Psychological Fitness

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ABSTRACT  The dramatic increase in psychological demands associated with current military operations makes psychological fitness of our military personnel more vital than ever. Psychological fitness is defined as the integration and optimization of mental, emotional, and behavioral abilities and capacities to optimize performance and strengthen the resilience of warfighters. The present article proposes a military demand-resource (MDR) model as a comprehensive and integrated model of psychological fitness for the total force. The model emphasizes the importance of identifying military-driven and evidence-informed variables, and selecting operational outcome measures for resilience and performance. The model integrates the roles of internal (personal) and external (environmental) resources specifically for developing, sustaining, and restoring psychological resources, similar to the maintenance of physical fitness and health. Equal attention to the psychological component is critical for achieving the mind–body balance as desired in a total force fitness framework for military forces today.

INTRODUCTION
Contemporary sustained armed conflicts pose unparalleled challenges. These challenges include conflict with nonstate adversaries using guerrilla and terrorist tactics while operating under stringent rules of engagement, protracted conflicts requiring multiple deployments, and increased flow and ambiguity of information and tasks, noncombat roles, autonomy, and responsibility at lower levels (e.g., small teams), and coordination among joint, interagency, and multinational operations.1,2 These challenges translate into significant psychological demands on service members, which include the amount and speed of information and tasks, ambiguity of roles and responsibilities, necessity for quick and accurate decisions, and a range of other acute and cumulative challenges associated with military operations.3–7

Given the psychological demands on service members, psychological fitness is more vital than ever. Psychological fitness is defined as the integration and optimization of mental, emotional, and behavioral abilities and capacities to optimize performance and strengthen the resilience of warfighters. The service members’ resilience (ability to withstand, recover, grow, and adapt under these challenging circumstances) is vital to force protection. In addition, without such resilience, service members’ performance (ability to successfully complete tasks) suffers and their fitness and readiness for deployment is adversely affected. This article proposes a comprehensive and integrated model of operational psychological fitness for enhancing mission-critical performance and resilience in service members.

METHODS/Approach
To consider and develop such a model that addresses psychological fitness in the armed services, a diverse team of military and civilian health and human systems professionals collaborated on reviewing the best available evidence cited in the literature across a range of disciplines to develop an integrated model of psychological fitness. The group included representatives from all services, joint forces command, and special operations command. The primary literature sources were prepublication drafts of systematic reviews on performance factors by the Army Center for Enhanced Performance8 and resilience factors by RAND.9 The team used a concept analysis approach10 to review the empirically based factors, refine definitions of key terms, and identify subdomains of psychological fitness. The team then divided into subteams that focused on each of the different subdomains. Additional literature reviews included military topics and research pertaining
to sports, human factors, organizational, neuropsychological, health, and clinical psychology review articles and research. In addition, the team consulted with subject matter experts in a variety of areas including outcome metrics and tools for skill training.

**Military Demand-Resource Model**

This article proposes a military demand-resource (MDR) model, which has several key features. First, the model is a systems model that accounts for key interactions across the full range of demands and resources in predicting resilience and performance outcomes. Second, the model is also based on the proposition that it is possible to identify and develop psychological fitness similar to physical fitness, which has important implications for military culture. Third, the criteria for selecting the core framework of the model are based on relevance for use with the military system, operations, and outcomes. How these criteria are met is best understood by discussing the model origins and components first.

The model is based on an integration of the conservation of resources (COR) theory and the job demand-resource model, both of which suggest that resources and demands must be continuously monitored to ensure that resources that are needed to address environmental demands are sufficiently maintained. The MDR model identifies the following types of variables that interact to determine outcomes: demands, external resources, and internal resources.

Demands are aspects of the environment that require physical, psychological, social, and spiritual resources. Primary psychological demands identified in the current military operational environment include the amount and speed of information and tasks, challenging roles and responsibilities (unclear, changing, and competing), necessity for quick and accurate decisions, all of which are part of the range of stressors associated with military operations and activities of daily living. The range of additional stressors can also be acute (e.g., exposure to real risk of serious injury or the aftermath of violence, traumatic loss, or moral conflict) and/or chronic (e.g., repeated long work days and limited time for rest, extended sense of powerlessness). In addition, it is important to recognize that the military lifestyle includes demands not associated with combat and operational challenges. Some of these additional demands include frequent moves, training requirements, expected social behaviors, and career enhancing additional duties.

There are two types of variables in the resource environment: internal and external. Both internal (personal) and external (environmental) resources are called upon to accomplish mission goals, meet demand challenges, and stimulate personal growth and development. Internal resources identified in the model include awareness, beliefs and appraisals, coping, decision making, and engagement. External resources, in turn, include aspects of and from the environment that can be helpful. The COR evaluation provides a list of general resources that ranges from adequate money and transportation to loyalty of friends. In a military system, external resources can include leadership, unit members, families, educational and training programs, and community support organizations and programs.

There are also three important characteristics of resources identified in COR theory. The first is the primacy of resource loss, which means that resource loss has a more pronounced degree and speed of impact than resource gain. This means that the adverse impacts of a resource loss will be much greater than the benefits associated with an equal and opposite gain in resources. The second is that resource investment is an important strategy to protect against resource loss, recover from losses, and gain resources. In other words, those with fewer resources are disadvantaged in two ways: (1) by being more vulnerable to resource loss and (2) by being less capable of generating resource gains. The third is that resource environments can provide direct support and facilitate learning skills for developing resources similar to Hobfoll's concept of resource caravans and passageways. Examples include stability, safety, and support from family, neighborhood, and community.

An illustration of the MDR model is shown below in Figure 1. Some key features of this model include:

1. Primary components are sequenced chronologically with inputs (demands) first, mediators (resource environment) in the middle, and outcomes (psychological fitness end state of resilience and performance) last.
2. Internal and external resources are in a larger box representing the resource environment, which can either facilitate or hinder transfer of resources and resource development skills. The mobilization of resources depends upon the nature of the resource and the skill to use the available resources. A robust resource environment is immaterial if the service member does not have the skill to use the resource. Conversely, people who are skilled in using their resources often need fewer resources to achieve positive resilience and performance outcomes.

![FIGURE 1. Military Demand-Resource Model.](image-url)
(3) Desired psychological fitness end state is represented by a large box around resilience-enhancing and positive performance outcomes.

(4) Paths between resources and performance can be either direct or mediated by resilience (e.g., decision making skills can directly impact the quality of decisions or could be mediated by fatigue).

(5) Path to negative resilience/performance outcomes is indicated by dashed lines. These arrows are shorter and thicker to represent that resource losses are greater in degree and speed than resource gains.

