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Stress Management Training for Military Trainees Returned to Duty After a Mental Health Evaluation: Effect on Graduation Rates

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A significant proportion of people entering the military are discharged within the first 6 months of enlistment. Mental health related problems are often cited as the cause of discharge. This study evaluated the utility of stress inoculation training in helping reduce the attrition of a sample of Air Force trainees at risk for discharge from basic military training. Participants were 178 trainees referred for a psychological evaluation from basic training. Participants were randomly assigned to a 2-session stress management group or a usual-care control condition. Compared with past studies that used less rigorous methodology, this study did not find that exposure to stress management information increased the probability of graduating basic military training. Results are discussed in terms of possible reasons for the lack of treatment effects and directions for future research.

The Department of Defense must annually recruit approximately 200,000 young adults for the active-duty armed forces to sustain the United States' ability to effectively pursue national security interests. A number of trends are evident suggesting that meeting this requirement has become more difficult in the 1990s. The proportion of young men and women who express an intention to serve on active duty in one of the military services has declined across the past decade (Cohen, 1998). The percentage of military recruits who score in the top half of the Armed Forces Qualification Test has dropped from 86% in 1990 to 79% in 1997 (McGinty, 1998). In recent testimony to Congress, the Chairman of the Joint Chiefs of Staff reported that the strong economy in the United States is draining the military of its most talented workforce ("Joint Chiefs," 1998). Studies conducted by the U.S. General Accounting Office in the last 2 years have focused attention on the high attrition rate of young people who do choose to enlist in the military (Scarborough, 1998; U.S. General Accounting Office, 1997). Results showed that approximately one third are discharged before completing their first tour of duty. These observations underscore the considerable

importance and challenge of recruiting and retaining people in today's military.

The indoctrination process for transforming civilians into military service members begins with a 6- to 12-week basic military training course. The goals of basic military training (BMT) are to develop loyalty, self-discipline, physical fitness, self-confidence, pride in service, and military values in new trainees. The tools used by BMT instructors to achieve these goals are varied. They include academic and field instruction, physical training, inspections, emphasis on teamwork, drill and parade practice, as well as intimidation and fear. Novaco and colleagues (Novaco, Cook, & Sarason, 1983) provided an excellent discussion of the psychological challenges faced by new recruits in adapting to BMT. They noted that the transition from civilian to military member is often accompanied by a sense of loss and disappointment. Recruits are stripped of personal control and must quickly assimilate entirely new standards of behavior to avoid aversive consequences. Coping strategies relied on by recruits in the past may be ineffective or not permitted. Familiar sources of support such as family and friends are not available. Rather, success in the BMT environment requires that the recruit develop effective working relationships with peers. BMT is purposefully designed to face new trainees with physical, emotional, and cognitive challenges. Perseverance through these difficulties develops the self-respect and teamwork that promotes success in future challenges.

The difficulty of retaining young people in the military begins in BMT. Attrition rates in the first 6 months of enlistment have ranged from 9% to 16% in the last decade (U.S. General Accounting Office, 1997). For example, in fiscal year 1997 about 9% of

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all young people entering the Air Force (3,134 out of 34,321 total accessions) were discharged from BMT prior to graduation. These figures represent a minimum of \$30 million in Air Force recruitment and training costs lost to attrition within the first 2 months of enlistment. Not surprisingly, at least one fourth of all discharges were the result of a mental health related problem. Researchers studying attrition in entry-level military populations have identified a number of individual risk factors for nonadaptation. Examples include below-average self-confidence and stress tolerance (McCraw & Bearden, 1990), anxiety sensitivity (Schmidt & Lerew, 1998), depressed mood (Lubin, Fiedler, & Whitlock, 1996), and history of sexual abuse (Smikle, Fiedler, Sorem, Spencer, & Satin, 1996).

