewer disruptions in work, family, and social relationships and better long-term outcomes. Up to 35% of service members surveyed said they believed receiving mental health treatment would negatively affect their careers, whether by limiting promotions, reducing their team's confidence in them, imperiling security clearances, or restricting deployment.

In a study of 4,069 veterans in the National Health and Resilience in Veterans Study, 15% screened positive for a mental health disorder but never received treatment. Nearly half of those veterans (47.1%) reported experiencing at least one barrier to care, with 38.7% encountering logistical or financial obstacles and 28.8% reporting perceived stigma as a barrier to seeking care. As a result, veterans' reluctance to seek care can worsen their psychosocial functioning and impede their quality of life and transition to civilian life.

Racial disparities among veterans, which can affect their mental health support and access to resources, have been observed across generations of military service. Mental health-related discrimination, mistrust, and a lack of confidence in mental health services can lead to reduced engagement in treatment and care-seeking. Veterans' health disparities may stem from differential levels of stress exposure, childhood trauma, military roles, combat experience, health care access, and institutional barriers.

Even though timely access to health care is critical to optimal health outcomes, there is evidence that female veterans underutilize Veterans Health Administration health care relative to their male counterparts for many reasons, ranging from perceived affordability barriers and caregiver responsibilities to knowledge gaps in VA eligibility and services as well as perceived gender discrimination. Veterans with military sexual trauma experience an increased prevalence of mental health disorders. The double disadvantage hypothesis notes that individuals with multiple disadvantaged identities face worse health outcomes than those with only one, highlighting compounded adverse effects exerted by intersecting disadvantages.

For many veterans, mental health issues may develop or be exacerbated in their return to civilian life. That transition can be especially confusing and isolating for women veterans: "They neither fit in the military due to gendered relations centered on masculinity, or civilian life where they are largely misunderstood as 'veterans.' This 'no woman's land' is poorly understood." Few programs for transitioning veterans have been found effective for women veterans because they've been developed for a largely male veteran population, including mental health support programs.

Some women may prefer women-only groups, and even that choice may be dependent on their background, service history, socioeconomic level, and other factors. They may feel more comfortable in women-only groups if they've experienced military sexual trauma. However, others who have served in combat may choose mixed-gender programs. Accessing care may be especially challenging for rural women veterans, who face barriers such as having to travel long distances to get care, a shortage of female practitioners, and practitioners who are well trained to understand and treat the unique needs of female veterans.

A scoping review examining the intersection of trauma, mental health, and reproductive health among women veterans summarized outcomes from 83 studies. Findings revealed that trauma, particularly sexual trauma, and mental health conditions, especially PTSD and depression, are associated with adverse reproductive health outcomes for women Veterans across the lifespan, including unintended pregnancies, adverse gynecological conditions, sexual dysfunction, adverse perinatal outcomes, and increased distress during routine gynecological care procedures. The review underscored the need for trauma-informed care and integration of reproductive and mental health services.

A scoping review of women veterans in Primary Care-Mental Health Integration settings found that women veterans present with nuanced mental health concerns and utilize PC-MHI more than men. The review highlighted the need for adaptation in mental health screening for women veterans in periods of increased mental health risk (e.g., postpartum) and across the lifespan.

Plus, a scoping review of women veteran transition mental health and well-being support group programs examined 35 studies and found significant heterogeneity in program types and delivery. Strengths-based women-only groups, facilitated by women, that created safe spaces for women veterans to share their experiences, enhanced self-expression, agency, and self-empowerment. This was particularly important for women who had experienced military sexual trauma. Physical health and preventative healthcare were important topics for women veterans, particularly reproductive health, mental health, and chronic pain.

3.6 Protective Factors, Resilience, and Recovery Pathways

Understanding protective factors is essential for developing effective interventions and promoting recovery in veteran populations. Resilience has been identified as a modifiable factor with substantial potential for prevention and intervention. Giordano and colleagues cited findings that increasing resilience across services by 20% could reduce the odds of developing PTSD by 73%, depression by 54%, and comorbid PTSD and depression by 93%, with substantial estimated cost savings. These findings underscore the importance of resilience-building interventions as preventive strategies.

The role of social support emerges consistently as a protective factor. Veterans with strong social networks, including family support, peer connections, and community engagement, generally demonstrate better mental health outcomes and smoother reintegration processes. Postdeployment social support has been well established as a protective factor against MDD and has been associated with psychological resilience after trauma exposure. Among combat veterans, a low level of postdeployment social support is one of the strongest negative predictors of PTSD, and higher perceived postdeployment social support has been associated with less severe self-reported PTSD and depression.

