Chapter 16

PSYCHOLOGICAL SCREENING OF RECRUITS PRIOR TO ACCESSION IN THE US MILITARY

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INTRODUCTION

Recruit attrition prior to the end of the first term of enlistment is a continuing problem. Often, military leaders become frustrated with the high rate of attrition and wonder if better screening efforts would produce fewer dropouts. It is also believed that more in-depth screening methods could lead to fewer cases of psychological disability after combat. However, the history of psychological testing in the military has demonstrated that psychological screening has limited efficiency and success in performing these tasks.

In this chapter, screening is defined as a cursory interview and/or a pen-and-paper (or computerized) test that predicts which recruits will remain in the military through their first assignment or otherwise succeed while on active duty. Different, although related, issues are prominent in pre- and postdeployment screening for psychological issues, such as suicidal behavior or posttraumatic stress disorder.

The Office of the Assistant Secretary of Defense (Force Management Policy) reported on diverse issues affecting current recruit attrition, including the following topics:

- mental health accession standards,
- medical and psychological screening tools,
- disqualification and waiver processes,
- existed-prior-to-service recruit mental health issues,
- definition of the recruit population,
- mental health intervention levels,
- updates on policy changes,
- link between long-term functional outcomes and medical accession standards,
- mental health coding differences among the military services, and
- preventative and treatment intervention assistance.

However, a central issue of concern is whether high-risk trainees should be prevented from entering the service or given the opportunity to attempt training and service at the risk of unproductive cost to the military and potential emotional or occupational damage to themselves. Thus, performance is not necessarily a product of intrinsic capabilities—which are measured to varying extents by screening tests—but, more importantly, the capacity for adaptation in specific environments. Does the military have a system already in place that assesses adaptive capacity? It is believed that this process occurs under stressful conditions through interactions with fellow recruits and instructors in actual military training environments. Therefore, basic training is considered a functional screening measure, albeit an expensive one.

This chapter discusses the problems associated with recruit attrition. In addition, it outlines the history of psychological testing of recruits in the US military along with current practices.

RECRUIT ATTRITION

Enlisted recruit attrition has been an enduring challenge for the US military service. Over the past 2 decades, enlisted attrition rates have consistently averaged 30% during first-term periods. In 1997 this issue was reemphasized after the Subcommittee on Personnel for the US Senate Committee on Armed Services requested the General Accounting Office (GAO) to review 6-month attrition rates for enlisted service members. Investigations were launched into the increasing 6-month and 4-year attrition rates, and the faltering ability of some services to meet their recruitment goals.

A series of investigative reports by GAO were published in January 1997. These reports reflected the multifaceted complexity of enlisted attrition, which expanded into issues of recruitment, selection, training, and retention.[1-4] In 1962 expended financial and personnel resources for enlisted 6-month attrition losses equated to approximately $390 million.[2] In response to GAO analysis and recommendations, the Department of Defense (DoD) and Congress launched a multitude of new initiatives and policy developments that have been subsequently integrated over the past 4 years into the National Defense Authorization Acts.

One major area of investigation involved mental health effects on enlisted entry-level attrition. According to the director for Accession Policy in the Office of the Undersecretary of Defense for Personnel and Readiness, reasons for attrition can be grouped into three areas: (1) medical disqualifications, (2) hardship conditions, and (3) behavioral problems or unsatisfactory performance. Behavioral/performance issues constitute 80% of separations.[5]

In 1979 the US Army sought the assistance of the RAND Corporation (Santa Monica, Calif) to investigate why one third of its recruits dropped out during the first term of service. First-term attrition rates ranged from 25% to 40%, averaging 30% among all the armed forces.[1] Between fiscal years 1982 and 1993, 31.7% of all enlistees did not complete their first term, and

11% of all enlistees were separated during their first 6 months.[6]

The Army's attrition rate, in general, has been the highest, and the Air Force's attrition rate has been the lowest. However, the overall first-term attrition rate in all the military services has been between 32% and 35%. Recently, the first-term attrition rate hit an all-time high at 36.9%.[4] The average college dropout rate is 28% for a comparably aged population.[5]

Since 1987 the 6-month attrition rate has also steadily increased. Among the armed services, there is a 15% attrition rate (12% for the Air Force and 16% for each of the other services), which represents the largest loss during first-term periods.[7] Training costs per enlistee range from $9,400 to $13,500 for recruitment and basic training, with additional training costs of another $6,100 to $16,300 per recruit.[1] In fiscal year 1998, the average cost of recruiting an enlistee was $6,732, and the average cost of training a recruit was an additional $28,800—a total of $35,532 per trained recruit.[1]

Attrition is a complex issue and is closely linked to retention and recruiting. Since 1997 the military has had difficulty meeting recruitment goals, thus making attrition rates even more significant. In addition, because of annual accession requirements, building a recruit applicant pool in the delayed entry pool has been impaired considerably.

