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The RAND Online Measure Repository for Evaluating Psychological Health and Traumatic Brain Injury Programs

The RAND Toolkit, Volume 2

Joie D. Acosta, Kerry A. Reynolds, Emily M. Gillen, Kevin Carter Feeney,
Carrie M. Farmer, Robin M. Weinick



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Prepared for the Office of the Secretary of Defense and the Defense Centers of Excellence
for Psychological Health and Traumatic Brain Injury

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Preface

Throughout the past decade, U.S. military forces have been engaged in extended conflicts in Iraq and Afghanistan. While most military personnel cope well across the deployment cycle, increases in stress associated with rapid operational tempo may raise the risk for mental health challenges. During this time, the U.S. Department of Defense (DoD) has implemented numerous programs to support service members and their families as they cope with these challenges. These programs address various components of biological, psychological, social, spiritual, and holistic influences on psychological health along the resilience, prevention, and treatment continuum and focus on a variety of clinical and nonclinical concerns. In response to this proliferation of programs, the Assistant Secretary of Defense for Health Affairs asked the RAND National Defense Research Institute (NDRI) to develop a set of tools to support ongoing assessment and evaluation of the DoD portfolio of programs that address psychological health and traumatic brain injury (TBI).

This report describes the development and uses of one of these tools, the RAND Online Measure Repository (ROMR). The ROMR is an online searchable database containing measures related to psychological health and TBI that was created to support monitoring and evaluation of such programs. This report describes the rationale, purpose, and uses of the ROMR, as well as the content of the repository itself. This report will be of particular interest to DoD officials responsible for programs related to psychological health and TBI, and should also be helpful for health policy officials within the U.S. Department of Veterans Affairs (VA) as well as others responsible for evaluating similar programs in nondefense-related settings. The ROMR is the second part of a toolkit that RAND is developing to support the evaluation of this DoD portfolio of programs. A link to the ROMR is available at the “Innovative Practices for Psychological Health and Traumatic Brain Injury” web page;¹ other tools in this series will be made available at this site as they are prepared.

This research was sponsored by the Office of the Secretary of Defense and the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury and conducted within the Forces and Resources Policy Center of the RAND National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the Unified Combatant Commands, the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community.

For more information on the RAND Forces and Resources Policy Center, see <http://www.rand.org/nsrd/ndri/centers/frp.html> or contact the director (contact information is provided on the web page).

¹ <http://www.rand.org/multi/military/innovative-practices.html>

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Summary

More than 2.2 million service members have deployed to support military operations in Iraq and Afghanistan during the past decade (Levin, 2011). Among service members who had been deployed to Iraq and Afghanistan as of October 2007, approximately one-fifth reported current symptoms consistent with posttraumatic stress disorder (PTSD) or major depression, and about the same number reported having experienced a probable traumatic brain injury (TBI) while deployed (Tanielian and Jaycox, 2008). DoD has implemented numerous programs, interventions, and policies to address the increased concerns about PTSD and TBI and their effects on service members and their families. These programs focus on reducing the incidence of mental health problems via efforts to improve readiness and resilience; providing information, connecting individuals to care, and encouraging help seeking; identifying individuals with mental health concerns or TBI; providing or improving clinical services, or offering mental health services in nontraditional locations to expand access to care; providing a wide range of training and educational activities; and supporting service members and their families during times of military transition (Weinick et al., 2011).

As these efforts have proliferated, it has become increasingly important to evaluate their effectiveness. To support the design and implementation of such program evaluations, we developed an online repository of measures (the RAND Online Measures Repository, or ROMR) that indexes and describes measures related to psychological health and TBI that have been used in both civilian and military populations. Specifically, we identified measures of primary importance to TBI including measures of cognition, executive functioning, and memory. We have also identified measures of primary importance to psychological health in the following domains: PTSD, depression, anxiety, suicidal ideation, and resiliency. We also identified measures relevant to military units such as unit cohesion and force readiness and preservation.

The ROMR is the second part of a toolkit that RAND is developing to support the assessment and evaluation of the DoD portfolio of programs. A link to the ROMR is available at the “Innovative Practices for Psychological Health and Traumatic Brain Injury” web page;¹ other tools in this series will be made available at this site as they are prepared.

Focus of This Report

This report describes the ROMR, and explains how it was developed and how it can be used. Chapter One introduces the report by describing the need for an online searchable database

¹ <http://www.rand.org/multi/military/innovative-practices.html>

of measures to support monitoring and evaluation of psychological health and TBI programs. Chapter Two describes the development of the ROMR, including the rationale for its creation and the method used to identify measures and extract relevant information. Chapter Three provides a description of the measures included in the ROMR. Chapter Four describes the potential benefits of the ROMR to agency officials, program managers, mental health professionals, and those interested in program evaluation.

How the RAND Online Measure Repository Was Developed

The ROMR was developed using a series of literature searches, journal reviews, and expert recommendations to identify measures of anxiety, depression, PTSD, resiliency, suicidal thoughts, unit cohesion, force readiness and preservation, and measures related to TBI. Relevant articles were coded using a standardized abstraction procedure guided by supporting documents (e.g., glossary of terms) and procedures (weekly discussion of coding issues). We focused on sources that described the development, validation, and/or psychometric properties of one or more measures. From each source, we abstracted information about the measure's domains, administration, scoring, length, acquisition, and psychometric properties, as well as identified the populations to which the measure had been applied. Once information on measures was abstracted and reviewed, the database used for coding was converted into a searchable online tool.

Measures Included in the RAND Online Measure Repository

We identified 174 measures including a wide array of measures of depression (71), PTSD (49), and anxiety (41). Several measures related to exposure to traumatic events (21), stress and coping (16), resiliency (15), suicidal thoughts (16), and TBI (e.g., cognition functioning and speech) (20) were also identified. Fewer measures of force readiness (4) and unit cohesion (10) were identified, suggesting that this may be a less developed field of measurement. Eighty-four percent of the measures identified had been used with adults, and 23 percent had been used with children. The majority of measures were self-administered questionnaires. It is important to note that the purpose of the ROMR is to support program evaluation, rather than clinical care, so we have not included measures related to diagnosis of mental health disorders or TBI.

The measures most commonly used with military populations were those related to depression and PTSD. However, only about half of the total measures identified had ever been used with a military population. Additional work is needed to validate many of these measures in military populations, especially measures with clinical significance, no-cost measures of anxiety, and measures for evaluation of programs related to TBI. As updates are made to the ROMR, additions may also be considered to continue building areas of the ROMR where fewer measures were identified. These areas include measures of leadership, force readiness, unit cohesion, and family support.

Potential Uses of the RAND Online Measure Repository

The ROMR has a number of potential uses across a wide variety of programs and professionals.

Select Measures for Program Evaluation or Research Related to Psychological Health and Traumatic Brain Injury

The primary purpose of the ROMR is to help program evaluators select appropriate measures for use. Program evaluators, researchers, and those responsible for program implementation can use the repository to identify specific measures across a wide variety of domains related to TBI including cognition, executive functioning, and memory, and psychological health including depression, anxiety, PTSD, stress and coping, and resiliency, among others.

Select Measures for Dual Use by Both Clinicians and Program Evaluators or Researchers

The ROMR includes information on available clinical cutoff scores used to determine when individuals require clinical services, to inform clinical case planning, or to screen individuals who may be at risk for developing a psychological disorder. Measures with clinical meaning may be useful to both clinicians providing novel interventions or other services specifically targeting clinical outcomes and to the evaluators or researchers working with these clinicians to determine the effectiveness of their services.

Identify Core Outcome Measures for Evaluating Similar Programs

Organizations or individuals responsible for a group of programs could consider using the ROMR to identify and endorse a specific set of outcome measures that are both reliable and valid for the populations served across a variety of domains. Endorsing a specific set of outcome measures could allow for consistency in tracking core outcomes or indicators of effectiveness across an array of programs.

Determine Need for Additional Reliability and Validity Testing of Measures with Military Populations

The ROMR's assessment of measures currently used by program evaluators and researchers can be helpful in determining where more work needs to be done to establish reliability and validity of measures with military populations. Additional psychometric development is particularly important for domains such as force readiness, where only a few measures exist, and domains such as anxiety, where there has been little testing with military populations.

Conclusion

Valid and reliable measures of psychological health and TBI-related constructs are needed to be able to monitor and evaluate programs that address these issues. The ROMR is a valuable tool that responds to this need by providing an online and searchable database of measures related to psychological health and TBI.

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Abbreviations

DCoE	Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury
DoD	U.S. Department of Defense
GAO	U.S. Government Accountability Office
PTSD	posttraumatic stress disorder
ROMR	RAND Online Measure Repository
TBI	traumatic brain injury

Introduction

Our nation's all-volunteer military force continues to endure the longest era of conflict in its history. The past decade has been characterized by frequent deployments and exposure to combat-related trauma, which have increased the risk of postdeployment psychological health problems among the more than 2.2 million troops that have deployed since 2001 (Levin, 2011). Concerns have been raised about the incidence of posttraumatic stress disorder (PTSD), major depression, traumatic brain injury (TBI), and suicide among returning service members. Research has shown that between 15 and 20 percent of returning service members reported symptoms consistent with current PTSD or major depression. Similarly, about 20 percent reported having experienced a probable TBI while deployed (Tanielian and Jaycox, 2008). These medical and psychological health issues affect both service members and their families (Tanielian and Jaycox, 2008; Chandra et al., 2010).