(6) Cyclical nature of model includes paths from the performance outcomes back to resources (e.g., positive performance can lead to increased competence and confidence) as well as from performance outcomes to operational demands (e.g., success in combat can lead to decreased threats).

The model also proposes that psychological fitness can be developed using the same training principles as physical fitness. These training principles include increasing awareness and skills through education, repeated practice, feedback mechanisms, performance incentives, and sufficient challenge to push skills to their limit but not exceed limits. Training may increase the capability for better effectiveness under stress and faster recovery from psychological stress. Likewise, capabilities can become degraded with either underuse or overextension due to excessively severe or chronic demands and/or limited resources, which is consistent with the model’s emphasis on the importance of managing resources effectively.

The framing of psychological fitness as a parallel focus to physical fitness has important cultural implications related to the military’s ability to leverage psychological fitness fully. First, a broadening of the view of psychological health to a continuum of functioning that ranges from optimal to impaired will hopefully decrease stigma around mental health issues and normalize getting treatment when needed, just as one would naturally do for a physical injury or illness. Second, by developing a lexicon of psychological fitness domains, the military can move toward systematic approaches to better understand and improve how we develop and measure these areas of functioning (e.g., increasing awareness, developing core skills, and mission readiness) and encourage all levels of the military system to take more responsibility for their development.

The criteria for selecting and developing features of the MDR model also describe the main utility of this model. To best capture the complexity of human and military systems, the criteria included a model that could: (1) use a strengths-based approach to assess what resources are available and what resources are needed based on demands, (2) understand and optimize the interactions between a person’s mind-body internal resources and the complexities of the military’s demands and external resources, and (3) assess dynamic interaction demands and resources over time. The comprehensive and dynamic focus of the MDR model is especially important for measuring, managing, and leveraging a multifaceted system that involves the complex force structures, multiple deployments, protracted asymmetrical warfare, limited resources, and military lifestyle challenges.

Outcomes and Metrics

The use of appropriate metrics is essential for evaluating the effectiveness of efforts designed to improve psychological fitness. Metrics can be generally classified as either objective (e.g., frequencies of activities, scores on tasks and tests, ratings by clinicians and supervisors and, physiologic measures and biomarkers) or subjective (i.e., self-report or ratings by clinicians and supervisors). Descriptive and outcome data can be collected on multiple levels (e.g., individual, group, and population levels).

Selection of metrics ultimately depends on whether the metric is feasible, can measure the desired outcome, and can assess whether a program is effectively meeting its goals. In general, objective measures are preferred because they are less subject to natural human biases.37 Confidence in findings is also increased when using multiple methods of measuring variables.38 Tables I and II provide a sample of either objective or empirically validated subjective metrics that can be used to measure intermediate and operational outcomes related to psychological fitness. Table I provides sample metrics for intermediate outcomes, which are defined as changes in the internal resources themselves (i.e., awareness, beliefs and appraisals, coping, decision making, and engagement) that are thought to influence operational outcomes. In contrast, Table II describes potential metrics for operational outcomes, which are defined as changes in resilience and performance aspects of force protection, readiness, and operational capabilities.

For each outcome variables listed in Tables I and II information about the following selection considerations are included:

(1) One or more options for metrics to measure the outcome.

(2) Definition/explanation of the outcome and/or the metric.

(3) Summary of evidence from peer-reviewed publications supporting the reliability and validity of the metric(s). To be included in these tables, metrics must have had:

(a) At least one article published on the psychometric properties of the metric.

(b) Evidence of reliability (i.e., the consistency of scores from one assessment to another) through either a correlation across repeated measures of ≥0.55 or a Cronbach’s α (internal consistency) of ≥0.70.20

(c) Evidence of validity (i.e., the ability of the test to measure what it says it measures) thorough a correlation coefficient ≥0.1.21

(d) Description of relevance to military operations, including tailoring testing and use in military and veteran populations.
<table>
<thead>
<tr>
<th>Internal Resource Variable</th>
<th>Options for Metrics</th>
<th>Description (D), Evidence (E), Relevance (R), and Practicality (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness</td>
<td>Metacognitive</td>
<td>D: Self-report inventory designed to measure two categories of metacognitive awareness in adults: knowledge of cognition and regulation of cognition. E: Cronbach’s α = 0.90, Pearson’s r = 0.54 df. R: Metacognitive awareness is essential for service members to have skills for recognizing changes in physical and emotional states to effectively regulate one’s own stress responses and to relate effectively with others. P: 52 items.</td>
</tr>
<tr>
<td></td>
<td>Awareness Inventory</td>
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<tr>
<td></td>
<td>Attention Network</td>
<td>D: Computerized battery designed to evaluate alerting, orienting, and executive attention. Composed of three independent behavioral components of attention: conflict resolution (ability to overcome distracting stimuli), spatial orienting (the benefit of valid spatial precues), and alerting (the benefit of temporal precues). E: Study with 40 normal adult subjects indicates that ANT produces reliable single subject estimates of alerting, orienting, and executive function. R: Using ANT, mental training has been shown to improve the ability to orient attention, allow for improved alerting skills, and protect against functional impairments in WMC. These findings are significant in the dynamic, high-stress, and resource-scarce combat environment. P: 30-min testing session.</td>
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<tr>
<td></td>
<td>Test (ANT)</td>
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<tr>
<td>Beliefs and</td>
<td>Post-Traumatic</td>
<td>D: Self-report measure of cognitive responses to trauma. Composed of three factors: (a) negative cognitions about self, (b) negative cognitions about the world, and (c) self-blame. E: Internal consistency measures for three subscales (negative cognitions about the self, α = 0.97; negative cognitions about the world, α = 0.88; self-blame, α = 0.86). R: Validated in individuals who sought assessment and possible treatment for mental health problems following an accident involving actual or threatened death or serious injury and their emotional response included intense fear, helplessness, horror, or the perception that they would die. P: 33 items.</td>
</tr>
<tr>
<td>Appraisals</td>
<td>Cognitions Inventory (PTCI)</td>
<td></td>
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<tr>
<td></td>
<td>Situational Self-Efficacy (SSE) Scale</td>
<td>D: Developed for investigating the predictive power of efficacy expectations about behavior or task performance. SSE asks to rate (from 1 to 10) level of confidence in ability to do well. E: Has been found to be associated with multitask performance with military personnel. R: There is extensive evidence that self-efficacy is associated with higher levels of motivation and performance for civilian and military populations. P: High. This is a single-item questionnaire.</td>
</tr>
<tr>
<td>Beliefs and</td>
<td>Dispositional</td>
<td>D: Self-report measure of hardness—resilience in response to stress. Composed of three facets: (a) commitment, (b) control, and (c) challenge. E: Cronbach’s α = 0.82 for total hardness; facets range from 0.68 to 0.77; 2-week test–retest reliability 0.78. R: Well validated in U.S. and international military samples. P: 15 items rated on a 4-point Likert scale; 2–3 minutes to complete.</td>
</tr>
<tr>
<td>Appraisals</td>
<td>Resilience Scale</td>
<td></td>
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<tr>
<td></td>
<td>DRS-15 Psychological</td>
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<tr>
<td></td>
<td>Hardness</td>
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<tr>
<td>Coping</td>
<td>Coping Self-Efficacy Scale (CSES)</td>
<td>D: Self-report inventory designed to measure perceived self-efficacy for coping with challenges and threats. Focuses on changes in a person’s confidence in his or her ability to cope effectively. E: Internal consistency and test–retest reliability are strong for all three factors, (α = 0.91 and 0.80, respectively). Concurrent validity analyses show these factors assess self-efficacy for different types of coping. R: 3 military-relevant factors: problem-focused coping (6 items), emotion-focused coping thoughts (4 items), and ability to get social support (3 items). P: CSES has 13 items.</td>
</tr>
<tr>
<td>Coping</td>
<td>Brief COPE Scale</td>
<td>D: Self-report scale to measure coping ability. Scales include: self-distraction, active coping, denial, substance use, items, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, self-blame. E: Based on the well-validated COPE inventory. R: Psychometric properties of the Brief COPE are reported from a sample of adults participating in a study of the process of recovery after Hurricane Andrew. P: 28 items.</td>
</tr>
<tr>
<td>Decision Making</td>
<td>Cognitive Flexibility Scale</td>
<td></td>
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<tr>
<td></td>
<td>Scale</td>
<td>D: Self-report scale: subjects rate 19 adjective pairs that capture flexibility in regard to themselves, others, and the environment. E: Internal consistency 0.92, test–retest 0.77, split-half 0.87. R: Emphasizes need in flexibility of thinking before acting. P: 19 items.</td>
</tr>
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TABLE I. Continued