There are many reasons for the growing recruit attrition rate.[8] The military has relied on a volunteer force since 1973. After the Persian Gulf War, in the early 1990s, recruiting resources were scaled down. Significant losses have been linked to civilian sector competition, specifically in the areas of information technology, communications, and airplane mechanics. Since 1993 greater financial investments into the system have not translated into higher quality recruits. Additional contributing factors include the following:

- civilian educational/employment interests and opportunities,
- a formerly robust economy (with its low unemployment rates),
- fewer veteran role models,
- changes in cultural trends,
- reduced stability and predictability of military lifestyle,
- long duty hours,
- frequent moves,
- extended family separations, and
- spousal employment disruptions.

One of GAO's main concerns has been to accurately determine the fundamental reasons for attrition. The different separation codes used by each of the armed services has hampered accurate data interpretation. Central issues include overlapping categories of discharge, different utilization of codes among the military services, and enlisted separations (80%) having more than one cause. Interpretation is essential in clearly identifying causes of attrition, which would allow empirical guidance to address avoidable etiologies and directing appropriate policy revision.

The majority of attrition is attributed to adjustment and behavioral issues, but the separations are coded through administrative channels. These separations represent reversible psychological or psychiatric issues that responded to earlier preventative measures or treatment.

The three military services set goals to reduce attrition by 4% to 10%, but it was questioned whether this could occur without accurate analysis of attrition causes.[1] The DoD's enlistment standards are not empirically linked to military performance, but rather attrition risks are based on military experience and expert opinion. The 1996 formation of the Accession Medical Standards Analysis and Research Activity (AMSARA) has sparked efforts to develop evidence-based accession standards. AMSARA's mission is the collection and analysis of service epidemiological data, which can then be linked with cost-effectiveness analysis, medical waiver quantitative risks, and direct medical attrition minimization policy. Another concern has been using administrative databases for medical purposes. There is support for revising separation codes and in centralizing this process. Efforts are being made to revise all separation codes and advise uniform application among the armed services. Use of recognized codes from the *International Classification of Diseases* on all medical waivers and separations is being considered.[9]

According to 1995 to 1998 data from AMSARA,[7] psychological and psychiatric conditions composed one quarter of all existed prior to service first-term discharges. Orthopedic causes were the most common, followed by psychiatric causes and pulmonary (asthma) causes. From 1995 to 1998, for enlisted personnel with 2 years of service, psychiatric conditions represented 3% of Army disability discharges and 13% of Air Force disability discharges. Musculoskeletal causes were the primary reasons for disability discharges. (Data are unavailable from the US Navy and Marine Corps.) Also unrecorded are a substantial number of discharges that result from psychiatric causes but are cataloged under the guise of another category (usually orthopedic). This may be done to protect the recruit or simply to expedite the separation process.

HISTORY OF MILITARY PSYCHOLOGICAL AND PSYCHIATRIC SCREENING

World War I

Psychological screening has been an integral part of military accession practices for the past 80 years. Novel screening efforts emerged at critical time for the US military as it headed into World War I and drafted men into service. With the many scientific advancements in intelligence testing, more efficient methods of screening have materialized.

In the late 19th century, the study of individual differences developed interest in the quantification of human qualities. In 1884 Francis Galton, the father of psychological testing, administered the first test battery to thousands of people at the International Health Exhibit in England. James Cattell modified Galton's test and introduced it to the United States, along with the term "mental tests." In 1897 Alfred Binet measured and tested individual differences by studying children in the overcrowded Paris public school system. In 1905 Binet and Theodore Simon developed the Simon-Binet intelligence test to accurately test the intelligence of schoolchildren.

By 1908, as intelligence testing increased in popularity, Henry Goddard translated the test into English for the American consumers. The test underwent multiple revisions, with Lewis Terman standardizing the test on American children with his own 1916 revision. Today, this test is known as the Stanford-Binet test. In 1917 Robert Woodworth developed the Personal Data Sheet. This was the first group personality test, and it was briefly used to screen military recruits. It was the forerunner of the current Minnesota Multiphasic Personality Inventory.