Evidence-based psychotherapies demonstrate effectiveness for veteran populations. Trauma-focused interventions, including Prolonged Exposure (PE) and Cognitive Processing Therapy (CPT), have demonstrated the most consistent reductions in PTSD symptoms, with moderate to large effect sizes reported. A meta-analysis on the efficacy of recommended treatments for veterans with PTSD revealed that psychotherapeutic interventions, particularly Eye Movement Desensitization and Reprocessing (EMDR) therapy and CPT, showed significant positive effects in reducing PTSD symptoms. Individual therapy formats delivered in outpatient settings were most commonly used and had favorable outcomes, with pretreatment PTSD symptom severity levels playing a crucial role in predicting treatment gains.

The VA and DoD have developed comprehensive clinical practice guidelines for major depressive disorder and bipolar disorder, most recently updated in 2023. Standard evidence-based treatments for major depressive disorder in veterans include pharmacotherapy and psychotherapeutic interventions such as cognitive behavioral therapy, either alone or in combination. The VA recommends bupropion, mirtazapine, serotonin-norepinephrine reuptake inhibitors, trazodone, vilazodone, vortioxetine, or selective serotonin reuptake inhibitors as first-line pharmacotherapy.

The Veterans Health Administration has implemented programs including interdisciplinary care teams, comprehensive patient assessment, care and case management, and caregiver support services to address the complex needs of veteran populations. The VA/DoD clinical practice guidelines for major depressive disorder note that "among patients who achieve response with antidepressants, the six-month risk of relapse is approximately 41% if antidepressants are discontinued," whereas continuation of treatment with antidepressants reduced relapse rates by approximately 70% compared with placebo. Consequently, guidelines recommend continuing pharmacotherapy for MDD for six months following the first episode, with longer treatment for those with recurrent episodes or high-risk subpopulations.

The VA is also investigating novel treatment approaches. Nine VA facilities are participating in long-term studies to test the safety and clinical impact of psychedelic compounds for PTSD, treatment-resistant depression, and anxiety disorders. Early trials from Johns Hopkins University, the Multidisciplinary Association for Psychedelic Studies (MAPS), and others found significant symptom reductions for some participants with chronic PTSD. MAPP2, the multisite phase 3 study that extended the findings of MAPP1, found that MDMA-assisted therapy significantly improved PTSD symptoms and functional impairment, compared with placebo-assisted therapy. Notably, of the 52 participants (including 16 veterans), 45 (86%) achieved a clinically meaningful benefit, and 37 (71%) no longer met criteria for PTSD by study end. In 2024, the VA issued a request for applications for proposals to gather "definitive scientific evidence" on the potential efficacy and safety of psychedelic compounds, such as MDMA and psilocybin, when used in conjunction with psychotherapy.

IV. Discussion

4.1 Synthesis of Findings

This integrative review synthesizes evidence across multiple domains of veteran mental health, revealing a complex picture of interacting conditions, transitions, and recovery pathways. Overall, the findings demonstrate that warzone veterans experience elevated rates of PTSD, depression, substance use disorders, and associated functional impairment, with prevalence varying based on conflict era, injury type, combat exposure, and assessment methods. Furthermore, the substantial comorbidity between conditions, particularly

the pain-PTSD-depression triad, requires integrated treatment approaches that address all three domains simultaneously rather than in isolation.

The transition from military service to civilian life represents a critical period of vulnerability and opportunity. Veterans face challenges in adapting to a new cultural context, reconstructing identity, finding meaning beyond military service, and navigating the psychological sequelae of combat exposure. Those with combat exposure and trauma histories experience particular difficulty with this transition, suggesting that targeted reintegration support is essential. Additionally, the emergence of moral injury as a distinct clinical concern highlights the importance of attending to veterans' meaning-making processes and moral experiences during reintegration, as these factors may significantly influence both psychological adjustment and help-seeking behaviors.

Protective factors, including social support, resilience, and positive coping, offer pathways to recovery. However, the evidence base remains limited, particularly for longitudinal studies examining how protective factors interact with risk factors over time and how interventions can effectively bolster these protective mechanisms. Consequently, further research is needed to translate these protective factors into actionable intervention strategies.

Finally, the findings underscore significant barriers to care, including mental health stigma, logistical and financial obstacles, and health disparities affecting racial/ethnic minorities and female veterans. These barriers highlight the need for continued efforts to reduce stigma, expand access to culturally competent care, and address the unique needs of diverse veteran populations.

4.2 Implications for Clinical Practice

The findings of this review have several important implications for clinical practice.