In response to growing concerns about the effects of deployment on service members, the Department of Defense (DoD) Task Force on Mental Health recommended that DoD implement an array of programs to address emerging psychological health issues (Department of Defense Task Force on Mental Health, 2007). In response to these recommendations, DoD has implemented programs, interventions, and policies to improve readiness and resilience, to improve awareness and understanding of psychological health issues and TBI, and to increase access to care and enhance existing services. Programs and interventions focus on:

- identifying individuals with psychological health issues or TBI
- encouraging help-seeking behavior
- providing support to service members during times of military transition
- providing or enhancing existing clinical services programs
- providing care in nontraditional locations
- providing training and education activities to improve the capacity of mental health providers. (Weinick et al., 2011)

To help DoD appropriately monitor the effectiveness of these programs, we developed the RAND Online Measure Repository (ROMR) to increase the information available on measures that can support program evaluation in these areas. The ROMR is the second part of a toolkit that RAND is developing to support the evaluation of the DoD portfolio of programs. A link to the ROMR is available at the "Innovative Practices for Psychological Health

and Traumatic Brain Injury” web page;¹ other tools in this series will be made available at this site as they are prepared.

The Need for a Repository of Measures on Psychological Health and Traumatic Brain Injury to Evaluate Military Programs

The U.S. Government Accountability Office (GAO) defines program evaluation as individual systematic studies conducted periodically or on an ad hoc basis to “assess whether the program works . . . and identify adjustments that may improve its results” (GAO, 2005, p. 3). The purpose of program evaluation is to determine if a program is a worthwhile investment and is achieving its intended impact, and to provide accountability to program funders and the public. Ongoing evaluation can serve as an early warning system for program funders to identify adjustments to program approaches that may improve their results.

Although program evaluations may take many forms, a key piece of any evaluation design is the careful selection of measures that are appropriate for the population served by the program (e.g., service members and spouses or children of service members) and for the outcomes being targeted for improvement (e.g., reducing depression, building resiliency). Measures assess “the type or level of program activities conducted (process), the direct products and services delivered by a program (outputs), and/or the results of those products and services (outcomes)” and can be in the format of a questionnaire or inventory, structured or unstructured interview, or observation rating tool (GAO, 2005, p. 4).

One key challenge in conducting rigorous evaluations is identifying and selecting appropriate evaluation measures. The creation of a single database of potential measures with information about their use can support program evaluation activities by reducing the burden on program staff to identify and select appropriate measures.

Existing measure repositories are limited because they lack information on whether measures have been used with a military population, do not include measures related to TBI, or require a fee for usage (Chapter Two contains a review of existing repositories). To address these issues and support the design and implementation of evaluations of psychological health and TBI programs, we developed the ROMR. This publicly available online repository indexes and describes measures related to psychological health and TBI that have been used in both civilian and military populations, as well as measures that are specifically relevant to military units (e.g., unit cohesion, force readiness and preservation). We identified measures of primary importance to TBI including measures of cognition, executive functioning, and memory. We have also included measures of primary importance to psychological health in the domains of PTSD, depression, anxiety, military unit measures, suicidal ideation, and resiliency. It is important to note that the purpose of the ROMR is to support program evaluation, rather than clinical care, so we have not included measures related to diagnosis of TBI.

The ROMR contains 174 measures related to psychological health and TBI, including descriptions of each measure, information about their development and uses (e.g., whether they have been used with a military population), as well as documentation on their reliability and validity and other characteristics (e.g., length of measure, cost). Measure descriptions are indexed using an online interface (accessible at the “Innovative Practices” web page) that allows

¹ <http://www.rand.org/multi/military/innovative-practices.html>

repository users to search for specific measures based on content-relevant keywords or other characteristics of each measure (e.g., whether the measure has published psychometrics) and to compare measures side by side. Users can search by keyword or other features and can conduct side-by-side comparisons of measures to identify the best options for use in program evaluation. The ROMR provides a targeted, user-friendly tool to support the design and implementation of evaluations of new or existing programs related to psychological health and TBI. The online interface is intended as the most useful way to access the cataloged information about each measure.

This report provides documentation on the ROMR to help potential users understand its creation and to explain how it can be used. Chapter 2 describes the development of the ROMR, including the method we followed in identifying measures and extracting relevant information. Chapter 3 provides a description of the measures included in the ROMR. Chapter 4 describes the potential benefits of the ROMR to agency officials, program managers, mental health professionals, and those interested in program evaluation.

A series of appendixes specifies the contents of the ROMR, provides additional detail on the development of ROMR, and includes supporting materials to aid potential users. Appendix A contains a brief description of existing measure repositories that were reviewed to inform the development of the ROMR. Appendix B describes the detailed literature search strategies used to identify relevant measures. Appendix C displays a comprehensive list of the references consulted in developing the ROMR, and Appendix D lists the measures included in the ROMR. Appendix E describes in detail how information on each measure was abstracted by RAND staff, and Appendix F contains a glossary of relevant terms. Appendix G provides information to help users interpret reliability and validity information contained in the ROMR. Finally, a brief guide for how to access and search the ROMR comprises Appendix H. Complete information on each measure included in the ROMR is available at the “Innovative Practices” web page.

Development of the RAND Online Measure Repository

The first step in developing the ROMR was to conduct a search of existing measure repositories, which were identified through a web-based search as well as personal communication with experts in the fields of psychological measurement and military mental health. This process identified eight repositories that contained measures related to TBI, psychological health at the individual or unit level, or resiliency: the ADAI Substance Use Assessment Instrument Library; the Buros Institute of Mental Measurements; the Center for Outcome Measurement in Brain Injury; the Compendium of Assessment and Research Tools; the ETS Test Collection/Carl C. Brigham Library; Measuring Violence-Related Attitudes, Behaviors, and Influences Among Youths: A Compendium of Assessment Tools, 2nd ed.; the National Center for the Study of PTSD; and the Patient Reported Outcome and Quality of Life Instruments Database.

We reviewed the eight existing repositories to determine the type of measures they included and examined several features, including access fees, inclusion of measures used with military populations, information about obtaining measures, and psychometric properties described by the repositories. We found that each had a number of challenges that would limit its potential direct use for evaluating military programs. For example, some repositories included information on how to obtain the measure or the psychometric qualities of the measure, but did not contain information on whether the measure had been used with a military population. We could not locate a repository that included a combination of measures related to TBI, psychological health at both the individual and unit levels, and resiliency, and we found only one repository that contained information about whether the measures had been used with a military population. Furthermore, many military programs focus on improving the psychological health of military family members, but it was difficult to find measures for both adults and children within many of the existing repositories. Appendix A describes the existing measure repositories in greater detail.

Developed to address the limitations of existing repositories, the ROMR differs from other available databases in the content area covered, populations targeted, and the audience for which it was designed. The ROMR focuses on measures related to TBI for adults and measures related to psychological health for adults, adolescents, and children in both civilian and military populations. In addition, while existing databases may provide some content free of charge, the entire content of the ROMR is publicly available at no cost. Finally, the ROMR is designed for the purpose of program evaluation, with measures focused on outcomes relevant to TBI including cognition, executive functioning, and memory, and measures focused on mental health, including depression, PTSD, and resiliency. These features are designed to improve user-friendliness and efficiency by reducing the examination of less relevant materials

and increasing quick identification of the most relevant measures. Table 2.1 compares ROMR features to other existing measure repositories.

Once we determined the required features of the ROMR, we began a systematic process to identify measures related to TBI, psychological health, unit cohesion, and resiliency needed to populate the repository.

Identifying Potential Measures

We searched the peer-reviewed literature to identify measures of anxiety, depression, PTSD, TBI (e.g., cognition, executive functioning, memory), resiliency, suicidal thoughts, unit

Table 2.1
Key Features of ROMR Compared to Other Repositories

Key Features	Allows search for measures used with military populations	Free	Includes information on how to obtain the measure	Includes psychometric qualities of measure	Includes multiple measures of psychological health (individual level)	Includes measures of psychological health (unit level)	Includes measures related to TBI	Includes measures of resiliency
RAND Online Measure Repository	✓	✓	✓	✓	✓	✓	✓	✓
ADAI Substance Use Assessment Instrument Library		✓	✓	✓				
Buros Institute of Mental Measurements			✓	✓	✓			
Center for Outcome Measurement in Brain Injury		✓	✓				✓	
Compendium of Assessment and Research Tools (CART)		✓	✓		✓			
ETS Test Collection/ Carl C. Brigham Library			✓	✓	✓		✓	
Measuring Violence-Related Attitudes, Behaviors, and Influences Among Youths: A Compendium of Assessment Tools, 2nd ed.		✓	✓	✓	✓			
National Center for the Study of PTSD	✓	✓	✓		✓			
Patient Reported Outcome and Quality of Life Instruments Database (ProQolid)		Free for basic/ Fee for advanced		Advanced version only	✓			✓

cohesion,¹ and force health readiness.² To identify relevant articles, we began with keyword searches of content-relevant databases, followed by title and abstract review. Additional measures were identified during article abstraction and by content-area experts. We focused on sources that described the development, validation, and/or psychometric properties of one or more measures.