From 1909 to 1915, 83% of all military service applicants were rejected from the armed forces. However, because of the war, the applicant pool was expanded, with modification of a few physical requirements and reduction of the age requirement (from 21 years to 18 years).[10] World War I medical screening produced 468 defective men per thousand. Defects consisted of orthopedic causes (39%), sense organ anomalies (12%), infectious causes (11%), and mental health issues (6%). In the last category, intelligence deficits had the largest percentage of applicants.[11] Rejection for neuropsychiatric reasons included more than 4% of applicants.

Intelligence testing became linked with the prediction of future performance. It was adopted during World War I for testing military recruits. The war was a major stimulus in the development of cognitive testing, which was used in processing American men through each induction station across the country at the rate of several thousand a day. Dr Robert Yerkes, then president of the American Psychological Association, proposed blanket intelligence testing for military recruits. The US Surgeon General considered Yerkes' proposal, even though the Navy refused. Subsequently, Yerkes was appointed director of the US Army Psychological Testing Corps and headed a task force of psychologists.[12]

The expansion of screening needs for the draft effort attracted hundreds of psychologists into the service to perform the testing. A paper-and-pencil survey, correlated to the standardized Stanford-Binet test, was developed for the US military. Testing screened for intellectual defectiveness and inappropriate career placement. In 1917 Yerkes—with the help of Lewis Terman, David Wechsler, and others—developed the Army's alpha and beta tests (alpha tests measured literacy and beta tests measured illiteracy).[13] This became the first group-administered and population-based usage of intelligence testing.

Approximately 2 million draftees received the tests. Civilian agencies, particularly universities, demonstrated interest in these screening methods and adopted similar entrance procedures. A flood of tests imitating the Army's tests appeared. Line officers found these test ratings useful when forming training groups. Also, they noted specific predictive elements of a draftee's ability to make training progress at 2, 4, and 6 months. After the war, testing remained of interest at recruit evaluation stations. There was a commitment to the continuance of military psychology in developing further screening methods. Interest focused on simplifying the examining procedure to diminish reliance on testing administration by psychologists.

Neuropsychiatric casualties were always a major problem, accounting for approximately 10% of disabilities. A large percentage of these casualties had symptoms present several years before service induction. Medical care and disability from the war cost $1 billion for more than 2.3 million World War I veterans.[14]

World War II

In 1940 careful evaluation of all selectees for psychological and psychiatric qualification was considered essential to the war. Rapid testing and classification of new recruits were critical to the buildup of US forces after Pearl Harbor. The usefulness of intelligence testing was fully accepted, and the goal was to reject all men who had a greater than average likelihood of having difficulty adjusting to rigorous military conditions. Adjustment difficulties and psychiatric conditions were rarely considered treatable, and were cause for

exemption from military service. It was estimated that approximately 1% to 2% of applicants had a form of mental illness barring them from military service, which should be detected through competent screening processes.[15]

Psychiatric evaluation for service suitability was a complicated endeavor. Opinions varied on the ability of screening measures to perform this task adequately. Different proposals arose from diverse screening philosophies and included acceptance of borderline cases for probationary training and acceptance of psychopathic individuals for selected services under special observation. Many researchers took a moderate view, citing the medical corps' reasonable ability to detect those applicants with existing neuropsychiatric disabilities. However, they doubted the medical corps' absolute capacity to detect soldiers who would break down under combat conditions.[16] Bowan[17] cited information from World War I, indicating a 5% general psychiatric illness rate in all applicants (with subsequent review, it was found to be 3%). However, less than half the disorders were detected in the selection process, but more could have been detected if a complete history had been obtained. He recommended that local draft boards obtain additional historical records from hospitals, schools, courts, and social service agencies. Other researchers disagreed (including Menninger[18]), believing that personal history—or even the presence of significant personality abnormalities—would be efficiently predictive of nonadaptability to military service. It was repeatedly shown that recruits who were maladjusted in their premilitary life—even those with a history of psychiatric treatment—could and did accommodate well to military service.[19]

In 1941 Harry Stack Sullivan was appointed as psychiatric consultant to the Selective Service. He directed planning of the draftee psychiatric examination to aid medical examiners at draft boards. First, local community physicians evaluated draftees for a medical screening examination. Then, those individuals found fit were advanced to an induction station (which was assigned at least one Army and one Navy medical officer) for final evaluation, including standardized intelligence testing.