<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>Engagement Scale</td>
<td>E: Internal consistency, Cronbach’s α between 0.80 and 0.90. Two-year stability coefficients for vigor, dedication, and absorption are 0.30, 0.36, and 0.46, respectively.</td>
</tr>
<tr>
<td></td>
<td>(UWES)</td>
<td>R: Has been validated in military police officers.</td>
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<td></td>
<td></td>
<td>P: UWES-9 version contains 9 items.</td>
</tr>
<tr>
<td>Active Disengagement</td>
<td>Gallup Q12</td>
<td>D: Self-report instrument. Respondents are asked to rate their response to each question on a scale of one to five about key satisfaction elements that indicate the presence of deep worker engagement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E: To identify the 12 items, Gallup conducted thousands of interviews in many types of organizations and industries across the world. These 12 emerged as the best predictors of employee and work group performance.</td>
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<td></td>
<td></td>
<td>R: Results have shown a strong link between high survey scores and worker performance.</td>
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<td></td>
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<td>P: 12 items.</td>
</tr>
</tbody>
</table>


TABLE II. Operational Outcomes, Variables, and Metrics Related to Performance

<table>
<thead>
<tr>
<th>Operational Outcome Variable</th>
<th>Options for Metrics</th>
<th>Description (D), Evidence (E), Relevance (R), and Practicality (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team/Organizational Job and Task Performance</td>
<td>Performance Scenarios, Inspections and Surveys</td>
<td>D: Objective measures, including evaluation of team coordination and maneuvering in simulated performance scenarios, organization inspections, and unit surveys.</td>
</tr>
<tr>
<td>Individual Organizational Job and Task Performance</td>
<td>Performance Appraisals and Test Scores</td>
<td>E: Objective data.</td>
</tr>
<tr>
<td>Individual Organizational Job and Task Performance</td>
<td>World Health Organization's Health and Work Performance Questionnaire (HPQ)</td>
<td>D: Self-report instrument designed to estimate the workplace costs of health problems in terms of reduced job performance, sickness absence, and work-related accidents-injuries.</td>
</tr>
<tr>
<td>Individual Organizational Job and Task Performance</td>
<td></td>
<td>E: Good calibration with archival measures of work performance and absenteeism.</td>
</tr>
</tbody>
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### TABLE II. Continued