Literature Search

We conducted keyword searches in three databases that focus on substantive areas pertaining to mental health and psychology, medicine, and traumatic stress: PsychINFO (psychology), PubMed (medicine), and the Published International Literature on Traumatic Stress database (PILOTS, traumatic stress). We also searched for articles published in the last two years in the journal *Military Psychology*.

Multiple searches were conducted in each database to ensure that references from all relevant substantive domains were included. We restricted our search to articles published in English during or after 2000, and excluded editorials, letters, and commentaries. Search strategies varied for each substantive domain and were based on the constraints of each electronic database. However, most searches were variations on a basic three-category format: The first category focused on keywords related to the substantive domain, the second category focused on keywords relevant for establishing psychometric properties, and the third category focused on keywords related to the measurement techniques relevant to that domain. Details of the search strategies can be viewed in Appendix B, and an example follows in Table 2.2.

Expert Consultation

The content area for some of the measures included in the repository represent emerging areas of research—specifically, unit cohesion and force health readiness. For these areas, content area experts were asked to identify additional relevant articles or measures that may not have been identified in initial literature searches.

Review of References

Additional articles and measures were identified by reviewing the references in articles identified for inclusion in the repository.

Selecting Measures from the Literature Search to Include in the Repository

Title and Abstract Review

From the list of articles identified during our literature search, we reviewed titles to remove those that were clearly irrelevant to the current project. For the remaining articles, we reviewed

¹ Unit cohesion is defined as the bonding together of members of an organization in such a way as “to sustain their will and commitment to each other, their unit and the mission” (Powell et al., 2006).

² Force health readiness is defined as the ability of U.S. military forces to “optimize and protect the psychological and physical health of service members and their families through policies and programs across all phases of deployment.” Force health protection and readiness is also referred to as force protection, force preservation, or force preservation and readiness (Office of the Deputy Assistant Secretary of Defense, 2011).

Table 2.2
Keyword Categories: Example Search Strategy for TBI Articles in PubMed

Category 1: Substantive Domain	Category 2: Psychometric Properties	Category 3: Measurement Techniques	
<ul style="list-style-type: none"> traumatic brain injury 	<ul style="list-style-type: none"> validation studies as topic [MeSH] valid* reliab* 	<ul style="list-style-type: none"> survey surveys instrument instruments questionnaire questionnaires psychiatric status rating scales measure measures 	<ul style="list-style-type: none"> psychometrics aptitude tests digit span language tests hearing tests neuropsychological tests retention [MeSH] psychomotor performance sociometric techniques

NOTE: The asterisk (*) denotes a wildcard search. MeSH is an abbreviation for medical subject heading.

abstracts and categorized articles into three groups: articles that were clearly irrelevant (e.g., addressed a topic area not covered in the ROMR), articles that should move forward to full-text review, and those that were questionable. Questionable articles were discussed among the team and a decision was made to include or exclude them. An electronic record of inclusion and exclusion criteria was updated as decisions were made.

Full-Text Review for Inclusion and Exclusion Criteria

Articles identified for full-text review were carefully examined for information relevant to inclusion and exclusion criteria. Articles that met inclusion criteria were then coded according to the process outlined in Table 2.3.

Articles Identified During the Literature Search

The database searches and review of *Military Psychology* yielded 2,083 unique sources. Title review excluded 1,350 articles. Of 733 articles that underwent abstract review, 471 were excluded. Another 80 articles were excluded during full-text review. The title and full-text reviews to determine inclusion/exclusion were conducted by a librarian, two research assistants, and two RAND researchers with expertise in psychology, economics, and health policy. The primary reason for exclusion during full-text review was that the article addressed a foreign population, which typically was not revealed in the title or abstract. All remaining articles ($n = 290$) were included in the review. A flowchart depicting the identification and exclusion of references is shown in Figure 2.1.

Although 290 articles were ultimately included, multiple articles often addressed the psychometric properties of a single measure. Furthermore, some articles contained information about multiple measures. The final ROMR contains 174 measures. Appendix C contains a list of the articles reviewed, and Appendix D contains a list of the unique measures included in the database.

Table 2.3
Inclusion and Exclusion Criteria

Inclusion Criteria

- Contained a reference to at least one of the following eight domains:
 1. Depression, including dysthymia, anhedonia, bipolar disorder, cyclothymia, and bereavement but excluding postpartum depression
 2. Anxiety, including general anxiety, social anxiety, obsessive compulsive disorder, panic disorder, phobias, and worry but excluding specific anxieties such as fear of pain, fear of death, fear of hospitalization, etc.
 3. PTSD, including measures of exposure to trauma, internalizing and externalizing behaviors associated with trauma, symptoms of PTSD, acute stress reaction, acute stress disorder, combat and operational stress reaction, reexperiencing traumatic events, avoidance of place/things reminiscent of trauma, emotional numbing, and increased arousal
 4. TBI, including diagnosis of insults, head injuries, head trauma, closed head wounds, concussions, and other acquired brain trauma, cognitive and motor abilities
 5. Suicidal thoughts, including ideations, intent, and fantasies
 6. Resiliency, including coping with stress and hardiness
 7. Force health readiness
 8. Unit cohesion, including unit support.
 - Addressed some aspect of psychometric evaluation of the focus measure (e.g., calculation of scale reliability, test of validity)
 - Focused on one or more of the following three subpopulations: (1) U.S. and limited international military populations; (2) major U.S. racial/ethnic groups (e.g., white, African American, Latino American, etc.); (3) general inpatient populations at hospitals, psychiatric hospitals and rehabilitation facilities. Search parameters were extended to include British, Canadian, Australian, and Israeli military populations because there was limited literature on U.S. military populations.
-

Exclusion Criteria

- Editorials, letters, and commentaries
 - Published in a language other than English
 - Focused solely on international populations with the exception of British, Canadian, Australian, and Israeli military populations
 - Focused solely on individuals over age 50 or retirees, as well as studies where the sample population had a mean age of 50 or above. The majority of active duty service members are under 50, consequently measures created for use with individuals over 50 would not be applicable to the majority of active duty service members.
 - Examined a specialized subpopulation (e.g., cancer patients with depression, patients with chronic pain, or specific inpatient populations)
 - Addressed TBI solely in children under 18 because TBI is an injury primarily acquired by service members in theater, not their children.
-

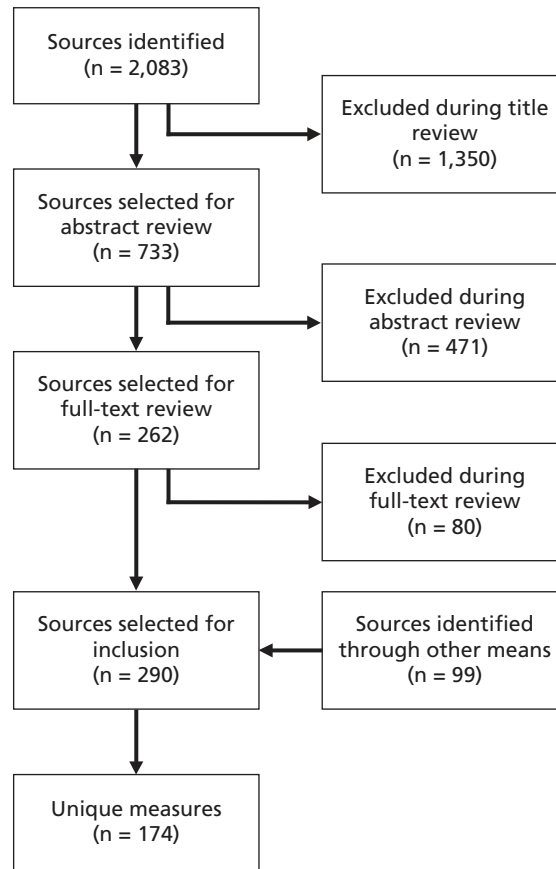
Abstracting Consistent Information on Each Measure

Article Coding and Data Abstraction

The first two authors and two coders abstracted the information necessary for populating the ROMR from each included article. Each piece of abstracted information represents a characteristic or quality of the measure that potential users might find helpful during measure selection. Abstracted information included the following:

- **Substantive domains:** as many domains as were relevant to the measure; for example, a measure assessing symptoms of both anxiety and depression

Figure 2.1
Flow Chart for Literature Search



NOTE: More than one measure may be addressed in a single article, and more than one article may address a specific measure.

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- **Populations:** information about the age groups (adult or child) with which the measure has been used and whether or not the measure has been used with a military population
- **Measure administration:** including the method of administration (e.g., questionnaire, interview), the person who administers the measure (e.g., self, trained clinician), and the respondent (e.g., self, caregiver)
- **Scoring:** information about subscales, response options, and the presence or absence of a clinical cutoff score
- **Measure length:** number of items in the measure
- **Psychometric properties:** including reports of reliability and validity
- **Measure developer:** information about who developed the measure and the reference for the original publication of the measure if available

- **Measure acquisition:** how to obtain the measure and if there is a fee to obtain or use the measure.

Further detail on abstracted information is available in the data abstraction form in Appendix E.

Procedure for Coding Articles

Coders received initial instruction on the use of the data abstraction form and content to be included for each domain of interest, and then each coded five articles, which were reviewed by this report's first two authors. This process was repeated until the coders successfully coded articles independently and with a high degree of reliability among team members. The team regularly reviewed questions about coding; Appendix F is a glossary of terms developed by the team to support the coding effort. Once all articles were coded, the first two authors reviewed all measure descriptions for completeness of information and clarity.