Civilian psychiatrists were used frequently, because of the military psychiatrist shortages, and were responsible for conducting 50 examinations each day. In practice, this consisted of about 5 hours a day and equaled approximately 6 minutes per examination. In many instances, screening only required 2 to 3 minutes per applicant (if the applicant had good school and work records). Consequently, more time was made available to consider men for whom there was less certainty of successful training completion. If a decision could not be reached in 15 minutes, further observation was performed in a hospitalized setting. The differing screening philosophies and tests between the dual systems of the local draft board and induction stations were finally amalgamated into one examination standard. These changes resulted in Sullivan's resignation.[20]

Selection standards were high before the war and during mobilization efforts. However, this uniform standard underwent several revisions throughout the duration of the war. The Navy was more rigid in its enlistment standard and rejected more registrants than the Army psychiatrists. All men with actual psychiatric disorders, character flaws, or presumed inability to adapt were screened out, for an average psychiatric rejection rate of 10% to 15%.[19]

After the United States entered the war in 1942, a large Army was required. This resulted in the lowering of stringent screening standards. Examiners shifted rigid or liberal interpretations of existing induction standards based on manpower needs. Registrants were not considered fixed in one category, but were constantly screened and reevaluated. In April 1944, a war department directive emphasized accumulating evidence that many individuals with minor psychiatric conditions or personality flaws could be of service.[19] Those individuals who had originally been screened out were later reconsidered and were found to be good performers.[21]

Significant emphasis was placed on obtaining historical material for review when screening draftees. This material included legal, medical, educational, and mental health records. Screening selection methods were considered ineffective if solely based on brief examination. The most efficient assessment occurred when a longitudinal and/or functional history was made available. The Medical Survey Program was developed in 1943 to set up procedures to obtain historical information. For this endeavor, DSS Form 212 (Medical and Social History) was created. Completion of the form depended on the activity of medical field agents, usually trained social workers, who were scarce in number. The medical field agent obtained the information and forwarded it to the medical examiner at the induction station. Many of the forms used by psychiatrists in screening potential service members were significantly incomplete and addressed only pathological histories. Even if completed, they were too lengthy to be useful in review.

To partially address time efficiency concerns, a trained psychiatric social worker was placed in each induction station to review the form and summarize the information on a face sheet. However, because of persistent deficits in their completion, this program

was scaled down and used only when the local board had reason to suspect or knew of significant medical, mental, or social maladjustments. Despite the program's shortcomings, psychiatrists were unanimous in the assessed value that an effective program could have in the selection process.[20]

Because of the insufficient number of psychiatrists available to provide a thorough routine evaluation under significant time constraints, many general physicians were pulled into service as psychiatric examiners. To attempt greater efficiency of personnel resources, a group screening measure was created to reduce the number of inductees undergoing psychiatric interviews. Several induction station psychiatrists devised their own customized tests and screened for past and present symptoms, antisocial behavior, and psychosomatic manifestations.[20]

Dr John Appel, Chief of Preventative Psychiatry in the Neuropsychiatry Consultants Division of the Surgeon General's Office, attempted to validate a single screening device. The research branch of the Army's information and education division constructed a 15-item screen for the most common psychiatric problems in World War II, primarily psychoneurosis. Eight questions were added to screen for psychosis and antisocial dispositions. Those who passed were not required to undergo individual psychiatric examination. The Neuropsychiatric Screening Adjunct (NSA) was adopted for use at all induction stations by the end of 1944.[22]

The NSA never replaced the psychiatric interview and was administered as a data collection tool in association with the interview. NSA scores successfully selected 80% of those recruits to be diagnosed as psychoneurotic, with a miss rate of about 20%. The authors of the test concluded that the screening could have served an important role in selection efficiency, but they acknowledged the need for better standardization.[23]

A follow-up study to determine the effectiveness of the selection process was conducted by reviewing hospitalization rates. For neuropsychiatric disorders, 53% were diagnosed as psychoneurotic. A large percentage of those applicants who were discharged with a diagnosis of psychoneurosis had work sheets at the induction station that had evidence of psychoneurotic tendency or had been examined more extensively by two or more psychiatrists. Those individuals with a diagnosis of schizophrenia or bipolar disorder were consistently free of this evidence.[24]

Many of the service members who manifested disciplinary problems were discharged under administrative actions, and their records were not available for review. An investigation was conducted by the US Surgeon General's Office to evaluate NSA's predictive power in neuropsychiatric disabilities, but resulted in a poor outcome.[20]

Several postwar studies reviewed the overall efforts of neuropsychological screening.[21,25,26] Psychiatric screening failed as a primary method of preventing the great majority of losses caused by psychiatric disorders. However, induction screening eliminated those individuals with overt psychosis, mental retardation, and severe psychoneurosis from military service.