Comprehensive Screening and Assessment: Given the high prevalence and comorbidity of mental health conditions in veteran populations, screening should encompass multiple domains including PTSD, depression, anxiety, substance use, suicide risk, and moral injury. In addition, assessment should also address somatic symptoms and pain, as these may predict mental health outcomes and serve as early warning signs for developing psychopathology.

Integrated Treatment Approaches: The bidirectional relationships between pain, PTSD, and depression suggest that treatment should address these conditions concurrently rather than sequentially. For example, early pain management may reduce PTSD risk, while addressing depressive symptoms may improve PTSD treatment outcomes. Therefore, collaborative care models that integrate mental health and physical health services are essential for optimizing veteran outcomes.

Trauma-Informed Care: Veterans have often experienced repeated traumatic exposures, and healthcare interactions should be conducted with sensitivity to trauma responses. Clinician awareness of the potential for re-traumatization is essential. Trauma-focused interventions, including Prolonged Exposure (PE) and Cognitive Processing Therapy (CPT), have demonstrated effectiveness and should be offered as first-line treatments. However, treatment should be flexible and responsive to individual preferences and needs to maximize engagement and therapeutic benefit.

Culturally Competent Care: Understanding military culture, including values of stoicism, unit cohesion, and hierarchical structure, is essential for establishing therapeutic relationships and delivering effective care. Providers should also attend to the unique needs of diverse veteran populations, including women, racial/ethnic minorities, and veterans from different service eras. Moreover, integration of reproductive and mental health services is particularly important for women veterans, as reproductive health concerns are frequently intertwined with mental health outcomes.

Addressing Moral Injury: Mental health practitioners need to be attuned to and assess for moral injury in reintegrating veterans, particularly as onset of moral injury may occur during reintegration when veterans reflect on their military experiences and come to new moral conclusions. Clinicians and researchers must foster a significant degree of trust to facilitate disclosure of potentially morally injurious experiences, as shame and guilt often prevent veterans from discussing these sensitive topics.

Reintegration Support: Interventions addressing the transition from military to civilian life should target both practical adaptation (employment, housing, education) and psychological adaptation (identity, meaning, social connections). Social programs for occupational retraining and rehabilitation that promote social resilience, develop new social skills, and expand social connections can alleviate symptoms of adjustment dysphoria and improve overall quality of life. Peer support programs may be particularly valuable given the importance of shared experience and military identity in fostering trust and engagement.
Suicide Prevention: Given the elevated risk of suicide in veteran populations, systematic assessment of suicidal ideation and behaviors is essential, with consistent follow-up. Interventions addressing depressive symptoms and moral injury may have suicide prevention benefits, suggesting that comprehensive mental health care can serve dual purposes of symptom reduction and mortality prevention.

4.3 Gaps in the Evidence Base

Several important gaps in the evidence base were identified. To begin with, most reviewed studies employed cross-sectional designs, limiting understanding of the trajectories of mental health conditions over time and the factors that influence recovery; consequently, cohort studies following veterans from deployment through long-term reintegration are needed to establish causal pathways and identify critical intervention windows. Moreover, randomized controlled trials of mental health interventions in veteran populations remain limited, particularly for treatments addressing comorbid conditions, moral injury, and reintegration support, and comparative effectiveness trials are similarly needed to identify optimal treatment approaches for different veteran subgroups based on individual characteristics and preferences. In addition, research has primarily focused on U.S. male veterans, with limited representation of female veterans, veterans from other countries, and minority groups; as a result, health disparities affecting diverse veteran populations require further investigation to ensure equitable access to effective care.

Furthermore, the mechanisms linking combat exposure, injury characteristics, and mental health outcomes are not fully understood, necessitating research examining biological, psychological, and social mechanisms to inform targeted interventions; biomarker research investigating genetic and peripheral markers of comorbid conditions such as PTSD and TBI shows promise but requires further development before clinical application. Likewise, while the effects of veteran mental health on families are acknowledged, research specifically examining family interventions and support programs is limited, and studies evaluating how to effectively engage families in the recovery process and support family functioning would address this critical gap. Finally, research examining how to effectively translate evidence-based interventions into diverse clinical and community settings is limited, underscoring the need for studies of implementation strategies, barriers, and facilitators to ensure that effective treatments reach veterans who need them, particularly those in underserved or rural areas.