Our research has found that about one third of trainees referred for a psychological evaluation from BMT are recommended for discharge from the military because of a history of mental health problems, low stress tolerance, or severe adjustment problems in training (Cigrang, Carbone, Todd, & Fiedler, 1998; Staal, Cigrang, & Fiedler, in press). In general, trainees recommended for discharge represent screening failures. Many have a history of medical or behavioral problems that, if disclosed at the time of their application for military service, would have resulted in denial of enlistment. The remaining two thirds of referred trainees are returned to training but have a high rate of subsequent attrition (Carbone, Cigrang, & Todd, 1999). About 42% to 45% are later discharged after being returned to training, despite being judged mentally suitable for military service. Although the type of subsequent discharge varies, our clinical impression of these trainees is that the vast majority feel overwhelmed by demands of the training environment and lack confidence in their ability to cope with stress (Cigrang et al., 1998). When we empirically examined predictors of discharge for this group of trainees, we did find that a trainee's expressed level of motivation and optimism concerning graduation was strongly related to success, with the odds of graduation for optimistic trainees being at least 1.6 times higher than pessimistic trainees (Carbone et al., 1999).

These findings suggest that an intervention aimed at bolstering a trainee's confidence and skill in managing stress may increase the likelihood of success and thus help reduce costly attrition. Unfortunately, there is little reference literature available that has evaluated psychologically based interventions for improving the adaptation and performance of students in stressful training environments. Our review

of the literature yielded four studies that were conducted in military training settings (Backer, 1987; Georgoulakis, Bank, & Jenkins, 1981; Gerwell & Fiedler, 1990; Novaco et al., 1983) and four in civilian training settings (Backman, Arentz, Levin, & Lublin, 1997; Deikis, 1983; Foley, 1987; Hytten, Jensen, & Skauli, 1990). The studies differed in methodological rigor, choice of dependent measures, and results obtained.

Two of the military studies were conducted in Marine BMT. Novaco et al. (1983) developed a 35-min videotape for use with Marine trainees during the in-processing phase of training. The video normalized trainees' emotional reactions, provided information on the training environment, encouraged the use of adaptive cognitions, and modeled successful coping techniques. Five hundred thirty trainees were randomly assigned to the coping skills film condition, a comparison film condition, or no intervention. Viewing the coping skills film led to increased expectation for success in training compared with the other conditions. Unfortunately, the study did not report the effect of the intervention on any measures of actual training performance, including graduation rates. In a second study of adaptation to Marine BMT, Backer (1987) randomly selected 84 new trainees and assigned them to three sessions of stress inoculation training (SIT; Meichenbaum, 1985), three sessions of a discussion group, or no treatment. The dependent measures included a variety of training performance indexes as well as self-report questionnaires. The study found no differences after treatment between groups on any measures, and all participants graduated training successfully.

Backer (1987) and Novaco et al. (1983) randomly selected participants from the general recruit population. Military trainees who are at an elevated risk for adaptation difficulties may be more likely to benefit from a stress management intervention. Georgoulakis et al. (1981) attempted to evaluate this hypothesis by identifying 269 incoming U.S. Army basic combat trainees as vulnerable to attrition on the basis of their responses to a screening questionnaire administered during training orientation. The trainees were then randomly assigned to supportive individual counseling with a mental health technician or to a no-treatment control condition. Subsequent graduation rates of treatment and control group participants were virtually identical. A factor that confounded the interpretation of results was that many of the control group participants (38%) also received similar counseling after being referred from training by their commander. Post hoc analyses did suggest a benefit

of counseling for improving graduation probability when all participants who had received counseling, regardless of initial group assignment, were compared with those who had not. However, the lack of experimenter control over assignment of participants to counseling renders this finding questionable.

A study conducted in Air Force BMT (Gerwell & Fiedler, 1990) examined whether participation in a two-session cognitive-behavioral oriented support group would enhance graduation success for trainees who had been referred for a mental health evaluation. The support group was offered to 436 trainees over a 5-month period, and 249 trainees (57%) subsequently participated. The graduation rate of trainees who attended the group was later compared with the "no-shows" (i.e., trainees who did not attend) and was found to be significantly higher. Again, the methodological problem of self-selection to conditions severely limits the usefulness of the study findings.