Recognition of induction screening limitations led to secondary screening at initial training centers. This effort expanded into preventative psychiatric interventions on individual and group levels.[27,28] Mental hygiene and personal adjustment lectures were standardized and distributed. Experimental retraining units, with the support of commanding generals, were created to retrain selected psychoneurotic soldiers. Seventy percent of the selected soldiers were made available for assignment, and the rest were separated from service.[14]

World War II accession standards were recognized as excessive and resulted in substantial and unnecessary loss of potential service members. The mental health criteria used in determining suitability were seen as being inadequate for predicting service performance.[20] Screening processes were unable to evaluate the most important factors influencing a soldier's adjustment: leadership, degree of motivation, type of job and unit assigned, and exposure to external stress. Greater proficiency could be accomplished by evaluating suitability for service under military conditions rather than strictly by screening procedures.

Experience accumulated in training centers and line commands caused a change in philosophy about the ability of individuals to withstand war stress. As manpower needs liberalized some of the induction psychiatric standards, it became evident that individuals with minor symptoms were still able to serve the war mission effectively. Emphasis was placed on the importance of longitudinal information in establishing the suitability of applicants, and only those individuals with clear evidence of incapacitating dysfunction were disqualified from military service.[19,20] Unsuitability rested on clear evidence of disability, and openness to trial service was supported. Liaison with classification and assignment sections placed inductees where they were best suited and also placed those individuals into service who might otherwise have been rejected during entry screening. These findings appeared in the War Department's *Technical Bulletin 33*. Thus, many induction stations reexamined their applicants and found that more than 50% were acceptable; these were subsequently inducted. One study investigated attrition of these soldiers and found that, after 1 year, 80% of them remained in military service.[20] In addition,

many of these soldiers were capable of satisfactory performance for prolonged periods of time.[29] By the end of the war attitudes about psychiatric screening had changed. For the first time, mild mental deficiencies were considered acceptable, with historical evidence supporting the capacity to adjust and render good military service.

Post-World War II

After the war, psychiatric screening procedures were modified. Psychiatric evaluation was integrated into the general medical examination with the intention of identifying and disqualifying only gross psychiatric disabilities. Supplemental psychiatric screening aids were discontinued. If there was a question concerning an applicant's suitability, a consultation for a full psychiatric evaluation was warranted for final military service determination. Any applicant who was not incapacitated by personality flaws in civilian life and who otherwise demonstrated stability was acceptable for service. In the 1950s, as a result of further policy development in accordance with field findings, the disqualification rate for psychiatric causes dropped from 5.5 to 1.9 per 1,000 applicants.[30]

In 1954 psychiatric disorders were less than half the rate of 1950, primarily as a result of the Korean War. These decreases occurred mainly among affective disorders, personality disorders, and behavioral disorders. However, the admission rate for psychotic disorders remained the same. An increasing emphasis was placed on both preventative and therapeutic psychiatry in outpatient settings.[31]

Danielson and Clark[32] designed a screening tool in 1954, the Fort Ord Inventory, to detect affective disturbances that would impair military service. They tested 15,000 Army recruits, finding four scales that were valid in differentiating between those with poor adjustment qualities and those with leadership potential. In 1961, Jensen[33] used an 82-item questionnaire with more than 9,000 male Air Force recruits and found areas relating to training failure.

In 1962 Plag[34] published results from a 195-item questionnaire administered to 20,000 Navy recruits, finding several variables linked to training. In 1965 Plag and Arthur[35] published another study in which 134 Navy recruits, believed to be mentally unsuitable for military service, were specifically retained, trained, and then placed in the fleet. Seventy-two percent of that group remained functional in active duty at 2 years' follow-up, compared with 86% for a control group matched for age, aptitude, and education level. Plag and Arthur believed the capacity for successful duty for this group was related to their ability to achieve emotional growth within the military environment, the fleet's ability to use specific services of marginal enlistees, and the fleet's initial transient training difficulties.

Lachar et al,[36] in 1974, used two testing measures: (1) the Psychological Screening Inventory and (2) the History, Opinion, and Interest form on approximately 15,000 male Air Force recruits. They identified a high-risk group with an adaptation index that demonstrated a 50% accuracy in identifying recruits who did not complete basic training. Lachar promoted a tiered approach to screening and utilization of screening not only for unsuitability but also for identification of potential recruits who would respond to training modalities that integrated behavioral modification and group dynamics.