<table>
<thead>
<tr>
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<th>Description (D), Evidence (E), Relevance (R), and Practicality (P)</th>
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</thead>
<tbody>
<tr>
<td>Retention</td>
<td>Early Separation</td>
<td>D: Number of personnel who separate with either: (a) less than 3 years of service (YOS) or (b) between 3 and 8 YOS in 7 separation categories (Convenience of the Government, Drugs, Physical, Psychological, etc.). E: Objective data. R: Majority of early separations are not known with enough advanced notice and therefore impact force readiness. In the majority of early separation cases, there is a negative impact from loss. Stressor on the force for potential inability to deploy and stressor on the families of those who are separated.</td>
</tr>
<tr>
<td>Multiperspective Ratings of Performance</td>
<td>360 Survey</td>
<td>D: Raters from multiple perspectives (superior, peer, subordinate) assess dimensions of performance. E: Tacit Knowledge for Military Leadership (TKML) 360 has been shown to have adequate reliability and validity with Army officers. R: Self-ratings can be inflated. P: Multi-source assessment feedback (MSAF) 360 survey is being utilized for leadership development at the Army’s Center for Leadership Development, Fort Leavenworth, KS and is available online.</td>
</tr>
<tr>
<td>Organizational Citizenship Behaviors (OCB)</td>
<td>Organizational Citizenship Behaviors Questionnaire</td>
<td>D: Self-report measure designed to measure altruism, conscientiousness about commitments, ability to work supportively under pressure, thoughtfulness toward others, and commitment to community. E: Individual OCBs = 0.89, Organization OCBs = 0.79. R: Positive relationships between OCB and individual-level performance aggregated individual performance, group-level measures of performance and organizational-level measures of performance. While supportive, these efforts have not utilized methodologies that establish causal priorities among the variables and show some inconsistencies in their findings.</td>
</tr>
<tr>
<td>Resilience</td>
<td>Connor-Davidson Resilience Scale (CD-RISC)</td>
<td>D: Distinguishes between those with greater and lesser resilience. E: Good test-retest reliability, sound construct validity, and psychometric properties. R: Has been used in military populations. P: CD-RISC 2 takes less than 30 seconds to complete.</td>
</tr>
<tr>
<td>Safety Mishaps (Motorcycle fatalities, etc.)</td>
<td>DoD-wide rates for civilian injuries, private motor vehicle fatalities, and flight class A mishaps.</td>
<td>D: Defense Safety Oversight and common OSHA metric (lost day rate), based on time cards/ days away. Does not assume whether mishaps are intentional or accidental. Assumes that mishaps are severe enough to impact deployment. E: Objective data. R: Safety mishaps have a direct impact on deployment. P: Already collected in military, available through DUSD (R).</td>
</tr>
<tr>
<td>Burnout</td>
<td>Shrom-Melamed Burnout measure (SMBM)</td>
<td>D: Self-report questionnaire that assesses physical fatigue (6 items), emotional exhaustion (4 items), and cognitive weariness at work (6 items). Consists of two subscales: physical fatigue and cognitive weariness. Respondents completing the SMBM are asked to rate the frequency of appearance of each feeling during their work. All items are scored on a 7-point frequency scale, ranging from 1, almost never, to 7, almost always. E: Cronbach’s α = 0.92, Pearson’s r = 0.45-0.89. R: Sample included 325 human service professionals from five organizations. P: 16 items.</td>
</tr>
<tr>
<td>Well-Being, Health-Related Quality of Life, and Functional Health Status</td>
<td>The Veterans RAND 12-Item Health Survey (VR-12), aka Veterans SF-12</td>
<td>D: Derived from the Veterans RAND 36-Item Health Survey (VR-36), developed using extensive research and normative data from the VR-36 in the VHA. Consists of the 12 most important items from the VR-36 for construction of the physical and mental component summary scales. E: Strong psychometric properties of VR-36 well established. Two summary component scales derived from the VR-12 explain over 90% of the variance in scales of the VR-36. R: VR-12 has been administered in national VA surveys in 1997 and 1998 to over 60,000 patients. Since 2002, the VA has administered the VR-12 to approximately 432,000 patients annually as part of its quality management program. P: 12 items.</td>
</tr>
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<tbody>
<tr>
<td>Mental Health Symptoms</td>
<td>Post-Deployment Health Assessment and Re-Assessment (PDHA, PDHRA) and Patient Health Questionnaire (PHQ-2)</td>
<td>D: PDHA includes a face-to-face interview with a trained health care provider and directed at the individual's health status and concerns at redeployment. PDHRA identifies health concerns that have emerged over time following the most recent deployment. Included in the PDHA is the Patient Health Questionnaire (PHQ-2) is a 2-item depression instrument that inquires about the frequency of depressed mood and anhedonia. Returns deployers with DD2796 (PDHA) or DD2900 (PDHRA) on file; positive screen or referral on either form is counted. E: PHQ-2 has high construct and criterion validity. R: Can lead to other risk behaviors or family maltreatment that can disrupt readiness. Can be directly related to deployment risk (hospitalization or discharge). Evaluations reflect either behavioral mental health issues or other behavioral/social issues that lead to indispline, family maltreatment, separation, etc. Behavioral/mental health issues higher prevalence in returning deployers (PTSD, etc.).</td>
</tr>
<tr>
<td>Family Maltreatment</td>
<td>Annual Rate of Child Victims of Active Component and Civilian Parent Substantiated Abusers</td>
<td>D: Includes both married and unmarried abusers; does not include non-caregiving non-offending (mother) child abuse (samples too small); collected over several years (comfortable with since FY 2000). E: Objective data. R: Both an indicator of stress and potential deterrent to deployment due to indispline.</td>
</tr>
<tr>
<td>Alcohol Abuse</td>
<td>Single-Item Alcohol Screening Questionnaire (SASQ)</td>
<td>D: &quot;On any single occasion during the past 3 months, have you had more than 5 drinks containing alcohol?&quot; E: Accurately identifies patients who meet DSM criteria for alcohol abuse or dependence. R: Antecedent to individual risk behaviors.</td>
</tr>
<tr>
<td>Alcohol Screenings</td>
<td>Number of Alcohol Program Screenings/Assessments Conducted in Each Service During the Quarter Compared to Baseline Level for That Quarter</td>
<td>D: Reflection of rate of actual usage/abuse. E: Objective data. R: Severe alcohol abuse can lead to safety mishaps or death, other risk behaviors, and indispline.</td>
</tr>
<tr>
<td>Illicit Drug Use</td>
<td>Quarterly Illicit Drug Positive Rate</td>
<td>D: Number of service members with an illicit drug positive specimen in the calendar year divided by number of unique service members tested. Drug abuse not defined by specific type(s) of abused drug. E: Objective data. R: Rates reflect both abusers as well as short-term/single event users. Can lead to safety mishaps or death, other risk behaviors, and indispline.</td>
</tr>
<tr>
<td>Daytime sleepiness</td>
<td>Epworth Sleepiness Scale</td>
<td>D: Asks the subject to rate his or her probability of falling asleep on a scale of increasing probability from 0 to 3. E: Pearson correlation coefficients range from 0.70 to 0.80; high specificity (100%) and sensitivity (93,5%). R: Daytime sleepiness = decreased focus. Has been tested in an Army MTF sleep clinic.</td>
</tr>
<tr>
<td>Military Suicides</td>
<td>Number of Probable and Confirmed AD Suicides by Quarter</td>
<td>D: Time period chosen because the variation in suicide rates was relatively normal; probable suicide equates to confirmed suicides. E: Objective data. R: Clear link to inability to deploy, also impacts morale across unit or force.</td>
</tr>
<tr>
<td>Divorce Rates</td>
<td>Percentage of Personnel Who Were Already Married at the Beginning of the Fiscal Year but Were Divorced at the End of the Fiscal Year</td>
<td>D: See left. No appropriate way to compare military divorce rates to civilian divorce rates. E: Objective data. R: Can be an indicator of increased stress, lead to other risk behaviors, and delay deployment due to legal proceedings. P: Already collected in military. Source: DUSD (MC and FP).</td>
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<tbody>
<tr>
<td>Indiscipline (Courts-Martial, Nonjudicial Punishment, Desertions)</td>
<td>Number of Service Members Convened at General or Special Courts-Martial per Fiscal Year, Number of Nonjudicial Punishment Proceedings Administered per Fiscal Year, Number of Desertion per Fiscal Year</td>
<td>D: Loss of service members on average reflect a negative loss to the force (despite the negative behavior, the assumption is made that the loss service member was at one time considered a deployable member). E: Objective data. R: Clear relationship with deployment and readiness. P: Already collected in military. Source: DUSD (P).</td>
</tr>
</tbody>
</table>


(e) Summary of the metric’s practicality, including ease of administration, length of questionnaire, response burden, and whether metrics exist in other measures that are already routinely administered or in pre-existing databases.