There is a growing literature on the use of stress management interventions in civilian occupational settings (for reviews, see Bellarosa & Chen, 1997; Ivancevich, Matteson, Freedman, & Phillips, 1990). However, few studies have been conducted in a challenging training environment analogous to BMT. A study of 85 civilian police trainees conducted by Backman et al. (1997) evaluated the effects of mental imaging training on self-reported psychosocial functioning and physiological factors including stress hormone levels. Trainees were randomly assigned to a treatment or no-treatment control condition at the beginning of their final term at the police academy. Treatment consisted of 20 hr of group instruction in stress theory and relaxation methods provided over a 10-week period. Trainees were exposed to images of stressful police situations as a means of practicing relaxation and stress management skills. At the conclusion of the program, trainees who received treatment reported improved perceptions of general health, reduced sleepiness, and reduced stomach symptoms in comparison with trainees in the control group. The effect of the program on performance in the academy or in actual police situations was not reported.

Deikis (1983) evaluated the effects of SIT or relaxation training compared with no treatment on performance of a difficult underwater task in three groups of scuba diving students. Using a quasi-experimental design, the study failed to find any difference between the groups on task performance, although there was a trend for treated participants to report less anxiety and increased self-efficacy. A study

by Hytten et al. (1990) also evaluated the usefulness of SIT as preparation for anxiety-provoking training. Seventy-seven future offshore oil workers were randomly assigned to 1 hr of SIT or no treatment prior to participation in two training tasks. One task involved navigating through complex, smoke-filled surroundings using diving equipment. The second involved four lifeboat free falls from an oil rig. Students exposed to SIT seemed to perform somewhat better during the smoke diving task, requiring less help from the instructor and using less oxygen, but they also reported greater anxiety. In contrast, treated and control group students did not differ on report of anxiety during the free fall training. Treated participants did report greater acceptance of the free fall lifeboat concept.

Foley (1987) identified a subgroup of 64 first-year nursing students who reported an above-average level of current stress in response to the nursing program. Students were randomly assigned to 180 min of SIT or a waiting list control group. Treated participants reported declines in self-reported anxiety and negative thoughts compared with the control group, but no difference was found on subsequent exam performance.

In sum, the studies reviewed above provide mixed support for the benefit of psychological interventions for students faced with a stressful program of training. Several of the studies have serious methodological limitations or do not include measures of actual training performance. More research is clearly needed to help determine the types of training settings and student populations that would benefit from stress management interventions. The purpose of the present study was to evaluate whether exposure to stress management information and strategies in a structured group setting would improve the graduation success of young men and women in the early stages of basic military training. The study targets a subgroup of the training population who are at risk for attrition based on their referral for a mental health evaluation.

Method

Participants

Participants were 178 entry-level military trainees (65 women and 113 men, *M* age = 20.1 years, range = 17 to 31 years) referred for a psychological evaluation from Air Force basic training and recommended for return to duty. Seventy-five percent of the participants were Caucasian, 16% were African American, 6% were Hispanic, and the remainder (3%) were classified as "other ethnic." Referral sources included physicians and physician assistants (44%),

job counselors (17%), chaplains (15%), a mental health screening program conducted during trainee orientation week (13%), military commanders (10%), and self-referral (1%). The majority of participants (80%) were in the 1st or 2nd week of the 6-week training course when referred for evaluation. Most had received a diagnosis of adjustment disorder (62%), and the remainder had no mental health condition identified. No participants had been diagnosed with a personality disorder.

Procedure

After completion of the evaluation, participants were randomly assigned to either a control condition (84 participants) or to treatment (94 participants). All of the participants were returned to their training squadron the same day. Treatment group participants were given an appointment slip showing the time and dates of two follow-up classes and were directed to inform their military instructor of the mandatory appointments. Classes were scheduled either the same week of the evaluation or early the following week. Treatment and control group participants were compared on demographic variables (age, marital status, race, and gender) and diagnosis (adjustment disorder vs. no disorder), and no significant differences were found.