4.4 Limitations

This integrative review has several limitations. First, the search strategy was primarily focused on English-language databases, potentially missing relevant literature in other languages. Second, the heterogeneity of study designs, populations, conflict eras, and outcome measures limited the ability to conduct quantitative synthesis. Third, the rapid pace of research in this field means that newer studies may have been published since the search was completed. Also, while efforts were made to include gray literature, the review primarily drew from peer-reviewed publications, which may introduce publication bias. The focus on OEF/OIF/OND veterans may limit generalizability to veterans from other conflicts, though findings were supplemented with research on Vietnam and other veteran populations where available. The review did not conduct formal meta-analysis, and the narrative synthesis approach may have limited precision in quantifying

effect sizes. Finally, the quality assessment of included studies was not systematically quantified, though methodological limitations were noted where relevant.

4.5 Future Research Directions

Based on the findings and identified gaps, several research priorities are recommended. To begin with, longitudinal cohort studies are needed to examine the trajectories of mental health conditions from deployment through long-term reintegration, identifying risk factors and protective factors at multiple time points; such research should examine how initial reintegration experiences influence longer-term outcomes and whether early intervention can interrupt trajectories leading to chronic challenges. Alongside this, comparative effectiveness trials of interventions targeting the pain-PTSD-depression triad are essential, including both pharmacological and nonpharmacological approaches, and these trials should examine optimal sequencing and combination of treatments to maximize outcomes for veterans with complex comorbidity. In the same vein, research on protective factors, including resilience, social support, and meaning-making, should examine underlying mechanisms and potential for intervention development, investigating how these factors can be cultivated and sustained over time.

In parallel, studies of diverse veteran populations are critically needed, including women, racial/ethnic minorities, international veterans, veterans from different service eras, and those in medically underserved areas; research on women veterans should specifically address reproductive health, menopause, aging, and military exposures as intersecting factors affecting mental health. By the same token, implementation research examining how to effectively translate evidence-based interventions into diverse clinical and community settings, including non-VA settings and rural communities, is necessary to bridge the gap between research and practice. Family-focused research is equally important, as studies examining the impacts of veteran mental health on families and evaluating interventions that support family functioning and veteran recovery simultaneously remain limited.

Turning to more specialized areas, research on moral injury requires further attention, particularly studies examining mechanisms, prevalence, assessment approaches, and interventions; such research should examine how moral injury develops during reintegration and how it interacts with other mental health conditions over time. In a related development, biomarker research investigating genetic and peripheral markers of comorbid conditions such as PTSD and TBI shows promise and warrants further development to create novel diagnostic tools and therapeutic interventions that can guide personalized treatment approaches. Telehealth and digital interventions also merit rigorous evaluation, as these remote and technology-based approaches may effectively reach veterans in underserved areas through mobile health applications and online therapy platforms. Last but not least, psychedelic-assisted therapy research represents an emerging frontier, and continued investigation into the potential efficacy and safety of compounds such as MDMA and psilocybin, when used in conjunction with psychotherapy for treatment-resistant PTSD and depression in veteran populations, should build on the promising early findings already reported in the literature.

V. Conclusion

This integrative review synthesizes evidence on the mental health of warzone veterans, revealing a complex picture of multiple interacting conditions, transitions, and recovery pathways. First and foremost, the prevalence of PTSD, depression, and comorbid conditions among veterans returning from combat zones is substantial, with rates varying based on injury characteristics, combat exposure, and assessment methods. Compounding this issue, the bidirectional relationships between pain, PTSD, and depression have important implications for clinical practice, suggesting that integrated treatment approaches are needed rather than sequential or siloed interventions. The transition from military service to civilian life represents a period of particular vulnerability, with veterans facing challenges in cultural adaptation, identity reconstruction, social reintegration, and meaning-making; in this context, moral injury emerges as a distinct clinical concern requiring attention, particularly as veterans reflect on their experiences and develop new moral conclusions during reintegration. On a more encouraging note, protective factors including social support, resilience, and positive coping offer pathways to recovery, though the evidence base for specific interventions remains

limited and warrants further investigation. At the same time, significant barriers to care, including mental health stigma, logistical and financial obstacles, and health disparities, must be addressed to ensure that all veterans receive needed services, and the unique challenges faced by women veterans, who represent the fastest-growing military population, highlight the need for tailored solutions that address their specific needs across the lifespan.

Bringing these threads together, the findings support the development of comprehensive, integrated care models that address the full spectrum of veteran mental health needs; such models should incorporate trauma-informed approaches, culturally competent care, and attention to the unique experiences of combat-deployed veterans. In this regard, collaboration across healthcare systems, community organizations, and veteran-serving agencies is essential for ensuring that veterans receive the support they need to achieve recovery and meaningful reintegration. Above all, healing is not a destination but a lifelong process, and every member of the community can play a role in supporting veterans as they seek hope, health, and meaning beyond their service. The society they defended must provide not only medical treatment but also compassion, understanding, and the full support necessary for true healing and reintegration.

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