During this review, we found that while the search strategy identified a wide range of measures currently in use, it failed to yield psychometric information for 55 of the measures and did not adequately distinguish whether each of these measures had ever been used by a military population for over half of the measures. To augment these two domains, authors engaged the existing team and a quantitative psychologist with expertise in psychometrics to conduct a second, more targeted search of the same databases used in the initial search strategy, relaxing the inclusion and exclusion criteria. To locate additional psychometric information on measures for which information was missing, a search was conducted using the name of the measure and the keywords *reliability*, *validity*, and *psychometrics*. To augment information on whether each measure had ever been used with a military population, the team conducted additional literature searches using keywords including the name of the measure and *Army*, *Navy*, *Marine Corps*, *Air Force*, *service member*, and *military*. This targeted search produced additional information that allowed us to determine, for all measures, whether they had ever been used with a military population. We collected additional information about use with a military population for 47 measures, and about psychometric evidence for an additional 43 measures. The final set of all entries can be viewed in the online ROMR, at the "Innovative Practices" web page.

Characteristics of Measures in the RAND Online Measure Repository

We identified 174 measures including a wide array of measures of depression (71), PTSD (49), and anxiety (41). Several measures related to exposure to traumatic events (21), stress and coping (16), resiliency (15), suicidal thoughts (16), and TBI (20) were also identified. Fewer measures of force readiness (4) and unit cohesion (10) were identified, suggesting that this may be a less developed field of measurement. Eighty-four percent of the measures identified had been used with adults, and 23 percent had been used with children.

In this chapter, we describe the characteristics of the measures included in the ROMR based on their use in military populations, availability (cost), breadth (covering a single domain or multiple) and length, mode of administration, clinical significance, and psychometrics. Appendix D contains a complete list of the measures included in the repository.

Use by Military Populations and Cost

Two features of the repository are particularly useful for evaluating programs for military populations. First, determining whether a measure has been used in military populations shows that it has been tested already as directly applicable to those populations. Second, understanding whether there is a cost associated with using a particular measure can help researchers and program evaluators plan for resources that may be needed to use the measure. Programs with more limited resources may wish to select measures that are available at no cost.

Table 3.1 summarizes the number of measures, by domain, that have been used with military populations, and the number available at no cost. As previously mentioned, measures of depression (54), PTSD (33), and anxiety (26) were among the most common measures identified and were frequently available at no cost. Similarly, measures of depression and PTSD were the most commonly used with military populations. Although only 10 measures of unit cohesion were identified, as expected, all had been used with military populations.

Breadth and Length

When selecting measures for program evaluation, program staff must often balance the length of time required or the space on a questionnaire needed to use a measurement instrument against the ability to capture multiple outcomes of interest. Some efficiencies may be gained by using a single measure that has subscales to specifically assess well-being in multiple domains.

Table 3.1
Measures Identified for Military Populations and Available at No Cost, by Domain

Domain	Number of Measures Identified	Number of Measures Used with Military Populations	Number of Measures Available at No Cost
PTSD	49	36	33
Depression	71	31	54
Anxiety	41	18	26
TBI	20	13	8
Suicidal thoughts	16	7	7
Resiliency	15	10	10
Stress and coping	16	10	10
Exposure to traumatic events	21	15	15
Force readiness	4	4	3
Unit cohesion	10	10	7

NOTE: Measures can cover more than one domain; therefore, numbers in this table do not represent unique measures and the table columns cannot be summed. Multiple versions of a single measure (e.g., a two-item version and a one-item version) were counted as unique measures.

Of the measures included in the ROMR, 30 percent address two or more domains (e.g., depression and anxiety), with the remainder of measures addressing a single domain (e.g., depression). Table 3.2 summarizes both the total number of measures covering one, two, three, or four or more domains, and the mean number of items for each type of measure. As expected, measures covering a single domain typically consisted of fewer items than measures covering two or more domains, although there was wide variability.

Table 3.2
Measures Covering Multiple Domains

Number of Domains Covered by Measure	Number of Measures Identified	Number of Items		
		Mean	Standard Deviation	Range
1	122	22.50	26.5	1–169
2	31	38.10	31.5	2–120
3	14	58.21	66.4	6–207
4+	7	220.70	223.2	5–567

Methods of Administration

Ensuring that programs have appropriate staff to administer measures is another key factor to consider when selecting evaluation measures. Some measures can only be administered through an interview or via observation by a clinician or trained professional. For that reason, many program evaluators select measures that are self-administered through pen-and-paper or online assessments. Table 3.3 summarizes both the measure administrator and the method of administration for the measures included in the ROMR. The majority of measures identified were self-administered questionnaires. Over half of these had been used with military populations.

Clinical Significance

Programs providing novel interventions or other services specifically targeting clinical outcomes may need measures that provide information useful for both program evaluation and clinical case planning or for screening of at-risk individuals. About one-fifth of the measures in the ROMR have clinical cutoff scores used to assign clinical meaning to an individual's responses. Table 3.4 summarizes the domains captured by measures in the ROMR with clini-

Table 3.3
Methods Used to Administer Measures

Administration of Measures	Number of Measures Identified	Number of Measures Used with Military Populations
Administrator		
Self-administered	127	75
Administered by clinician	25	13
Administered by trained professional or staff member	30	17
Other	12	6
Method		
Survey questionnaire (pen and paper)	125	76
Survey questionnaire (online)	14	8
Structured interview	16	6
Semi-structured interview	18	7
Other	22	13

NOTE: A single measure could be available in both pen-and-paper and online questionnaire formats; therefore, the numbers in this table do not represent unique measures. Multiple versions of a single measure (e.g., a two-item version and a one-item version) are counted as unique measures.

Table 3.4
Measures with Clinical Significance Scores, by Domain

Domain	Number of Measures with Clinical Cutoff Scores	Number of Measures with Clinical Cutoff Scores and Used with Military Populations
PTSD	24	17
Depression	12	5
Anxiety	10	5
TBI	4	4
Suicidal thoughts	5	4
Stress and coping	2	2
Exposure to traumatic events	3	3

NOTE: Measures can cover more than one domain; therefore, numbers in this table do not represent unique measures and the table columns cannot be summed. Multiple versions of a single measure (e.g., a two-item version and a one-item version) are counted as unique measures. Resiliency, force readiness, and unit cohesion are excluded from this table because they are not clinical measures.

cal cutoff scores, among which PTSD and depression are the most common. We were able to identify only a limited number of measures with clinical significance scores that had been used with military populations; however, 17 measures of PTSD have clinical cutoff scores and have been used with military populations.

Psychometrics

The presence of published psychometrics can be an important indicator of the extent to which the measure assesses the intended construct, and does so in a manner that can be repeated across multiple administrations or for different types of respondents. When searching the ROMR database for available measures, program evaluators may wish to consider only measures that have published psychometric information, as this could help narrow a search strategy to include only the most established measures. This is especially important if the evidence gathered during program evaluation efforts will be used to effect change within a program, making it essential that collected information accurately reflects the desired constructs. The ROMR includes specific information that describes the reliability and/or validity of each instrument described in published work, as well as a short primer to help users interpret this information (Appendix G). Table 3.5 provides a summary of measures for which information on *both* the reliability and validity of the measure was available in the identified literature. There are fewer measures with published psychometric information that have been validated with military populations, and even fewer that are available at no cost. Additional work is needed to validate many of these measures in military populations, especially no-cost measures of anxiety and measures related to TBI.

Table 3.5
Measures with Published Psychometrics, by Domain

Measures	Number of Measures Identified	Number of Measures Used with Military Populations	Number of Measures Used with Military Populations and Available at No Cost
PTSD	49	36	25
Depression	71	31	20
Anxiety	41	18	7
TBI	20	13	4
Suicidal thoughts	16	7	3
Resiliency	15	10	5
Stress and coping	16	10	5
Exposure to traumatic events	21	15	10
Force readiness	4	4	3
Unit cohesion	10	10	7

NOTE: Measures can cover more than one domain; therefore, numbers in this table do not represent unique measures and the table columns cannot be summed. Multiple versions of a single measure (e.g., a two-item version and a one-item version) are counted as unique measures. Published psychometrics includes data on both the reliability and validity of the measure.

Potential Uses of the RAND Online Measure Repository

The ROMR has a number of potential uses across a wide variety of programs and by diverse groups of professionals. This chapter provides more detail on how the ROMR can be used by program evaluators, researchers, clinicians, and others interested in measuring psychological health and constructs related to TBI. Appendix H provides a more detailed user guide with specific instructions about how to access and search the ROMR.

Select Measures for Program Evaluation or Research Related to Psychological Health and Traumatic Brain Injury

The primary purpose of the ROMR is to help researchers and program evaluators select appropriate measures based on the needs of their program and the population it serves. Researchers, program evaluators, and others can use the repository to identify specific measures across a wide variety of domains related to psychological health, including depression, anxiety, PTSD, stress and coping, and resiliency. The ROMR also includes measures related to TBI. Besides identifying the content-area domain of the measure, the ROMR includes additional information to help users select appropriate measures to meet their needs, such as

- type of staff who can administer the measure
- whether or not the measure has been used with a military population
- age group for whom the measure is appropriate (e.g., adults versus children)
- length of a specific measure (number of items)
- method of administration (e.g., questionnaire, interview)
- published information on reliability and validity.