Control. Participants assigned to the control condition received "usual care" for trainees returned to duty after a mental health evaluation. Trainees received brief (5–15 min) problem-oriented advice and verbal encouragement from the psychologist at the conclusion of the evaluation. The conclusion included a discussion of the psychologist's rationale for recommending return to training and additional coping advice as needed or requested by the trainee. The trainee was then returned to his or her training squadron. In the highly standardized training environment, all trainees have the option of requesting an appointment to speak with a military chaplain. There are no other formal counseling services available to trainees while in basic military training.

Treatment. Participants assigned to treatment returned to the Behavioral Analysis Service for two 90-min classes held on separate days. The classes were taught alternately by the first and second author and focused on coping efforts in basic training. Classes were structured to cover specific topics, yet also allowed interaction among participants and opportunities for interpersonal learning. A treatment manual was developed for use by the instructors. Stress was defined as a possible outcome of the balance between coping resources and current demands. Participants were encouraged to identify and share coping resources they had found helpful. Participants were provided education and practice in relaxation training, problem solving, and self-instruction skills consistent with Meichenbaum's (1985) stress inoculation training model. The relaxation component included instruction in deep breathing and progressive muscle relaxation. We taught a problem-solving approach to stress by having the class identify potential coping responses to real training situations faced by participants, discuss the potential consequences of the responses, and then choose the best alternative to implement. Finally, participants were sensitized to the important role that self-talk has in the experience of stress. Participants discussed stressful situations that occurred in training and were helped to identify alarming self-talk that may have contributed to their distress. The class then identified more reassuring self-statements

that could enhance their coping efforts. In addition to study participants, each class was attended by the one or two trainees assigned to help with escorting referred trainees. These nonreferred trainees were in a later stage of training and were usually quite motivated and excited about their military enlistment. Nonreferred trainees were included in the classes to serve as positive role models and sources of helpful information for referred trainees.

Outcome Data

The outcome variable of interest was graduation from basic military training. This information was obtained by examining a personnel database of all types of discharges from training. If a participant was identified as discharged prior to graduation, the date and type of discharge were recorded.

Results

A total of 17 two-session classes were held over a 10-week period. Average number of participants per class was 6. Attendance was relatively good considering the participants' busy training schedule. Of the participants assigned to the class, 59% attended both sessions and 87% attended at least one session. Only 13% failed to show for both sessions.

Overall graduation percentage rate for participants was 55%. Thus, 45% of participants in the study were discharged from the military without completing basic military training. Treatment and control group participants did not differ in graduation rate. Fifty-two percent of treated participants graduated training, and 58% of control group participants graduated. This difference was not statistically significant, $\chi^2(1, N = 178) = 0.69, p = .41$. The relationship between number of class sessions attended (zero, one, or two) and graduation was evaluated for all participants, irrespective of group assignment. This result was also not statistically significant, $\chi^2(2, N = 178) = 1.36, p = .51$.

Distribution of discharge types for treatment and control groups is shown in Figure 1. Forty-five of the total 80 discharged participants were separated from the military because of a medical problem that was judged to have existed prior to enlistment (29%) or due to self-declared homosexuality (28%). Eleven percent received a mental health discharge, 10% were discharged because of a fraudulent enlistment, 8% received a discharge because of performance deficits, and 6% were discharged because of misconduct in training. Although the pattern of discharge types shown in Figure 1 suggests a difference between groups, this difference was not statistically significant, $\chi^2(6, N = 178) = 3.89, p = .67$.

