# Post-Traumatic Stress Disorder Treatment Outcomes in Military Clinics

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**ABSTRACT**

**Introduction:**

Despite a wide literature describing the impact of PTSD on military personnel, there is limited information concerning the results of PTSD treatment within military clinics mental health. Having such information is essential for making predictions about service members' chances of recovery, choosing best treatments, and for understanding if new interventions improve upon the standard of care.

**Materials and Methods:**

We reviewed data from the Psychological Health Pathways (PHP) database. Psychological Health Pathways is a standardized battery of demographics and psychometric outcome measures, including measurement of PTSD symptom severity, that is collected in military mental health clinics. We examined changes in PTSD symptom severity scores over time and developed logistic regression models to predict who responded to treatment, showed clinical success, or improved to the point that they could likely stay in the military.

**Results:**

After about 10 weeks in mental health clinics, severity scores for PTSD, sleep, depression, resilience, and disability all improved significantly. Of 681 patients tracked, 38% had clinically significant reductions on the PTSD Checklist (PCL) (i.e., "treatment response"), 28% no longer met criteria for PTSD on the PCL, and 23% did both (i.e., "clinical treatment success"). For the ultimate end point of "military treatment success," defined as meeting criteria for both clinical treatment success and reporting that their work-related disability was mild or better, 12.8% of patients succeeded. Depression scores were the most powerful predictor of treatment failure.

**Conclusions:**

Recovery from PTSD is possible during military service, but it is less likely in individuals with certain negative prognostic factors, most notably severe depression.

## INTRODUCTION

In 2020, headlines across the nation made mention of a clinical update by Steenkamp et al.[1] about outcomes in trials for PTSD. As *The Military Times* put it "VA, DoD recommended PTSD therapies don't help many military patients."[2] Such announcements made many wonder if "evidence-based" treatments for PTSD were truly effective in military populations. After all, previous studies had found that treatments that were well established in civilians sometimes failed those whose PTSD came from combat.[3,4]

The headlines were an over-simplification of the actual research findings. The Steenkamp review examined clinical trials rather than what was happening in Veterans Administration (VA) and U.S. DoD clinics.[1] The 2020 review paper was an update of a 2015 review of randomized trials done in active duty and veterans with PTSD.[5] The original 2015 study had suggested that gains were modest, but clearly present from evidence-based treatments. The update had a greater focus on active duty and combat exposure.[1] The updated review found that only 31% of participants experienced significant improvements in time-limited treatment, usually about 10 weeks. What had been thought of as the most effective evidence-based treatments—selective serotonin reuptake inhibitors and trauma-focused psychotherapies—did not show superiority over control conditions. Although not as bleak as press reports might indicate, it still did pose questions about overall effectiveness of PTSD treatment for service members and veterans.

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The data collected was approved by Naval Medical Center, San Diego (NMCSD 0.2010.0127) Institutional Review Board in compliance with all applicable federal regulations governing the protection of human subjects.

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Some previous reviews had painted a similarly bleak view of what could be accomplished for PTSD. A study by Milliken and colleagues[6] tracked PTSD symptoms across time in service members and observed an inverse relationship between receiving mental health services and improvement in PTSD. The criticism of that study, however, was that the finding could be a reflection of sicker patients being more likely to end up in treatment. Tracking of naturalistic outcomes for Australian veterans in clinical treatment were more hopeful, with 67.5% of patients experiencing large improvements over the course of up to 9 months of treatment.[7] Similarly, Murphy et al.[8] found that in veterans from the UK, PTSD symptoms improved in 87% of patients 6 months into treatment and were maintained in 83% of patients 1 year post-treatment. Specifically related to treatments recommended by the VA/DoD Clinical Practice Guidelines, tracking of VA patients who received prolonged exposure therapy found that the proportion of patients who screened positive for PTSD on the PTSD Checklist (PCL) decreased from 87.6% to 46.2%.[9]

Thus, it would appear that despite the failure of some clinical trials, veterans with PTSD are improving with treatment. Less is known about the results of treatment while service members remain on active duty. A small study followed 24 service members in primary care interventions and observed some modest gains.[10] As might be expected, more significant improvements have been observed in focused programs such as an Intensive Military Outpatient Treatment Program.[11] The RAND Corporation tracked outcomes within military mental health clinics and reported that the overall course of symptom trajectory for 470 service members with self-reported PTSD showed symptoms decreased over time, although percent success was not reported.[12]

There are several reasons why more information is needed on the outcomes of PTSD treatment for active duty patients. The cost of PTSD to the military is staggering in terms of health care costs, lost productivity, and personal suffering.[13] It is critical to understand if PTSD can be treated early to prevent these long-term consequences. Moreover, the military needs to maintain a fit fighting force. It is thus important to know the likelihood that service members who develop PTSD can resolve work-related disability and be retained on active duty. New technologies and methods are being advanced for the treatment of PTSD,[14] and hopefully, these will improve recovery rates. To understand the impact of such new treatments, it is important to know the effectiveness of the existing standard of care. Finally, service members themselves have the right to know what to expect from treatment for PTSD.