Select Measures for Dual Use by Both Clinicians and Program Evaluators or Researchers

Although the ROMR is primarily intended for use by program evaluators, it does include some measures that can be used both for research purposes and to inform clinical care. The ROMR includes information on available clinical cutoff scores that are recommended for use in the peer-reviewed literature to determine when individuals require clinical services, to inform clinical case planning, or to screen individuals who may be at risk for developing a psychological disorder. Measures with clinical meaning (i.e., those with clinical cutoff scores) may be useful

to clinicians providing novel interventions or other services specifically targeting clinical outcomes, as well as to researchers or evaluators who may be working with these clinicians to determine the effectiveness of their services.

Identify Core Outcome Measures for Evaluating Similar Programs

Government agencies, foundations, or others responsible for monitoring a set of programs could use the ROMR to identify and endorse a specific set of measures that are both reliable and valid across a variety of domains. Consistency in tracking core outcomes or indicators is one important step toward being able to compare the effectiveness of different programs in order to determine which approaches are achieving the greatest benefits for the population served. Measures in the ROMR could also be reviewed to identify a set of screening and assessment instruments that could be instituted consistently across primary care and mental health settings.

Determine Need for Additional Development or Validation of Measures with Military Populations

The ROMR contains a broad array of measures that assess psychological health and constructs related to TBI that have been described in the peer-reviewed literature over the past 10 years. Examining the existing measures currently in use by researchers and program evaluators can be helpful in determining areas in need of additional measure development. For example, there are few measures of force readiness currently being used for research or program evaluation, and the reliability and validity of these measures has not been described in the published literature. Similarly, for some domains (e.g., anxiety), few measures have been validated for use in the military population. Further information about the psychometric properties of these measures will be useful in determining their usefulness for these purposes.

Conclusions

The ROMR is a valuable tool that can facilitate the evaluation and monitoring of programs by providing an online searchable database of measures related to psychological health and TBI. To maintain its usefulness, the ROMR will require frequent updating to include emerging measures and to supplement information on the reliability and validity of measures as it is published. Additions may also be considered to expand areas of the ROMR where fewer measures have been identified. These areas include measures of leadership, force readiness, unit cohesion, and family support. Designated DoD organizations with responsibility for assessing the impact of psychological health and TBI programs should consider making provisions to update the database regularly to ensure its continued relevancy.

Existing Measure Repositories

This appendix describes the existing measure repositories or databases that RAND reviewed when identifying the key features and functions that should be included in the ROMR. These brief descriptions feature the number and types of measures in each repository, as well as the type of information that each repository includes about each measure.

ADAI Substance Use Assessment Instrument Library (2011)

The Alcohol and Drug Abuse Institute (ADAI) at the University of Washington has a free, online database of 750 measures related to the screening and assessment of substance use and substance use disorders. Available information on each measure includes the measure developer and contact information, a link to the measure, the instrument type and target population, scoring information, and validity/reliability information on the measure (as available). The measures are searchable by the target population, the measure's intended use (self-assessment, outcome evaluation, etc.), and keyword. Veterans are a searchable target population, but there are only seven measures attributed to this population.

Buros Institute of Mental Measurements (2011)

The Buros Institute of Mental Measurements reviews commercially available tests that have psychometric data. A hard copy of the *Mental Measurements Yearbook* costs approximately \$200. The Buros Institute also hosts a free, searchable online database of more than 3,500 tests, although only a very limited amount of information is available. Further detail is available by purchasing a \$15 Buros review, which is a more detailed report available individually for each of the 3,500 tests. These reviews contain basic information on the measure (including the developer and pricing information), a measure description, technical information on the measure, and Buros Institute commentary. The actual measure itself is not included. The *Yearbook* divides its measures into 18 major categories including behavior assessment, intelligence and general aptitude, neuropsychological, and speech and hearing. No measures related to TBI are included.

Center for Outcome Measurement in Brain Injury (2011)

The Center for Outcome Measurement in Brain Injury is an online resource for individuals needing detailed information and support in using outcome measures related to brain injuries. The website contains 31 measures that are commonly used in the field of brain injury rehabilitation and assessment. Available information on each measure includes a brief description, measure reference, and how to access the measure.

Compendium of Assessment and Research Tools (CART) (2011)

The Compendium of Assessment and Research Tools (CART), supported by the Star Center and W. K. Kellogg Foundation, is an online database of nearly 700 instruments for youth development programs. Use of the database is free; it is searchable by domains and subdomains, such as design and implementation (basic program elements), context (factors that have an indirect effect on implementation), and outcomes (where a change is expected to occur). Available information on each measure includes (as applicable and available for each measure) the target population, year created or modified, instrument type, a short description, a link to the measure itself, and associated constructs. This database does not have measures related to military service members.

ETS Test Collection/Carl C. Brigham Library (2011)

The Educational Testing Service has more than 25,000 items in its database. Measures in the ETS database cover a variety of domains including general health and well-being, and educational and career achievement. The information in the database is designed for use by researchers, graduate students, and teachers. There are no specific references to a military population. More than 1,000 tests are downloadable for a \$25 distribution fee (abstracts can be viewed free). As of February 2, 2011, 38 of these measures were related to PTSD (of which 7 items were related to “combat”), and 14 measures were related to TBI.

Measuring Violence-Related Attitudes, Behaviors, and Influences Among Youths: A Compendium of Assessment Tools, 2nd ed. (2011)

This compendium published by the Centers for Disease Control, National Center for Injury Prevention and Control, provides researchers and prevention specialists with a free set of tools to assess violence-related beliefs, behaviors, and influences, as well as to evaluate programs to prevent youth violence. There are more than 170 measures intended for use with youths between the ages of 11 and 24 years to assess serious violent and delinquent behavior, conflict resolution strategies, social and emotional competencies, peer influences, parental monitoring and supervision, family relationships, exposure to violence, collective efficacy, and neighborhood characteristics. Available information on each measure includes a brief description, reliability and validity, target population, and the measure developer.

National Center for the Study of PTSD (2011)

The National Center for the Study of PTSD is a federal research and education agency within the Department of Veterans Affairs. It has developed a 52-measure database that is free to use and includes measures relevant to PTSD, including both trauma exposure measures and PTSD screening tools for adults and children. Available information on each measure includes a brief description, sample item, reference, and information about how to obtain the measure.

Patient Reported Outcome and Quality of Life Instruments Database (ProQolid) (2011)

The Patient Reported Outcome and Quality of Life Instruments Database (ProQolid) is an online database of nearly 700 instruments developed by the MAPI Research Institute. The database has two levels: free and advanced (for a fee). The free level offers 14 data fields of information on an instrument including purpose, population, and some basic characteristics (such as the type of instrument). The advanced level contains psychometric properties of measures, methodology of instrument development, and the final version of the measure; access costs a minimum of \$750. The measure domains are related more to physical ailments than to mental health, although there are measures related to psychiatry and psychology, which include anxiety and depression measures. Military service members are not a specific population targeted by this database.

Detailed Literature Search Strategies Used to Identify Measures

Table B.1

Database	Domain	Limits	Search Concepts	Results
Military Psychology	Depression, anxiety, PTSD, resilience, and suicide	2008 to current	<p>Concept 1: depression OR anxiety OR posttraumatic stress OR PTSD OR resilience OR suicide OR suicidal AND</p> <p>Concept 2: measure OR inventory OR scale OR assessment OR psychometrics OR questionnaire OR screening OR survey OR checklist OR test AND</p> <p>Concept 3: journal title: Military Psychology</p>	54 total, 1 duplicate, 2 possibly relevant
Military Psychology	TBI	2008 to current	<p>Concept 1: traumatic brain injury AND</p> <p>Concept 2: survey OR instrument OR questionnaire OR scale OR measure OR psychometrics OR screening OR test OR span OR retention OR psychomotor OR sociometric OR checklist AND</p> <p>Concept 3: journal title: Military Psychology</p>	6 total, 4 duplicates, none relevant
PsycINFO	Depression, anxiety, PTSD, resilience, and suicide	English, published in 2000 to current, peer-reviewed journal articles only	<p>Concept 1: attitude measure* OR inventory OR inventories OR multidimensional scaling OR psychiatric evaluation OR psychological assessments OR psychometrics OR questionnaires OR rating scales OR screening OR statistical measurement OR substests OR surveys OR symptom checklists OR testing AND</p> <p>Concept 2: posttraumatic stress disorder OR DE "acute stress disorder" or DE "death anxiety" or DE "generalized anxiety disorder" or DE "obsessive compulsive disorder" or DE "panic disorder" or DE "phobias" or TI anxiety OR DE "dysthymic disorder" or DE "endogenous depression" or DE "reactive depression" or DE "recurrent depression" or DE "treatment resistant depression" OR TI depression OR resilience OR suicid* AND</p> <p>Concept 3: TI valid* OR DE valid* OR TI reliab* OR DE reliab*</p>	790 total; after deleting duplicates, 309 unique results, with 95 judged possibly relevant