The relationship between participants' demographic and diagnostic variables and graduation

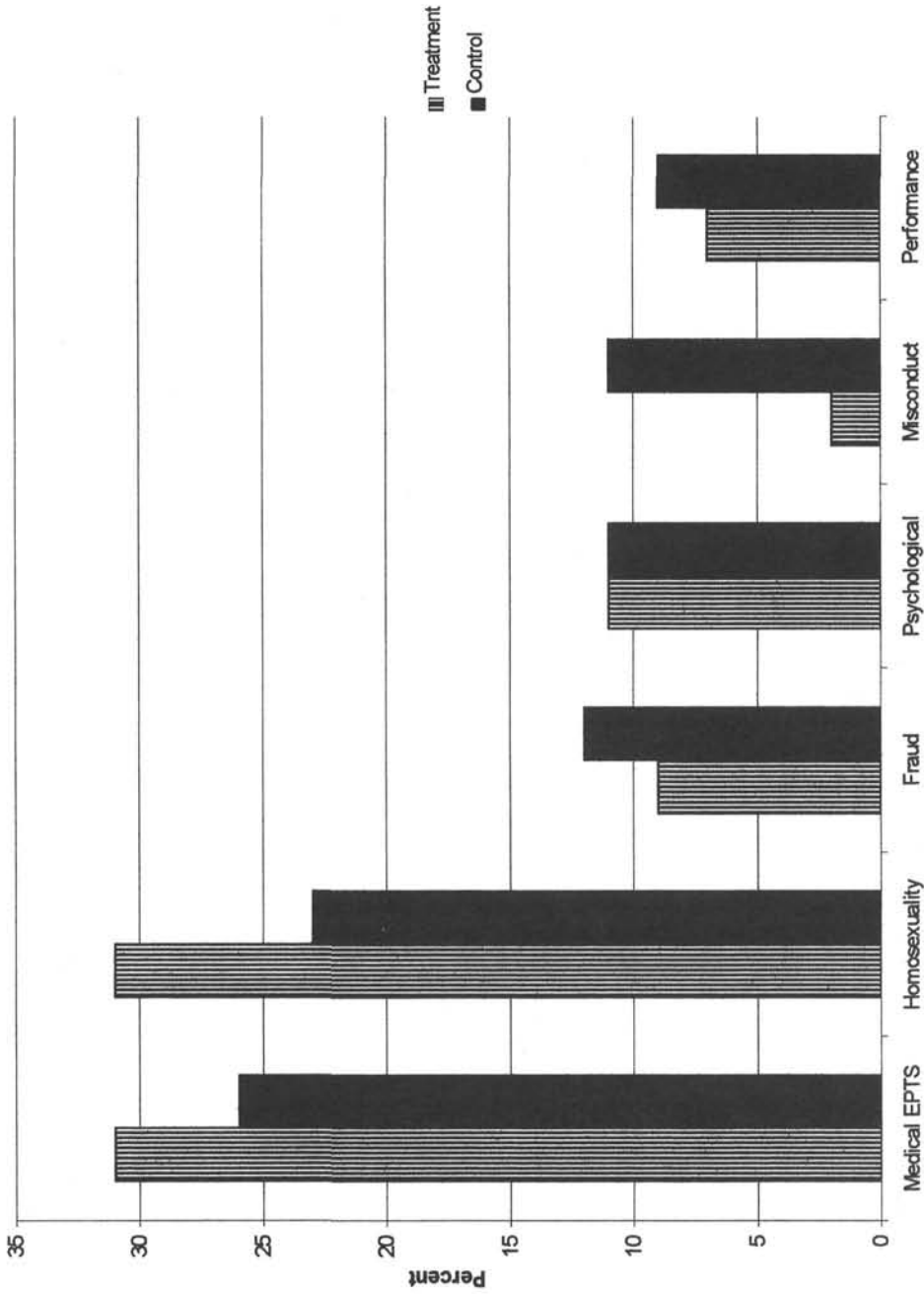


Figure 1. Distribution of type of discharge for treatment and control groups. EPTS = existed prior to service.

outcome was evaluated using univariate analyses. Gender, marital status, ethnicity, and age showed no relationship with graduation outcome. Diagnosis of an adjustment disorder was associated with a lower likelihood to graduate training, $\chi^2(1, N = 178) = 4.14, p = .042$. Seventy percent of discharged participants had received a diagnosis of adjustment disorder compared with 55% of participants who graduated.