**Internal Resources Specific to Psychological Fitness**

The internal resources include five subdomains of psychological fitness: awareness, beliefs and appraisals, coping, decision making, and engagement. The descriptions of these subdomains includes a line definition of each subdomain and supporting factors, samples of empirical evidence for how the factors relate to performance and resilience, and samples of the evidence for the effectiveness of identified factors.

**Awareness**

Virtually all of the factors that contribute to resilience in relation to performance are contingent on the ability to attend appropriately. That is, individuals must maintain a sufficient level of awareness of their own environment and their relation to and functioning within it before an appropriate response can be activated.

Self-awareness is broadly defined as the self-descriptions that a person ascribes to oneself that influence one's actual behavior, motivation to initiate or disrupt activities, and feelings about oneself. Self-awareness can be developed over time and has been shown to be a significant factor in inferential processes and intelligence. Individuals must also have situation awareness, or knowledge of what is going around them for accurately interpreting and attending to appropriate cues in the environment.

Self-awareness and situation awareness are both multidimensional constructs composed of various psychological and cognitively oriented factors that influence processing abilities and play a critical role in resilience and performance. Emotional and cognitive awareness are two underlying mechanisms that comprise self-awareness. Emotional awareness includes awareness of one's own emotions and the emotions of others. It has been found to impact psychological resilience and coping, as well as performance. Cognitive awareness, or metacognition, is awareness and regulation of one's cognitive
functioning and the factors that affect it. Metacognitive strategies can be employed to manage uncertainty in a situation, and research indicates that using metacognitive strategies can enhance adaptability and on-the-job performance.

Attention allows individuals to accurately perceive information in the environment and can be degraded under stressful conditions, thereby limiting resilience and performance. However, some individuals have better control of their attentional focus. Individual differences in attentional control include the abilities to selectively attend to goal-relevant information while ignoring goal-irrelevant information and to divide and switch attention as needed. Although many of the underlying mechanisms related to both self- and situation awareness are biologically based, there are also aspects of attention that can be taught and developed. Training programs with continuous individualized adaptive feedback have been shown to enhance attention control and could be developed to improve cognitive and situational awareness.

Beliefs and Appraisals

Beliefs are defined as psychological states in which an individual holds a premise to be true. In contrast, cognitive appraisals represent a process through which people evaluate a situation or experience. Pre-existing beliefs play an important role in influencing the appraisal process. For example beliefs about one's ability to control the environment can impact how much confidence one has in his/her ability to accomplish an endeavor.

Appraisals have been theoretically linked with responses to stress and performance outcomes. Stress responses are conceptualized as the interaction between the perception or appraisal of demand, perceived ability to cope, and the perception of the importance of being able to cope with the demand. A person's perception and appraisal of an event help determine whether the event is experienced as threatening, and whether one feels able to adequately cope, which, in turn, can lead to decreased or increased experiences of stress. Appraisals have also conceptually been associated with performance. In general, a negative evaluation of a situation often leads to a negative outcome while positive evaluation appears to improve task performance by reducing subjective distress and possibly enhancing cognitive function in addition to improving objective performance.

Studies on Bandura's social cognitive theory provide evidence that beliefs and appraisals influence how people deal with a range of stressors. This theory focuses on the role of a person's appraisal of personal capabilities to manage events (coping self-efficacy). Findings indicated that a sense of mastery (competence and perceived control over their life) enables an individual to better handle stressors by mobilizing and sustaining active coping efforts. In addition, higher levels of mastery are associated with recovery from post-traumatic stress disorder (PTSD) and with less distress following trauma and a greater perception of societal and family support.

Evaluations of controllability and predictability of potential external threats can also play a central role in how a person responds to a potentially traumatic event. PTSD is characterized by individuals' catastrophic interpretations about the threatening nature of their environment and their self-evaluated inability to cope. In contrast, the greater the perception of predictability and controllability of a trauma, the less likely that this traumatic experience will result in persistent psychological dysfunction and disorders. The ability to predict an adverse event helps an individual generate resources to help deal with the event and provides a sense of mastery and control over a traumatic, uncontrollable experience.

Studies have also shown that a profile of beliefs or attitudes summarized as psychological hardness can influence coping appraisals, health, and performance in response to stress. This attitude profile incorporates a strong belief of control (that one can influence events), commitment (that life is interesting and meaningful), and challenge (that change is valued as a normal part of experience). Studies with military groups have shown that hardness beliefs predict successful performance in Army Special Forces candidates, fewer PTSD symptoms in response to combat stress, and improved leader performance in officer cadets. A relevant study with Dutch military personnel finds that hardness beliefs influence problem-focused coping style, which in turn affects positive coping behaviors. Thus, hardness (commitment, control, and challenge) beliefs appear to be an important individual-level factor that can influence healthy or unhealthy coping appraisals and strategies in response to a range of stressors. Additional studies suggest that leaders can have a substantial influence on hardness cognitions and related appraisals and coping behaviors demonstrated by unit members.

Multiple studies have demonstrated that self-efficacy is related to successful performance across a variety of work-related and academic tasks, problem solving, and analytic thinking. Studies on reappraisal techniques provide examples of methods for modifying these factors. For example, the ability to re-evaluate a traumatic experience and one's responses to a traumatic experience can be taught through cognitive behavioral techniques such as cognitive processing therapy (CPT), which has been used in the treatment and prevention of PTSD following traumatic exposure. Positive appraisal of a mission and an individual's role in executing it may help develop resilience instead of negative appraisal of a traumatic situation. The Penn Resiliency Program is an intervention that combines cognitive restructuring techniques, behavioral activation, interpersonal skills, relaxation and coping techniques. These activities have been associated with decreases in depressive and anxiety symptoms and increased well-being and optimism in high-risk adolescents and college students. Other studies also suggest that optimism is a valuable resilience resource in coping with stress.

Studies on stress inoculation also provide examples of techniques for enhancing mastery, self-efficacy, and a sense of control over threat. Stress inoculation, as the name suggests, attempts to immunize an individual from reacting negatively to stress exposure. This process takes place before experiencing the stressful conditions of concern. One critical hallmark of stress inoculation
is the requirement for increasingly realistic pre-exposure through training simulation. The model proposes that through successive exposure approximations, one builds a sense of expectancy and outcome that is integrated into positive cognitive appraisal and a greater sense of mastery and confidence. As previously mentioned, this habituation to anxiety may in turn diffuse affective states that would otherwise draw upon performance resources and hamper efficient information processing (as discussed previously). This cognitive-behavioral, pre-emptive approach to stress prevention has been implemented in a variety of settings to include work with the military, law enforcement, firefighters, medical personnel, and many others.