Table B.1—Continued

Database	Domain	Limits	Search Concepts	Results
PubMed	Anxiety, depression, and PTSD	Humans, English, published in 2000 to current	<p>Concept 1: posttraumatic stress disorder* OR depressive disorder[TI] OR depression[MeSH Terms] OR depression[TI] OR anxiety[MeSH Terms] OR anxiety[TI] OR depressive disorder, major[MeSH] OR dysthymic disorder[Mesh]</p> <p>AND</p> <p>Concept 2: survey OR surveys OR instrument OR instruments OR questionnaire OR questionnaires OR psychiatric status rating scales OR measure[tiab] OR measures[tiab] OR psychiatric status rating scales OR psychometrics</p> <p>AND</p> <p>Concept 3: validation studies as topic[Mesh] OR valid*[ti] OR reliab*[ti]</p> <p>NOT</p> <p>Concept 4: postpartum OR post-partum OR post-natal OR postnatal</p> <p>NOT</p> <p>Concept 5: editorial OR letter OR comment</p>	829 total, with 257 judged possibly relevant
PILOTS	All	English, published in 2000 to current, peer-reviewed journal articles only	<p>Concept 1: survey OR surveys OR instrument OR instruments OR questionnaire OR questionnaires OR psychiatric status rating scales OR measure OR measures OR psychiatric status rating scales OR psychometrics</p> <p>AND</p> <p>Concept 2: valid* OR reliab*</p>	674 total; after deleting duplicates, 601 unique results, with 141 results judged possibly relevant
PsycINFO	TBI	English, published in 2000 to current, peer-reviewed journal articles only	<p>Concept 1: aptitude measure* OR attitude measure* OR comprehension test* OR digit span test* OR intelligence measure* OR inventory OR inventories OR multidimensional scaling OR perceptual measure* OR psychiatric evaluation OR psychological assessments OR psychometrics OR questionnaires OR rating scales OR retention measures OR screening OR sensorimotor measures OR sociometric test* OR speech and hearing measures OR statistical measurement OR subtests OR survey* OR symptom checklist* OR testing OR verbal test*</p> <p>AND</p> <p>Concept 2: traumatic brain injur*</p> <p>AND</p> <p>Concept 3: TI valid* OR DE valid* OR TI reliab* OR DE reliab*</p>	116 total; after deleting duplicates, 94 unique results, with 76 judged possibly relevant
PubMed	TBI	Humans, English, published in 2000 to current	<p>Concept 1: traumatic brain injury</p> <p>AND</p> <p>Concept 2: survey OR surveys OR instrument OR instruments OR questionnaire OR questionnaires OR psychiatric status rating scales OR measure[tiab] OR measures[tiab] OR psychiatric status rating scales OR psychometrics OR aptitude tests OR digit span OR language tests OR hearing tests OR neuropsychological tests OR retention [MeSH] OR psychomotor performance OR sociometric techniques OR speech production measurement</p> <p>AND</p> <p>Concept 3: "validation studies as topic"[MeSH] OR valid*[tiab] OR reliab*[tiab]</p> <p>NOT</p> <p>Concept 4: editorial OR letter OR comment</p>	89 total, 1 duplicate, with 64 unique results judged possibly relevant

Table B.1—Continued

Database	Domain	Limits	Search Concepts	Results
PubMed	Resilience and suicidal thoughts	Humans, English, published in 2000 to current	<p>Concept 1: resilienc* OR suicid* AND Concept 2: survey OR surveys OR instrument OR instruments OR questionnaire OR questionnaires OR psychiatric status rating scales OR measure[tiab] OR measures[tiab] OR psychiatric status rating scales OR psychometrics AND Concept 3: "validation studies as topic"[MeSH] OR valid*[ti] OR reliab*[ti] NOT Concept 4: editorial OR letter OR comment</p>	94 total; after deleting duplicates, 73 unique results, with 14 judged possibly relevant
PILOTS	Military measures	English, published in 2000 to current, peer-reviewed journal articles only	<p>Concept 1: survey OR surveys OR instrument OR instruments OR questionnaire OR questionnaires OR psychiatric status rating scales OR measure OR measures OR psychiatric status rating scales OR psychometrics AND Concept 2: valid* OR reliab* AND military measures concepts: military AND readiness, "unit cohesion," "force preservation," military AND (confidence OR trust OR perception* OR support*) AND (leader* OR unit)</p>	1 total
PsycINFO	Military measures	English, published in 2000 to current, peer-reviewed journal articles only	<p>Concept 1: attitude measure* OR inventory OR inventories OR multidimensional scaling OR psychiatric evaluation OR psychological assessments OR psychometrics OR questionnaires OR rating scales OR screening OR statistical measurement OR subtests OR surveys OR symptom checklists OR testing AND Concept 2: valid* OR reliab* AND military measures concepts: military AND readiness, "unit cohesion," "force preservation," military AND (confidence OR trust OR perception* OR support*) AND (leader* OR unit)</p>	17 total, 5 duplicates
PubMed	Military measures	Humans, English, published in 2000 to current	<p>Concept 1: survey OR surveys OR instrument OR instruments OR questionnaire OR questionnaires OR psychiatric status rating scales OR measure[tiab] OR measures[tiab] OR psychiatric status rating scales OR psychometrics AND Concept 2: "validation studies as topic"[MeSH] OR valid*[tiab] OR reliab*[tiab] AND military measures concepts: military AND readiness, "unit cohesion," "force preservation," military AND (confidence OR trust OR perception* OR support*) AND (leader* OR unit)</p>	23 total, 2 duplicates

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List of Measures Included in the RAND Online Measure Repository

Acute Stress Checklist for Children (ASC-Kids)
Adolescent Cognitive Style Questionnaire (ACSQ)
Adult Suicidal Ideation Questionnaire (ASIQ)
Anxiety and Depression Detector (ADD)
Anxiety Disorders Interview Schedule (ADIS)
Anxiety Sensitivity Index–3 (ASI-3)
Anxiety Sensitivity Profile–22 Item Version (ASP-22)
Appraisal of Social Concerns Scale (ASC)
Army Post-Deployment Reintegration Scale (APDRS)
Assessment of Depression Inventory (ADI)
Beck Hopelessness Scale (BHS)
Beck Scale for Suicide Ideation (SSI)
Behavior and Symptom Identification Scale (BASIS-32)
Behavioral Observation System (BOS)
Bipolar Inventory of Symptoms Scale (BISS)
Brief Measures of Positive and Negative Affect (PANAS)
Brief Traumatic Brain Injury Screen (BTBIS)
California Psychological Inventory–Depression (CPI-D)
Center for Epidemiologic Studies Depression Scale (CES-D)
Changes in Outlook Questionnaire (CiOQ)
Changes in Outlook Questionnaire–Short Form (CiOQ-SF)
Child Health and Illness Profile–Child Edition, Child Report Form (CHIP-CE/CRF)
Child Health and Illness Profile–Child Edition, Parent Report Form (CHIP-CE/PRF)
Childhood Trauma Questionnaire (CTQ)
Children’s Revised Impact of Event Scale–8 Item Version (CRIES-8)
Children’s Revised Impact of Event Scale–13 Item Version (CRIES-13)
Clinically Useful Depression Outcome Scale (CUDOS)
Clinician-Administered PTSD Scale (CAPS)
CNS Vital Signs Battery (CNSVS)
Cognitive Style Questionnaire (CSQ)
Cohesion Questionnaire–Brigade Survey (CQ-BS)
Cohesion Questionnaire–Company Survey (CQ-CS)
Combat Exposure Scale (CES)
Composite International Diagnostic Interview (CIDI) – PTSD Module

Concussion Resolution Index (CRI)
 Connor-Davidson Resilience Scale (CD-RISC) – 10 Item Version
 Connor-Davidson Resilience Scale (CD-RISC) – 25 Item Version
 Connor-Davidson Resilience Scale (CD-RISC2) – 2 Item Version
 Cornell Dysthymia Rating Scale (CDRS)
 Davidson Trauma Scale (DTS)
 Depersonalization Severity Scale (DSS)
 Deployment Risk and Resilience Inventory (DRRI)
 Depression Arkansas Scale (D-ARK)
 Depression Coping Self-Efficacy Scale (DCSES)
 Disability Rating Scale (DRS)
 Dispositional Resilience Scale–15 Item Version (DRS15)
 Distressing Event Questionnaire 1 (DEQ 1)
 Distressing Event Questionnaire 2 (DEQ 2)
 Emotional Reactivity and Numbing Scale (ERNS)
 Fear of Negative Evaluation–Brief Version (FNEB)
 General Behavior Inventory–Parent Report (GBI-P)
 Generalized Anxiety Disorder Severity Scale (GADSS)
 Global Assessment Scale (GAS)
 Global Assessment Tool (GAT)
 Hamilton Rating of Depression Scale/Montgomery Asberg Depression Rating Scale Interview (HMI)
 Hamilton Rating Scale for Anxiety (HAMA)
 Hamilton Rating Scale for Depression (HAM-D)
 Impact of Event Scale (IES)
 Impact of Event Scale–Revised (IES-R)
 Impact of Event Scale–6 Item Version (IES-6)
 Injury Distress Index (IDI)
 Integrated Delivery System Consultation Assessment Tool (IDS-CAT)
 Interactive Voice Response Montgomery Asberg Depression Rating Scale (IRV MADRS)
 Interview for Mood and Anxiety Symptoms (IMAS)
 Inventory of Depression and Anxiety Symptoms (IDAS)
 Inventory of Depression and Anxiety Symptoms–Clinical Rating (IDAS-CR)
 Inventory of Depressive Symptomatology, Clinician Rating (IDS-C)
 Inventory of Depressive Symptomatology, Self Report (IDS-SR)
 Joint Mental Health Advisory Team 7 Survey (J-MHAT 7)
 Joint Mental Health Advisory Team 7 Survey (J-MHAT 7) – Barriers and Stigma Scale
 Liebowitz Social Anxiety Scale (LSAS)
 Life Satisfaction Index–A (LSI)
 Lifetime Trauma and Victimization History (LTVH)
 Los Angeles Symptom Checklist (LASC)
 Mental Health Inventory (MHI)
 Military Life Scale (MLS)
 Minnesota Multiphasic Personality Inventory–2 (MMPI-2)
 Mississippi PTSD Scale–Revised (M-PTSD R)
 Mississippi Scale for Combat-Related PTSD (M-PTSD)