Discussion

The probability of graduating military basic training for trainees seen for a psychological evaluation was not improved by exposure to 90 to 180 min of stress management information and strategies in a small-group setting. This result differs from the positive effect on graduation obtained in quasi-experimental studies (Georgoulakis et al., 1981; Gerwell & Fiedler, 1990) but is the same as the result obtained by Backer (1987) in a randomized treatment outcome study. The direction of the difference in graduation rate between the groups in the present study did not favor the trainees who attended the class. Thus, a larger sample size would probably not have altered the study outcome. On the basis of our total sample size of 178, the statistical power of the study to identify what we would consider a clinically significant (20%) difference between groups in proportion of trainees graduated was .76 (two-tailed test, $p = .05$).

The majority of the discharged participants left the Air Force because of persistent complaints of a medical condition that reportedly existed prior to service ("EPTS"), self-declared homosexuality, or continued mental health difficulties. This pattern of discharge types from basic training has remained stable for many years. The results are identical to our findings with a sample of 267 trainees discharged after being returned to duty from the Behavioral Analysis Service (Carbone et al., 1999) except that in the present study the proportion of discharge based on homosexuality was higher (28% vs. 15%). The increase in homosexuality discharges found in our sample was also evident in the overall discharge pattern for the population of Air Force trainees during the study time period. The reasons for the higher proportion of homosexuality discharges are not clear. The military does not ask a trainee about his or her sexual orientation. Thus, these discharges were all initiated by the trainee. Trainees with a homosexual orientation may have been genuinely uncomfortable in the military environment and sought a discharge. The unusually high proportion of homosexuality discharges also suggests that some trainees fabricated

a homosexual orientation to escape their obligation to the military. More recent discharge data (from 1999) have shown that the proportion of discharges from basic training due to homosexuality has declined considerably.

Why did the intervention have no influence on graduation rates? One factor that may have contributed to the absence of an effect was the short length of treatment. One to two sessions would be considered a very limited exposure to treatment in the psychotherapy literature (Howard, Kopta, Krause, & Orlinsky, 1986; Seligman, 1995). A recent meta-analytic review of the effects of stress inoculation training found that the benefits for reducing performance anxiety increased as the number of sessions increased (Saunders, Driskell, Johnston, & Salas, 1996). It is interesting to note that a similar relationship was not found with actual performance, suggesting that a reduction in anxiety does not necessarily translate into improved performance. Regardless of the potential advantage to a greater number of sessions, the availability of time in BMT is very limited. Attending a stress management intervention is typically at the expense of other training-related tasks. Extending the number of sessions in the present study may have gained an effect but would have been logistically very difficult. Participant attendance at additional sessions would probably have declined further.

Related literature in the areas of optimism, motivation, and behavior suggests another explanation for the lack of findings. Dispositional optimism is associated with an active, problem-solving response to life difficulties, whereas a pessimistic attitude is more likely to lead to disengaging and giving up on efforts to achieve a goal (Aspinwall & Taylor, 1992; Carver, Scheier, & Weintraub, 1989; Scheier & Carver, 1992; Scheier, Weintraub, & Carver, 1986). Although we did not include a measure of optimism in the study, our previous research with military trainees referred for a mental health evaluation has shown that the majority are quite pessimistic about their likelihood of graduation and are wanting to leave the training environment (Cigrang et al., 1998). Thus, attempting to engage them in an intervention that teaches active coping methods may have had a low likelihood of success.