In 1975 the Air Force used the History, Opinion, and Interest form as part of a research-screening program conducted over the course of a year. The result was the Air Force Medical Evaluation Test Program (AFMET), which involved a three-phase screening program. Additional modifications produced the AFMET that is used in the Air Force today.

Efforts were made to supplement or replace the reliance on education credentials for service determination in the 1980s. Biographical and temperament indications were increasingly favored. The Army developed a self-reporting instrument called the Assessment of Background and Life Experiences. It screened motivational factors and was correlated with first-term attrition and performance. This instrument produced false negatives and was never used as a pilot program. With further development, a 30-minute self-report model called the Assessment of Individual Motivation was created.[37] This model measured dependability, adjustment, dominance, achievement orientation, agreeableness, and physical condition. Recruits who scored low were considered higher failure risks. Findings showed little overlap with the Armed Services Vocational Aptitude Battery or history of education.

In 1988 a study of approximately 340 enlisted airmen referred for command-directed evaluation was reported by McCraw and Bearden.[38] They emphasized the need for early identification and separation of unsuitable recruits to minimize increasing technical training costs. These airmen were described as unmotivated for continued service and unresponsive to therapeutic interventions. Early indications of reduced adaptability were present in mental health evaluations while in basic training.

Each branch of the military manages its own behavioral research program and is involved in evolutional revisions of accession standards and induction screening.

MILITARY ACCESSION PSYCHOLOGICAL SCREENING TODAY

To sustain the current military force, an annual recruitment of approximately 200,000 enlisted personnel is necessary. There are two components of psychological screening used in considering accession of these military applicants. The first component involves assessing aptitude using the Armed Services Vocational Aptitude Battery. Four of the 10 Armed Services Vocational Aptitude Battery subtests are combined into the Armed Forces Qualification Test (AFQT) score, which is a cognitive measure estimating a recruit's intelligence capacity.

The second component involves determining educational achievement, specifically high school graduation or an equivalent achievement level. Congress sets accession quality standards, based on a DoD attrition mathematical model, that link educational attainment, aptitude, and recruiting resources to job performance within a particular cost setting. This model is based on performance using a standard obtained by the 1990 enlisted recruit cohort during the last national engagement in large-scale combat. Educational attainment with high school graduation has been the strongest predictor of finishing a service term, followed by an AFQT score in the upper 50%.[39]

High-quality recruits have a high school diploma and score in the top 50% on the AFQT. Since 1973, accessions for high-quality recruits have increased from 30% to 60% across services to 60% to 80%. In 1994 those recruits with a high school diploma and a 50% AFQT score were 68% of all recruits accessed (96% had a high school diploma and 72% had an AFQT score of more than 50%).[40] Comparatively, in 1997, 75% of all youth aged 18 to 23 were high school graduates. Historical evidence indicates that, if DoD did not target these higher quality recruits, attrition rates would almost certainly be higher and would result in an overall lower level of service performance.[39]

There are no specific testing measures used to further assess personality and other psychological dimensions in screening processes before accession into any military service.

AIR FORCE SCREENING PROGRAM

Approximately 30,000 recruits per year enter the US Air Force for a 6-week basic training course. The AFMET is used in further screening trainees for service suitability. Phase I of the AFMET uses a revised History, Opinion, and Interest form—the Biographical Evaluation and Screening of Troops (formally named the Navy-Air Force Medical Evaluation Test)—on the second day of basic training and measures seven historical areas: (1) family, (2) school, (3) alcohol, (4) legal, (5) antisocial behaviors, (6) depression, and (7) mental health treatment. Approximately 93% of the recruits are at low risk for mental health issues.[41] The remaining recruits are evaluated in phase II using additional testing and a mental health interview performed by a mental health technician. Of the total number of referrals for phase II evaluation, only 20% are from the AFMET screening process. The majority of these referrals come from medical providers (33%), military chaplains (24%), job counselors (14%), and command (9%).[42] Issues addressed during phase II include emotional stability, social aptitude, perseverance, responsibility, suicidality, anger, and childhood abuse. Additionally, the previously identified historical dimensions from phase I are explored in greater depth. Then, a clinical psychologist reviews the testing and interview report. Of those tested at phase II, 65% are identified as low risk and continue training.[41,42]

Approximately 1% to 2% of all trainees are forwarded to phase III, which includes additional psychological testing using the Minnesota Multiphasic Personality Inventory, and undergo clinical evaluation by a psychologist or psychiatrist.[42] One third of those evaluated in phase III are separated from military service because of sufficient evidence of impairment.