Modified Scale for Suicidal Ideation (MSSI)
 Montgomery Asberg Depression Rating Scale (MADRS)
 Mood and Anxiety Symptoms Questionnaire (MASQ)
 Mood and Feelings Questionnaire–Child (MFQ-C)
 Mood and Feelings Questionnaire–Parent Version (MFQ-P)
 Mood and Feelings Questionnaire–Single Item Child Version (MFQ-C1)
 Mood and Feelings Questionnaire–Single Item Parent Version (MFQ-P1)
 Mood and Feelings Questionnaire–2 Item Child Version (MFQ-C2)
 Mood and Feelings Questionnaire–2 Item Parent Version (MFQ-P2)
 Moss Attention Rating Scale (MARS)
 My Mood Monitor Checklist (M-3)
 National Anxiety Disorder Screening Day Instrument (NADSD)
 Neurological Outcome Scale for Traumatic Brain Injury (NOS-TBI)
 Neuropsych Questionnaire (NPQ) – Adult Version
 Neuropsych Questionnaire–Short Form (NPQ-SF)
 Neuropsychological Assessment Battery–Screening Module (NAB-SM)
 Non-Traumatic Stressors Questionnaire (NTSQ)
 Numeric Anxiety Scale (NAS)
 Patient Health Questionnaire (PHQ-8)
 Patient Health Questionnaire–9 Item Version (PHQ-9)
 Patient Health Questionnaire–2 Item Version (PHQ-2)
 Pediatric Inpatient Behavior Scale (PIBS)
 Pediatric Quality of Life Enjoyment and Satisfaction Questionnaire (PQ-LES-Q)
 Penn Inventory for Posttraumatic Stress Disorder (Penn Inventory)
 Pentagon Post Disaster Health Assessment (PPDHA)
 Peritraumatic Dissociative Experiences Questionnaire (PDEQ)
 Peritraumatic Distress Inventory (PDI)
 Personality Assessment Inventory (PAI)
 Pittsburgh Sleep Quality Index Addendum for PTSD (PSQI-A)
 Positive and Negative Suicide Ideation Inventory (PANSI)
 Post-Deployment Readjustment Inventory (PDRI)
 Posttraumatic Growth Inventory (PTGI)
 Posttraumatic Stress Diagnostic Scale (PSDS)
 Primary Care–PTSD Screen (PC-PTSD)
 Psychiatric Diagnostic Screening Questionnaire (PDSQ)
 PTSD Checklist (PCL)
 PTSD Checklist–2 Item Version (PCL-2)
 PTSD Checklist–3 Item Version (PCL-3)
 PTSD Checklist–4 Item Version (PCL-4)
 PTSD Checklist–6 Item Version (PCL-6)
 PTSD Symptom Scale–Interview Version (PSS-I)
 Purdue Posttraumatic Stress Disorder Scale, Revised (PPTSD-R)
 Quick Inventory of Depressive Symptomatology, Clinician Rating (QIDS-C)
 Quick Inventory of Depressive Symptomatology, Self-Report (QIDS-SR)
 RAND Peritraumatic Dissociative Experiences Questionnaire (RAND PDEQ)
 Readiness Estimate and Deployability Index (READI)

Readiness Estimate and Deployability Index Revised for Air Force Nurses (READI-R-AFRN)
 Readiness Estimate and Deployability Index Revised for Air Force Nurses Short Form
 (READI-R-AFRN [SF])
 Repeatable Battery for the Assessment of Neurological Status (RBANS)
 Revised Child Anxiety and Depression Scale (RCADS)
 Screen for Child Anxiety-Related Emotional Disorders (SCARED)
 Screen for Posttraumatic Stress Symptoms (SPTSS)
 Self-Harm and Behavior Questionnaire (SHBQ)
 Self-Injurious Thoughts and Behavior Interview (SITBI)
 Short-Form Health Survey–12 item (SF-12)
 Short Form Health Survey–36 Item (SF-36)
 Short Mood and Feelings Questionnaire–Child Version (SMFQ-C)
 Short Mood and Feelings Questionnaire–Parent Version (SMFQ-P)
 Short Screening Scale for PTSD
 Single-Item Global Measures of the Severity of Depression (GSEVDEP)
 Single-Item Global Psychological Functioning Questionnaire (GPF)
 Single-Item Global Quality of Life Questionnaire (GQOL)
 Social Anxiety Scale for Adolescents (SAS-A)
 Social Anxiety Scale for Adolescents Revised (SAS-AR)
 Social Knowledge Test (SKT)
 Social Phobia and Anxiety Inventory (SPAI)
 Social Phobia and Anxiety Inventory for Children (SPAI-C)
 State-Trait Anxiety Inventory (STAI)
 Stressful Life Events Schedule–Child Version (SLES-C)
 Structured Clinical Interview for DSM-IV Dissociative Disorders–Revised (SCID-D-R)
 Structured Clinical Interview for DSM-IV PTSD Screening Module (SCID-PTSD)
 Structured Interview for Disorders of Extreme Stress–Revised (SIDES-R)
 Structured Interview Guide for the Hamilton Anxiety Scale (SIGH-A)
 Structured Interview Guide for the Montgomery Asberg Depression Rating Scale (SIGMA)
 Suicidal Behaviors Questionnaire–Revised (SBQ-R)
 Suicidal Behaviors Questionnaire–Single Item (SBQ -1)
 Suicide Attempt Self-Injury Interview (SASII)
 Symptom Checklist–6 Item Version (SCL-6)
 Symptom Checklist–10 Item Version (SCL-10)
 Symptom Checklist–10 Item Version, Revised (SCL-10R)
 Symptom Checklist–90–Revised PTSD Subscale (SCL-90-R)
 Trails Making Test A and B (TMT)
 Trauma Symptom Inventory (TSI)
 Traumatic Events Questionnaire (TEQ)
 Traumatic Life Events Questionnaire 2 (TLEQ 2)
 Traumatic Life Events Questionnaire 3 (TLEQ 3)
 Type D Scale–14 (DS14)
 Veterans RAND 12 Item Health Survey (VR-12)
 Veterans RAND 36 Item Health Survey (VR-36)
 Wechsler Adult Intelligence Scale–III Block Design (WAIS-III/BD7)
 Wechsler Adult Intelligence Scale–III Matrix Reasoning (WAIS-III/MR7)

Wechsler Adult Intelligence Scale IV (WAIS-IV)
Wechsler Memory Scale IV (WMS-IV)
Wisconsin Card Sorting Test (WCST)
Youth Risk Behavior Survey–2005 Middle School Version (MSYRBS)

Data Abstraction Form

Table E.1

Elements Abstracted from Each Article	Brief Description of Each Element	Response Options
General Information on the Measure		
Name of measure	The full or official name of the measure	Name and abbreviation
Reference(s)	The full reference information for each article on this measure. This could include multiple references.	References and a checkbox for "no other supporting articles"
Brief summary of the purpose of the measure	One to two sentences describing (1) the number of items in the measure, (2) how it is administered, and (3) what it is trying to measure	Brief summary
Measure domain	<p>A list of the following domains being captured by the measure:</p> <ol style="list-style-type: none"> 1. PTSD 2. Depression 3. Anxiety 4. TBI 5. Suicidal thoughts 6. Resiliency 7. Stress and coping, which includes measures of general stress and coping styles or skills 8. Exposure to traumatic events 9. Force readiness, which includes measures that assess whether service members are psychologically ready to be deployed 10. Unit cohesion. <p>Domains reflect areas captured by scales or stand-alone subscales, not single items.</p>	Multiple choice from the list of domains; more than one domain could be checked for each measure
Age group(s)	<p>The age group that the measure was tested with:</p> <ol style="list-style-type: none"> 1. Adults (18 years and older) 2. Adolescents or children. <p>If the measure was used with adolescents or children, the mean or range of ages (e.g., 4–6 years) was included.</p>	Multiple choice from list. Measures could be applicable to both adults and adolescents or children. There were also two integer fields, one minimum and one maximum to capture age ranges.
Used with a military population?	Whether or not one of the articles about this measure shows that the measure has ever been used with any military population.	Yes or no