The literature on how and when people become motivated to change problem behaviors may also be relevant (Prochaska & DiClemente, 1982; Prochaska, DiClemente, & Norcross, 1992). Prochaska and colleagues' stages of change model begins with a precontemplative stage. Persons in a precontemplative stage do not express a motivation to change their behavior in the foreseeable future and typically would

not present for help unless coerced by someone else. The second stage, titled contemplative, is a stage during which people are aware of a problem, are considering change, but have not made a commitment to take action. These stages seem applicable to many of the trainees referred for a psychological evaluation. For example, some trainees perceive themselves as not having any problems except having made a wrong choice in entering the military. Other trainees are aware that their difficulties in adapting to training suggest a limitation or deficit in stress management skills. However, they lack the necessary motivation to benefit from counseling.

One alternative to intervention would be to simply lower our threshold for a mental health discharge. Studies conducted during World War II found that higher rates of psychiatric discharge in basic training were associated with lower rates of psychiatric discharge at follow-up periods (for a review of these studies, see Matarazzo, 1978). This approach would prevent the waste of considerable training dollars by discharging trainees sooner than later. Although our ability to accurately predict who will eventually be discharged from the Air Force is clearly improving (Carbone et al., 1999), a strategy of discharging more would result in an increase in false positives, that is, discharging trainees who would have eventually adapted and been an asset to the military. For this reason, we recommend continued efforts to identify ways to improve the likelihood of graduation for the trainees we are returning to duty.

Given these observations, how can we better match our efforts to improve graduation success with the characteristics of the population of trainees seen for a mental health evaluation? Prochaska and colleagues' model of change (Prochaska et al., 1992) suggests that persons in a precontemplative and contemplative stage are most open to interventions that increase the amount of available information concerning a problem. Increased information may then lead to a reevaluation of how one thinks and feels about a problem in relation to oneself. Over time, this reevaluation could lead to a decision to make behavioral changes.

Applying these concepts to BMT, an informational intervention that reinforces the benefits of military service (pride in service, patriotism, and educational and medical benefits) and highlights the disadvantages of seeking a discharge (lost opportunity and unnecessary "failure" experience) may positively influence how a trainee views the goal of graduation. Similarly, information that normalizes the difficulties of training (similar experience for everyone and time-limited training) and portrays graduation as an

achievable goal (9 out of 10 trainees graduate) could encourage some trainees to persevere. Once a trainee has regained a degree of motivation and interest in graduation, he or she may not require further stress management skill building to be successful. We are currently considering a research project to test this hypothesis. The study would enlist the help of high-status guest speakers (e.g., senior military training commander) to present information on military service in an engaging and motivating style. Treatment conditions would include information only, information followed by stress management training, and a usual-care control group. Unfortunately, our anecdotal impression is that many of the trainees seen at the BAS are currently exposed to some or all of this information through their interactions with medical and training staff. We may eventually conclude that any type of intervention is largely ineffective at this point in the training process.

Future research should give equal or greater attention to primary prevention of mental health attrition from basic military training. One obvious need is to identify effective and practical methods to better screen military applicants for mental health related problems. This task is made particularly challenging by the willingness of some applicants to omit or falsify mental health related information during their MEPS (Military Entrance Processing Station) processing (Cigrang et al., 1998). After arriving in basic training, recruits are exposed to formal and often powerful briefings on the paramount importance of personal integrity as a cornerstone of military service. Exposing applicants to similarly strong messages at MEPS could gain an increase in honest reporting and subsequent better screening.

Another promising approach to prevention of mental health attrition is to ensure that all applicants to the military receive an in-depth and realistic job preview at the time of their initial contact with the military recruiter. This should include accurate information about both basic training and subsequent military service. Accurate portrayal of both the negative and positive aspects of a job during the application process has been related to lower subsequent worker turnover and higher ratings of job satisfaction in civilian settings (Taylor, 1994) and the military (Meglino, DeNisi, Youngblood, & Williams, 1988). A common complaint heard from trainees is that their recruiter did not fully inform them about the difficulties they would encounter in basic training or in military service in general. Standardizing and enforcing the use of realistic job previews could help prevent later attrition from the stressful context of basic training.

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