Tough realistic training that approximates actual military operations can be a key method for stress inoculation as well as other psychological benefits related to beliefs and appraisals. These potential additional benefits include a sense of psychological preparedness and self-efficacy.

Coping

A core component of resilience as it relates to warfighter performance is the ability to cope with stress. Coping can be broadly defined as thoughts and behaviors a person uses to manage the demands of stress and to maintain optimal levels of energy and capacity to work. Several coping strategies have been empirically linked to enhanced performance and resilience in both civilian stress and coping as well as military mental health research. These include problem-focused coping, emotion-focused coping, maladaptive coping, recharging, energy management, and cognitive load management.

Problem-focused coping (PFC) refers to active efforts to confront and manage situational demands and to reduce the discrepancy between a current situation and a desirable outcome. PFC has been found to be associated with greater resilience (decreased likelihood of developing mental health difficulties) in studies with both civilians and military members. Haney and Long also found evidence that PFC is associated with increased confidence and enhanced performance.

In contrast to the active nature of PFC, maladaptive coping involves attempts to cope with stress through activities that may reduce stress initially, but create greater stress in the long term. Maladaptive coping practices such as uncontrolled anger, alcohol abuse, aggression toward others, and self-harm, have been shown to be inversely related to both physical and psychological well-being.

Emotion-focused coping (EFC) involves regulating emotions through a broad range of activities such as seeking emotional support, building emotional awareness, working toward acceptance, and positive reappraisal. Civilian literature suggests that two EFC techniques in particular, structured meditation and building positive emotions, may be helpful to enhancing immunity to a variety of physical ailments (e.g., headache, and chronic pain) as well as building resilience to psychological illnesses (e.g., anxiety and depression).

In addition, as part of their program for enhancing the fitness of Army soldiers, the Army Comprehensive Soldier Fitness (CSF) program is integrating the broader and build theory of positive emotions and the Penn Resiliency Program's cognitive behavioral intervention for enhancing positive emotions such as optimism and happiness.

The next coping strategy that merits consideration is described as “recharging,” which includes practices to restore energy and counterbalance stress that can offset adverse mood and deteriorating performance. Research demonstrates that taking long recovery periods away from work is associated with decreased levels of burnout. Moreover, military research indicates that providing sufficient down time between deployments can reduce the risk of developing a range of post-deployment mental health difficulties.

In addition to breaks from work, the ability to strategically manage energy, or proactively regulate physical and emotional arousal, can promote optimal performance as well as enhance endurance. Two tools shown to be particularly effective in managing energy include relaxation and energization. These techniques utilize imagery, meditation, and muscle relaxation to produce marked changes in physiological arousal that can be harnessed to quickly and efficiently conserve as well as maximize energy when needed.

Lastly, cognitive load management techniques are mental strategies (planning, prioritizing, tracking, executing, chunking) used to achieve more efficient task performance or to manage complex or ambiguous information. One example of interference that tasks create for each other can be seen in literature related to the effects of talking on the phone while driving. Moreover, prolonged attention to tasks that are mentally taxing without sufficient breaks often results in attention lapses or vigilance decrements as well as slowed reaction time. Finally, in research examining truck drivers as well as medical personnel, accidents have been linked to decrements in vigilance as well as to sleepiness and fatigue. These negative consequences of cognitive overload may similarly arise from demands of asymmetrical warfare when large amounts of information must be processed in potentially lethal, time-sensitive, and ambiguous situations under continuous operations.

Decision Making

Decision making is defined as thoughts and behaviors used for evaluating and choosing courses of action to solve a problem or reach a goal. The operational relevance of decision making is demonstrated in the increased operational intensity, tempo, and scope, the interrelationships between humans, agencies, and technology, and the uncertainty that places increased value on the human capabilities of quick and accurate thinking, planning, acting, assessing feedback, and modifying plans. The decision making factors include problem solving, goal setting, adaptive thinking, and intuitive thinking. These factors are inter-related with those of the awareness subdomain and belief and appraisal subdomain. For example, Nezu's social problem solving model identifies orientation (beliefs and expectancies) variables such as self-efficacy as key predictors of how well problem solving tasks are completed.
Problem solving and goal setting are structured decision making factors seen in many aspects of military operations, especially systematic goal setting, and during all mission-related activities. Problem solving can be applied to identifying effective or adaptive ways of coping with problematic situations encountered in everyday living. Problem solving is a systematic and objective process of finding root causes of problems and potential solutions and acting on them. Goal setting, which can often complement problem solving, is described as a cognitive process of identifying specific, measurable, and time-targeted objectives.

Adaptive and intuitive thinking are less structured forms of decision making. Adaptive thinking includes cognitive processes that involve monitoring and adjusting to unanticipated and ambiguous circumstances to exploit advantages, minimize harm, and successfully complete tasks. As such, adaptive thinking is an umbrella term that includes current adaptive thinking and performance variables and a range of related variables such as creativity and divergent thinking. Cognitive flexibility and dialectical thinking are defined as the process of quick and confident decision making based on insights that are often below the conscious level. Intuitive decision making is especially important in an era of irregular warfare where unpredictable events such as well-hidden improvised explosive devices (IEDs) are the norm. Thus, a critical operational skill set has become intuitive decision making, where heightened danger in a naturalistic setting is quickly sensed and an appropriate response is quickly activated.

Decision making factors are related to a variety of resilience and performance outcomes. Studies have found evidence that social problem solving is related to several resilience outcomes including effective coping responses to intrapersonal and interpersonal stressors, stress experiences, anxiety, depressive experiences, and more severe clinical forms of distress such as suicidal ideation and hopelessness.

Sports psychology research provides evidence of relationships between goal setting and performance. A meta-analysis of 36 studies found an effect size of 0.36 for enhanced athletic performance associated with specific goal-setting conditions versus no-goal or “do-your-best” goal-setting conditions. In addition, the most recent comprehensive review of goal-setting interventions in sport found that of 88 studies examined, 70 studies demonstrated moderate to strong effects on a variety of sport performance measures.

Research has shown that various aspects of adaptive thinking are related to resilience and performance in response to novel and ill-defined problems. Drawing from the preliminary adaptability, or adaptive thinker profile, characterized by Svensson and colleagues in Stokes et al., research has supported a model whereby various factors associated with adaptive thinking combine to predict performance in the face of challenge and uncertainty. In the empirical study, subjects that performed best in response to an unexpected and challenging task condition displayed creative, innovative, and flexible thinking. Thus, being capable of such an adaptive response is critical for resilience in a performance context.

There is also evidence that intuition is linked to performance outcomes. Klein and colleagues found that expert chess players and firefighters had a larger base of tacit knowledge to draw from, resulting in better intuitive decisions.