According to AMSARA data, the Air Force's attrition rate is lower by 4% to 5%; the Air Force also has the lowest medical and psychiatric waiver approvals and the highest proportion of psychiatric hospitalizations and comparable 2-year psychiatric disability discharges.[7] However, currently available data lack uniformity and make interservice comparisons difficult.

The Air Force program applies the principles of psychological casualties within its testing rationale with the principles of proximity, immediacy, and expectancy in personnel management. Testing is matched with interventions to normalize the stress reactions in training and to prevent identification with the patient role. One third of all Air Force mental health-related discharges occur during the first 6 weeks of duty. A conservative cost analysis of the Air Force trainee screening process by the Behavioral Analysis Service reported a savings of a quarter of a million dollars, but did not integrate cost assessments projected beyond basic training. The most common diagnostic categories for those separated are depressive conditions (31%), adjustment disorder (20%), posttraumatic stress

disorder (19%), and alcohol abuse/dependence (8%).[42] Female recruit representation in separations exceeds by 25% what would be expected, compared with the population. This may reflect higher prevalence of the most common diagnostic condition separations, which include depressive disorders and increased exposure to childhood abuses. The increased likelihood of male recruits being administratively separated for legal and performance issues may also offer an explanation. The majority of those recommended for return to duty were diagnosed with adjustment disorder (63%) or no code (34%).[42]

OTHER SCREENING INITIATIVES

A preimplementation pilot program was launched by the US Army Research Institute from September 1998 to May 1999, which tested more than 25,000 regular Army soldiers and an Air Force sample with the Assessment of Individual Motivation test.[37] This showed that trainee attrition rates of those who scored in the lowest 10% were three times greater (22% vs 6%). The false-negative rate remains a concern. A new experimental pilot program for expanding the recruitment market was initiated in February 2000 at selected military entrance processing stations using high Assessment of Individual Motivation scores as a replacement for lack of a high school diploma. Those selected trainees will be placed in the GED Plus Program, an educational intervention program that enables applicants who currently do not possess a high school diploma or high school equivalency certificate to be sponsored by a service branch to obtain a GED for enlistment purposes. The program ran through September 2003.

In 1999 the Navy Personnel Research, Studies, and Technology Department launched a new screening model known as the High Performance Predictor Profile. This model screened for low-attrition characteristics of applicants who did not graduate from high school. Those selected trainees were tracked during their initial 4 years of service.

There has been interest expressed in improving disclosure and overall flow of historical information to medical officers at military entrance processing stations. This will assist them in making more informed qualification determinations. Two new medical screening forms—DD Form 2807-1 (Report of Medical History) and DD Form 2807-2 (Medical Prescreen of Medical History Report)—were created to replace DD Form 2246 (Medical Prescreen Form), and they were approved in August 2000. This updates medical screening for the most common types of medical separations for recruits in accordance with Public Law No. 105-85, Div. A, Title V, S532. These forms have several original inclusions, namely a warning statement for falsifying information, a request for information about and consent to contact previous medical providers/insurers, and the requirement of a recruiter signature. Furthermore, these forms expand questioning about mental health treatment.

GAO has recommended updating the high performance predictor profile model for relating recruit numbers to costs, quality, and attrition. AMSARA is creating more attrition models to predict attrition and improve the monitoring capacity of any applied interventions designed to reduce attrition. Measuring long-term outcomes ensures that actual attrition reduction occurs and is not delayed into later periods of service.

The Presidential Review Directive (from November 1998) established a Recruit Assessment Program to develop and maintain health and risk factor information on all recruit and officer accessions.[43] Collected data are used to evaluate predisposing factors that identified later development of disease and injury.

EFFECTIVENESS OF SCREENING AND OTHER INTERVENTIONS

Individualized screening tools are self-reported instruments, and they are vulnerable to faking and coached testing flaws. These tools are generally weak predictors and have limited efficiency in identifying recruits at induction who will demonstrate poor performance in the military.

There is an illusion of objectivity—when symptoms and individual characteristics are identified and displaced from individual contexts—that determines overall functioning capacity. Military history has demonstrated limited success in predicting draftee performance by estimating independent personal qualities. The established requirements of inducting a greater proportion of recruits with a high school diploma reflect relevant personal capacities, academic abilities, and social skills. Accomplishment measures of integrated individual functions are predictive of long-term performance. Replicating this functional assessment with psychological testing is difficult to do in a cost-effective manner.