Table E.1—Continued

Elements Abstracted from Each Article	Brief Description of Each Element	Response Options
Measure Administration		
Method of administration	A description of how the measure is administered: <ol style="list-style-type: none"> 1. Survey questionnaire (pen and paper), includes questionnaires, inventories, and checklists 2. Survey questionnaire (online) 3. Structured interview 4. Semi-structured interview 5. Observation rating form 6. Other (please describe) 7. No information available. 	Multiple choice from the list of methods; more than one method could be selected for a single measure
Respondent	A description of who answers the questions in the measure: <ol style="list-style-type: none"> 1. Self-administered 2. Caregiver completing information about their child 3. Child self-report 4. Other (please describe) 5. No information available. 	Multiple choice from the list of populations
Scoring the Measure		
Clinical cutoff score	Whether or not the measure has a clinical cutoff score, and what the clinical cutoff score(s) is.	Yes or no, and a description of the clinical cutoff score(s), if available
Number of items	The total number of items on the measure	Integer field; a “no information available” option
Measure subscales	Whether the measure has subscales, and a list and brief description of each, including the number of items per subscale. A subscale is a grouping on individual items that when considered together provide information about the same characteristic.	Yes or no, and a description of subscales (if applicable)
Response options and anchors	One or two sentences that describe the response options and anchors for each scale that comprises the measure (e.g., 1 [not at all] to 7 [very much]). If there are multiple scales or subscales, the response options and anchors for each scale are described.	A description of response options and anchors, and a “no information available” option
Reliability and Validity of the Measure		
Sample size (n)	The range of sample sizes included in the different studies regarding this measure from the smallest to the largest. If one population has been studied, only a single sample size is included.	Two integer fields, one minimum and one maximum to capture range, and a “no information available” option
Reliability testing	The range of reliability scores on the measure (from lowest to highest) across all studies included in the repository. Reliability was commonly reported as Cronbach’s alpha, test-retest reliability, or internal consistency.	A description of reliability and a “no information available” option
Validity testing	The overall correlation scores between this and other measures. Validity was commonly established by correlating the measure with other similar measures (divergent validity). For screening and assessment measures, validity was also established by examining sensitivity and specificity (determining if the measure identifies individuals it is supposed to identify without identifying individuals it is not supposed to identify).	A description of validity and a “no information available” option

Table E.1—Continued

Elements Abstracted from Each Article	Brief Description of Each Element	Response Options
Locating the Measure		
How to obtain a copy of the measure	A description of how potential users can obtain a copy of the measure. For example, a complete copy of the measure may be available as published in one of the references, upon request from a specific publisher or available for download from a specific website. If measures were available on a specific website, a link to the actual measure was included.	A description of how to obtain the measure
Fees to use the measure	Whether there was a fee to use the measure, and a description of how much it costs to use the measure (e.g., \$5/person), if applicable.	Yes or no, and a description of the cost of the measure, if applicable
Measure Background		
Developer of the measure	A description of who developed the measure, including the original reference to the earliest publication of the measure we could locate.	A reference and a “no information available” option
Year the measure was originally developed	The year the measure was first released for use.	An integer box for the year and a “no information available” option
History of measure	A brief description of previous versions of the measure that were referenced in the reviewed articles. If this is the first version of the measure, it is specified here.	A description of previous versions of the measures and a “no information available” option
Related measures	The names of other versions of the measure (e.g., short form, additional language forms) included in the measure repository. If there are no other related measures in the measure repository, it is specified here.	A description of other versions of the measure in the repository and a “no information available” option

Glossary

Military Terms

force health readiness

The ability of United States military forces to optimize and protect the psychological and physical health of service members and their families through policies and programs across all phases of deployment. It is operationalized through a partnership between the service members who make up the force, their leaders at all levels, and health care planners and providers. Force health protection and readiness is also referred to as force protection, force preservation, or force preservation and readiness. (Office of the Deputy Assistant Secretary of Defense, 2011)

unit cohesion

The bonding together of members of an organization in such a way as to sustain their will and commitment to each other, their unit, and the mission. (Powell et al., 2006)

Clinical Terms

clinical assessment

A measure administered by a clinician or trained professional for the purpose of providing a diagnosis or informing a treatment plan.

screening

A measure used to identify at-risk populations.

self-administered measure

A subject provides information about himself or herself, such as on a questionnaire or in an interview. (Leary, 1995)

surveillance

A type of measure used to determine the prevalence of a problem in a given population (e.g., a measure used to determine the proportion of service members affected by depression).

Research Method Terms

reliability

The consistency or dependability of a measurement procedure or the extent to which a measured variable is free from random error. (Leary, 1995; Stangor, 2004; Pelham and Blanton, 2007)

validity

The extent to which a measurement procedure actually measures what it is intended to measure. (Leary, 1995)

Brief Guide to Interpreting Measure Reliability and Validity in the RAND Online Measure Repository

When selecting an appropriate measure, it is critical to understand whether that measure is both reliable and valid for the population you intend to use it with. It is important to remember that reliability and validity information in the ROMR is only for the population described in the ROMR. Following is some information to help with interpreting the reliability and validity information in the ROMR.

What Is Reliability?

Reliability is defined as the consistency or dependability of a measurement procedure or the extent to which a measured variable is free from random error (Leary, 1995; Stangor, 2004; Pelham and Blanton, 2007).

There are several types of reliability, including:

- **Inter-rater reliability:** used to assess the degree to which different raters/observers give consistent estimates of the same phenomenon
- **Test-retest reliability:** used to assess the consistency of a measure from one time to another
- **Internal consistency reliability:** used to assess the consistency of results across items within a test (Rousson, Gasser, and Seifert, 2002).

Several types of statistics are used to assess reliability including correlations, Cronbach's alpha, and Cohen's kappa. Reliability statistics are generally reported somewhere between 0.00 (no reliability) and 1.00 (perfect reliability). Most of the time, if two measures are compared side by side, the one with the reliability statistic closest to 1.00 is the more reliable measure. It is important to note that the number of items in a measure can influence its reliability. Users should consider both the number of items and reliability information when making a decision about which measure is most appropriate (Leary, 1995; Stangor, 2004; Pelham and Blanton, 2007; Rousson, Gasser, and Seifert, 2002).

What Is Validity?

Validity is defined as the extent to which a measurement procedure actually measures what it is intended to measure (Leary, 1995).

There are several types of validity, including:

- **Criterion validity:** used to assess the extent to which the measure actually captures the phenomenon it is trying to measure (i.e., the criterion) by comparing (or correlating) it with other measures of the same construct
- **Content validity:** used to assess the extent to which the test content covers a representative sample of the behavior domain to be measured
- **Predictive validity:** used to assess the extent to which the measure can predict (or correlate with) other measures of the same construct that are measured at some time in the future (Leary, 1995; Rousson, Gasser, and Seifert, 2002).

Statistics can be used as an indicator of validity. For example, to establish criterion validity, a measure would be correlated with another measure of the same construct and the correlation coefficient would represent the measure's criterion validity. Similar to reliability statistics, the correlation can range from 0.00 (no correlation) to 1.00 (perfect correlation), with higher correlations indicating a higher level of criterion validity (Leary, 1995). It is important to note the sample size in the article's publishing information on validity of the measure. Larger sample size generally provides more confidence that the measure has been validated using a representative sample of the target population. Users should consider both the sample size and validity information when making a decision about which measure is most appropriate.

Brief User Guide for the RAND Online Measure Repository

Getting to the ROMR

How do I get to the ROMR?

The ROMR is available at <http://militaryhealth.rand.org/innovative-practices/measures.html>

Do I need a password or to register to use the ROMR?

No, the ROMR is free for anyone to use.

Searching for Measures

What filters can I use to help find the measures I'm looking for?

The ROMR filters measures by

- Age
- Specific clinical domains such as depression, PTSD, or TBI
- Previous use with a military population
- Cost of purchasing the measure
- Number of items in the measure
- Whether the measure is intended to be self-administered or must be administered by a clinician or trained professional
- Respondent (e.g., an individual or caregiver responding about their child).

Can I search for a specific measure by name or a specific keyword?

Yes, the ROMR allows you to search by keyword or name using a free text field. Enter the name of the measure or keyword into the "Keyword" search box and click on the "Go" button.

Using Search Results

Can I compare measures side by side?

Yes, to compare measures side by side, click the check box next to the measures you want to compare and then click on the "Compare selected" button.

Is there a glossary to help me understand what is meant by certain words or domains included in the ROMR?

Yes, a glossary that defines the key terms used in the ROMR is available online at <http://militaryhealth.rand.org/innovative-practices/measures.html>

Some of the search results get cut off midsentence. How do I see the full text?

Clicking on the text that says “Read More” will show the full text.

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Since 2001, U.S. military forces have been engaged in extended conflicts in Iraq and Afghanistan. While most military personnel cope well across the deployment cycle, the operational tempo may raise the risk of mental health problems, such as post-traumatic stress disorder (PTSD) and major depression, and consequences from traumatic brain injury (TBI). To support servicemembers and their families as they cope with these challenges, the U.S. Department of Defense has implemented numerous programs addressing biological, social, spiritual, and holistic influences on psychological health along the resilience, prevention, and treatment continuum that focus on a variety of clinical and nonclinical concerns.

As these efforts have proliferated, evaluating their effectiveness has become increasingly important. To support the design and implementation of program evaluation, RAND developed the RAND Online Measure Repository (ROMR) which indexes and describes measures related to psychological health and TBI. The ROMR is a publicly accessible, online, searchable database containing 171 measures related to psychological health and TBI. This report describes the rationale for developing the ROMR, the content included in the ROMR, and its potential in both civilian and military populations. The ROMR includes information about measure domains, psychometrics, number of items, and costs, which can inform the selection of measures for program evaluations. Included measures address domains of primary importance to psychological health (PTSD, depression, anxiety, suicidal ideation, and resiliency) and TBI (cognition, executive functioning, and memory). Also identified are measures relevant to military units, such as unit cohesion and force readiness and preservation.



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