Studies have also demonstrated that decision making skills are modifiable through training. Training programs that incorporate self-regulatory skills such as metacognition offer a method to enhance adaptive thinking. Skilled intuition in decision making can be enhanced through training programs that provide an environment of sufficiently high validity and adequate opportunity to practice the skill desired. Incorporating these empirically supported training characteristics in combat training simulators that replicate the extremes of combat in a secure environment (e.g., Strategic Operations, Inc. in San Diego and the Infantry Immersion Trainer at Marine Corps Base Camp Pendleton) offers a method for enhancing desired decision making skills and improving resilience in combat scenarios.

Engagement

Operationally, engagement is an important countermeasure for the constant physical and psychological demands of performance that increase the risk for disengagement and burnout. Engagement is a sustained experience of strong identification with unit members, unit, and mission characterized by high levels of energy and full involvement in mission tasks. Engagement is characterized by three factors: dedication, vigor, and flow. Dedication is the identification with work and feelings of inspiration, pride, and challenge. Vigor includes energy and energy one exhibits and being resilient. Flow, adapted from Csikszentmihalyi, is a sense of being completely involved in an activity and a sense of heightened clarity about goals, tasks, and skills to successfully meet challenges.

There is evidence that engagement is associated with resilient responses to stress, whereas lack of engagement is associated with burnout. Britt et al. found that engaged soldiers are less likely to report negative consequences under high levels of training. In contrast, burnout has been characterized as a function of decreased engagement with one’s job demonstrated in emotional exhaustion, cynicism, and decreased self-efficacy.

Studies have also found evidence that engagement is related to performance. In general, engagement of the employee at work has been associated with organizational performance outcomes. In addition, a study of over 50,000 employees found engagement was associated with performance as well as probability of retention. Flow has been found to be related to performance directly as well as motivation and task interest. Burnout has been shown to be negatively related to job performance. Specifically, workers who have higher emotional exhaustion, rate low in performance by themselves and supervisors.
A review of research supports two methods for preserving and increasing engagement. For example, engagement can be fostered by focusing on a person’s strengths. Managers’ performance has been found to be associated with their practice of matching employee talents to tasks and placing emphasis on individual strengths, which subsequently led to increases in employee engagement. A second method is ensuring a balance among resources such as job control, supervisor support, access to information, performance feedback, and social support. For example, workers who perceive sufficient recovery during leisure time report experiencing a higher level of work engagement during the next work day.

Another method for increasing engagement is using a narrative and beliefs-based approach of changing one’s personal story (e.g. more effective self-talk). Although this method has not been studied adequately, this approach can be conceptualized as integrating cognitive–behavioral techniques that are supported by evidence in related contexts. These techniques include leveraging self-talk and increasing intrinsic motivation.

**Internal Resources Across Total Force Fitness Domains**

Psychological fitness is one of the eight total force fitness (TFF) domains of mind–body functioning. The TFF domains interact to achieve a state in which the individual, family, and organization can sustain optimal well-being and performance under all conditions. Therefore, it is important to understand and leverage interactions across these domains. A sample of key interactions between psychological fitness, internal resources, and other TFF domains are summarized below.

Exercise and physical activity can affect cognitive performance and mood. Research on physical exercise has consistently demonstrated a positive impact on mood and affect. Moreover, physical fitness has a low to moderate effect on reducing anxiety and stress and decreasing depression. Finally, it has recently been shown that one hour of moderate exercise can facilitate attentional process.

There is also evidence that eating behaviors, supplement use, and preventing dehydration can potentially enhance psychological fitness for the warfighter. Research has shown that late afternoon snacks can positively affect cognitive tasks requiring sustained performance. In addition, carbohydrate supplementation has been found to enhance cognitive performance for soldiers in sustained operations in which high levels of energy are expended. Also, caffeine may provide the best example of a substance that at low doses can enhance “mental energy” related to heightened alertness, as well as self-reported vigor, efficiency, and clearheadedness with doses as low as 32 mg. In addition, studies have shown that the amino acid tyrosine can sustain cognitive performance on selected tasks in the face of acute stressors, such as sleep deprivation and cold stress. Whereas certain nutrients and food products may enhance mental capacity, dehydration (22% reduction) will adversely impact cognitive functioning.

Social fitness is also inter-related with different aspects of psychological fitness including attention to social cues, regulation of emotion, social problem solving, and adaptability and flexibility to changing social and cultural rules. For example, beliefs and appraisals can set expectations and influence one’s ability to develop and make use of social resources. Likewise, beliefs and appraisals associated with psychological hardiness are thought to enhance one’s ability to both develop and utilize effectively social support systems. There is also evidence that teaching people how to use social support and individual mastery resources can enhance coping skills and subsequently lead to a reduction in emotional exhaustion.

There is also evidence that spiritual and psychological fitness are inter-related. Two examples include (1) behaviors related to spiritual practice and (2) thoughts about purpose and meaning. Several randomized controlled trials (RCTs) have indicated that mindfulness, which can be used as a form of spiritual practice, and body–mind training can improve attention and self-regulation. For example, Lutz and colleagues found that 3 months of intensive training in focused attention and meditation enhanced attentional stability, reduced mean reaction time, improved target detection times, and increased efficiency by reducing task effort. These practices have also been associated with an enhanced ability to positively reframe the stressors of deployment and recover more quickly from mental and psychological stress, protection against functional impairments in working memory capacity, and enhancement resilience and recovery following combat. In addition, the spiritual fitness domain of “purpose and meaning” overlaps with the psychological fitness domains of beliefs and appraisals and coping. Evidence shows that cultivating purpose and meaning, which includes ability to find religious significance, improves coping ability. For example, finding positive meaning is associated with greater acceptance of difficult situations and opportunities for posttraumatic growth leading to spiritual resilience as well as better psychological adjustment.

**External Resources**

External resources are environmental resources that can serve as aids to (1) achieving work goals, (2) reducing job demands and their associated physiological and psychological costs, and (3) stimulating personal growth and development. These resources support the individual’s ability to thrive. The military provides a multitude of external resources that target resilience and prevention, promote healthy behaviors, and enhance performance. Leadership, unit, family, training, policy, and research serve as key external resources for strengthening individual performance and resilience.

Leadership has been shown to be the most influential external resource because it impacts multiple areas of a service member’s life. Research indicates that effective leadership includes communicating and modeling constructive beliefs/behaviors, reducing service member stress by providing clear
expectations for performance, enhancing service member confidence and performance by ensuring appropriate education and training, providing constructive feedback, creating psychological safety, and empowering service members by trusting them with complete tasks independently. Leadership is pervasive throughout a unit and affects all aspects of the military operational environment. It is thought that leadership can be extremely detrimental when it is bad, but when it is good it can serve as a protective factor to developing mental illness and can be incredibly effective by creating a climate of trust, growth and development, which can enhance performance.