DoD studies have repeatedly confirmed that screening for high school diplomas or 2 years of college is the best predictor of attrition and service performance, followed by AFQT scores.[7,44] The GED identifies people who have, on average, similar basic cognitive skills to high school graduates. It does not reflect noncognitive

characteristics that are related to performance and thus effectively duplicates what the AFQT measures.

Efforts are being made by military behavioral science research programs to develop additional screening instruments, including measures that supplement the predictive power of the high school diploma and AFQT score. Such endeavors might result in small gains to expand the recruitment pool and reduce attrition. Even with increased quotients of those who have graduated from high school and who had appropriate AFQT scores, first-term attrition remains more than 30%. Does this attrition rate reflect recruiting and screening issues or practices that impact retention? Expanding screening measures will not adequately address recruit attrition concerns. Furthermore, to add measures to select service members when the numbers of an applicant pool are limited will exclude a potential group still capable of satisfactory performance, as demonstrated throughout US military history. Rather than screening and separating out individuals, efforts to reduce attrition and improve retention would be better served in developing interventions to improve adaptability and retention of high-risk trainees.

New recruits face novel social and occupational environments, with emphasis on physical demands and social conformity. The prevalence of adjustment disorders in the stressful environment of basic training is high. A variety of reactions that can lead to separation occur with adjustments. Evaluation of whether an adjustment reaction or disorder is indicative of unsuitability for further military duty is dependent on a wide variety of individual factors,[42] including the following:

- mental health history,
- family history,
- trauma history,
- adaptation skills,
- personality composition,
- severity of symptoms,
- presence of other psychosocial stressors,
- motivation for continued service, and
- safety factors.

Using induction screening measures to evaluate these relevant factors outside of specific individual contexts will limit prediction. Evaluation must occur in realistic military environments.

The Air Force uses mass screening of all recruits with the Biographical Evaluation Screening of Troops Test to identify individuals unsuitable for military service after induction. Yet the vast majority (80%) of individuals are referred for psychiatric evaluation by a variety of individual contact sources during their performance in a military training environment. From all referrals, only one third of 1% to 2% undergo more extensive psychological or psychiatric evaluation and are ultimately separated from military service. Arguably psychological testing would not contribute significantly to the general service provided by each behavioral clinic in each of the service's training centers, which function essentially similarly to phases II and III of the AFMET. Just as the high school diploma and AFQT score stand alone as the best predictors of reduced attrition risk, basic training serves as its own screening instrument to identify recruits unsuitable for military service or who may benefit from additional training interventions.

To define why some recruits do well and others do poorly, a model of individual behavioral health is necessary to explain and predict resiliency or the lack of it. What screening tools can provide is a quick source of relevant psychological information for identifying recruits at higher risk of impaired adaptability and attrition, which can then be coupled with training interventions. Just as the military identifies physical defects that need remediation, why not identify milder psychological defects and deficits that can be identified and potentially remediated with preventative or treatment interventions? If larger scale preventative and treatment interventions were used, it would be imperative to follow their outcomes and integrate empirical evidence into accession standards through AMSARA and similar service agencies.

We advocate not changing military standards, but rather applying principles of primary and secondary preventative psychological interventions and the lessons learned from military history. Creating interventions and integrating specific types of psychological training (designed as adjuncts to military training) could facilitate adaptation and inoculate against stress. These initiatives might include simple cognitive training, stress management, group process, as well as identifying potential vulnerabilities and developing individualized plans. This may produce a greater benefit with the personnel and financial resources currently available. Focusing on environmental risk and protective factors in adaptation may produce better training outcomes and foster retention.

SUMMARY

There is not an inexpensive screening tool with adequate predictive validity and reliability to identify individuals at high-risk of attrition before they enter military training and service. The best predictor of success in the military is still a high school diploma or 2 or more years of college. Shifting efforts and resources to

training interventions and retention issues may reduce first-term attrition. The concept of rehabilitation and adjunctive training is supported by the DoD and has occurred in a multitude of medical areas (eg, management and prevention of stress fractures). While maintaining rigorous standards, can we train recruits up to a standard and assist in their adaptation to the stress of military training and service in a way that will improve long-term functioning, reduce attrition, and potentially increase retention? Even beyond mere adaptation and adjustment issues, with current psychological and psychiatric treatments available, is it possible to focus on preventative measures and even treat mild psychiatric conditions early in a service member's career, rather than discharging that individual and losing the financial and personnel resources that have already been invested? These are important issues that still need further consideration and evaluation.

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