The unit is the environment in which the individual can grow, develop, and strengthen. No service member can perform the mission without the unit. Units provide esprit de corps, motivation, satisfaction, mutual friendship and caring, shared goals, teamwork, group pride, prestige, and status. If service members are to be resilient, they must be able to draw not only upon their own internal reserves, but those of their unit as well.

Training, policy, and research are three key external resources that also support individual growth and development. From the first day a recruit enters the military, the recruit is trained to become a member of a team. Services should continue to explore opportunities to integrate psychological fitness training into life-cycle training.

Policy fulfills multiple functions. It establishes standards and expectations for productive and healthy activities; creates a safe and supportive work environment; provides a structure for compliance with legislation affecting the employer–employee relationship; establishes a basis for behavioral accountability, and provides structure that may help offset uncertainty.

In the Department of Defense (DoD), there is a wide range of programs for increasing resilience, but limited outcomes data. More information about the variety of resilience programs can be found in an overview of DoD resilience programs by Bowles and Bates. In addition, a forthcoming RAND report on resilience, which is overseen by the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE), will include data about existing DoD programs and their consistency with research evidence on resilience.

One final important external resource is knowledge about resilience resources that can be gained from systematic environmental scans, gaps analyses, and program evaluations. The DCoE is also sponsoring several program evaluation pilots of leading resilience-building programs to identify key principles and components for each program. These studies will be conducted with military populations and will utilize operational outcome metrics.

**BOTTOM LINE FOR THE LINE**
The MDR model can provide military leaders and supervisors with a framework to leverage internal and external resources for assessing, supporting, and enhancing the psychological fitness of their unit members and those they lead. This can be illustrated with examples for the psychological fitness domains of beliefs and appraisals, coping, and engagement.

Leaders can influence beliefs and appraisals associated with enhanced resilience and performance. For example, leaders can model optimism and self-confidence for their unit members. In addition, leaders can enhance self-confidence by creating training and job performance scenarios that are likely to challenge but not overwhelm unit members, providing constructive feedback for substandard performance, and providing recognition for well-performed tasks.

Leaders can target multiple aspects of the coping domain. They can target specific skill areas such as managing information and task cognitive overload by encouraging and modeling ways to effectively managing mental workload by prioritizing tasks. In addition, they can emphasize the importance of minimizing multitasking as much as possible, both for improved performance and conserving mental energy by reducing task switching. They can also encourage the preservation and restoration of overall energy and cognitive functioning by providing information and guidance to support healthy sleep practices and limit disruptive influences.

Leaders can also leverage the engagement subdomain to lead to enhance resilience and performance. Leaders can facilitate engagement by learning about each unit member's strengths, maximizing how unit members' strengths are used in different jobs and parts of the mission, and encouraging them to develop areas of strength. In a similar way, leaders can increase engagement by talking with unit members to understand what they value and how they could approach parts of the mission that could provide them meaning and intrinsic motivation. Leaders can also help unit members find greater understanding and meaning in difficult experiences as a way to stay connected with others and for a sense of purpose.

**DISCUSSION**
This article presents a comprehensive and integrated model of psychological fitness based on an assessment of current and future operational demands and the best available evidence about psychological fitness variables. The intent of the article was to provide an initial framework with which to comprehend and measure psychological fitness.

Recommended next steps include ways to address some of the inherent challenges identified by this review. These challenges included: (1) subjective and multifactorial nature of psychological processes, (2) context-specific nature of relationships between variables, (3) variability of the evidence supporting the role of different variables and, (4) lack of operational and population-based metrics.

First, it will be important to continue to develop objective and complementary measures to counter the subjective nature of these variables. Models and studies may benefit from increased multidisciplinary research within and outside of the military mental health sector as well as the civilian social science arenas as research moves toward integrating our understanding of the interactions between mind and brain.
and increasing our understanding of the interactions that span biological, physiological, cognitive, emotional, behavioral, social, and spiritual functioning.

Second, program implementation and research efforts need to account for the role of contextual factors, especially in terms of differences across services and components, individuals and groups, and specialties. One way of understanding contextual factors is to seek input from a variety of service members, units, services, and occupational communities and to take steps to better understand their operational context.

Third, given the limited conclusive empirical evidence on psychological fitness programs in military contexts, this review is advocating two concurrent approaches to program development, evaluation, and research to answer the critical question of "what works for whom?" The first is a practical approach to identify the most promising programs in the near term before stronger evidence about outcomes can be established. This practical approach includes integrating available empirical evidence with evaluations of operational relevance and feasibility, and recommendations from subject matter experts. Then pilot programs could be systematically implemented and evaluated in the military. At the same time, individual programs could enhance their own program evaluation efforts. Many programs could benefit by enhancing their program evaluations efforts to gain more understanding of program effectiveness as well as collect data for process improvements.

Finally, the DoD could benefit from an integrated set of population-based measures of psychological fitness variables. This type of database could provide our senior leaders with an ongoing assessment of total force levels of functioning and trends over time, a view of the general population functioning across multiple metrics, and a safeguard against potentially misleading interpretations when looking at single metrics. There are multiple examples of population-based metrics, each with the potential to inform an enterprise wide approach for the DoD. The DoD Suicide Event Report collects over 250 data points for suicide completions across the DoD. The Health Affairs Well-Being of the Force metrics pulls and integrates data from multiple health and personnel databases. Two other programs that integrate data from multiple pre-existing datasets are the Naval Health Research Center's Millennium Cohort study and the U.S. Army Public Health Command's (provisional, formerly U.S. Army Center for Health Promotion and Preventive Medicine) Army Behavioral Health Integrated Data Environment (ABHIDE). The Army CSF is also employing a measure called the Global Assessment Tool that is designed to assess each of the fitness domains and includes a survey completed by Army members. Yet another approach is the Gallup approach of daily random sampling of well-being measures. These different approaches for population-based assessment and tracking of psychological fitness domains could potentially be leveraged enterprise wide in support of readiness and force protection.

The MDR model can provide an integrated and systemic framework of psychological fitness for proactive and enterprise wide population-based applications such as surveillance and monitoring the fitness of the force. In addition, the MDR model can also enhance program identification, information sharing, gap analyses, program development, and program evaluation of psychological fitness resources across services and specialty communities. In these ways, the framework will hopefully provide the next step in facilitating collaboration, effective and efficient use of resources, and synergy in DoD efforts to support the optimal psychological fitness of our total force.

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