To address this gap, we examined data from the Psychological Health Pathways (PHP) program. Psychological Health Pathways is a psychological health treatment and care management system developed by the Naval Center for Combat & Operational Stress Control to track clinical outcomes in Navy and Marine Corps clinics. It was beta tested in the mental health clinics at Naval Medical Center San Diego (NMCSD) and Naval Hospital Camp Pendleton (NHCP). Patients were tracked with standardized measures of PTSD, depression, resilience, disability, and combat exposure and were administered at roughly 10-week intervals. Scores were provided to providers and clinics to hopefully improve the quality of care. Data from these assessments were stored in a database, which after de-identification was approved by the NMCSD institutional review board (IRB) for research purposes.

In this study, we examined the PHP database looking for patients who met clinical criteria for PTSD on the PCL. We then examined how many of those individuals showed clinically significant improvements over the course of 10 weeks. We examined how many of those who improved were considered "treatment successes" as indicated by no longer meeting criteria for PTSD on the PCL, and how many were considered "military treatment successes" as defined by both meeting criteria for clinical success and reporting that their work-related disability was mild or better. We then examined factors present at initial evaluation that might predict who was most likely to succeed in treatment.

## MATERIALS AND METHODS

### PHP Database

As part of general "best practice" procedures that advise tracking clinical outcomes using psychometric measures, a database of clinical information was constructed. Active duty patients in mental health clinics at NMCSD and NHCP were tracked. It was up to provider and clinic discretion as to if PHP measures were completed, but it was rare that such an assessment was declined. (We do not have exact numbers on those who declined, as privacy rules prohibited even noting the existence of an individual who declined to be tracked.) Completion of PHP involves a standardized, paper-based intake questionnaire that included information about demographics, background, combat experiences, and self-report measures of PTSD, depression, sleep, pain (0-10 self-report), and resilience. Psychometric measures were repeated at about 10-week intervals. Information from PHP served primarily as a clinical tool that provided providers, patients, and clinics with psychometric scores concerning the severity of psychological symptoms across time.

The database from the initial, "beta," roll out of the project had identifiers removed and was approved by the IRB at NMCSD for use in research. The database contains information from 2,372 individuals at intake (T1), of whom 807 had completed at least one follow-up assessment (T2) and approximately 10 weeks later.

### Facilities

NMCSD is the U.S. military's major tertiary care location for the West Coast and serves all branches of the armed services, with some 500,000 individuals in its catchment area. NHCP is a medium-size, Navy-run facility located on Marine Corps Base Camp Pendleton. Care was provided mostly by psychiatrists and psychologists, including interns

and residents. Some therapy was also provided by social workers.

### Information Available at Baseline

At entry (T1), the PHP database contained information on patient's age, gender, race, marital status, educational level, military branch, rank, and number of deployments. Also, individuals were asked the reason they were being seen, if they believed this reason was deployment-related, if they had previous mental health treatment, and if they had a history of physical, sexual, or emotional abuse. They were also asked about family history of mental health problems, including if there was a family history of PTSD. Individuals indicated if they experienced any of the following stressors: financial, work-related, family, health, relationship, legal, or housing stresses, and if they talked to family, fellow service members, significant others, religious or spiritual guides, military leadership, non-military friends, or no one. They were also asked if they were currently on a restricted duty status (limited duty), and if they planned to stay in the military. Medical and treatment history was gathered, but not in a way that could be easily categorized with the exception of presence or absence of traumatic brain injury, which was estimated based on the Defense and Veterans Brain Injury Center, Brief Traumatic Brain Injury Survey.[15] Previous combat exposure was estimated using the Combat Exposure Scale.[16]

### Psychometric Instruments

Information from psychometric measures was taken at T1 (entry into the clinic) and upon T2 evaluation which occurred about 10 weeks later.

### PTSD Checklist-Military Version

Both entry into the study criteria and primary outcome for the study was tracked using the PTSD Checklist-Military Version (PCL-M). The PCL-M is a self-report scale in which a patient rates the severity of the 17, Diagnostic and Statistical Manual of Mental Disorders (4th ed) (DSM-IV) symptoms of PTSD, in relation to a traumatic military event, over the past month, on a scale from 1 (no symptoms) to 5 (extreme problems). Of note, DSM-V criteria were not in use at the time this data was being collected. Scores on the PCL-M range from 17 to 85. To meet the criteria for PTSD, a respondent must rate as moderate (3): at least one criteria-B symptom, at least three criteria-C symptoms, and at least two criteria-D symptoms—corresponding to a DSM diagnosis of PTSD. A respondent is considered to meet "strict" criteria for PTSD if clinical criteria are met and total severity score is 50 or higher.[17] Previous studies have found that the PCL-M has a high correlation with the Clinician-Administered PTSD Scale and is an accurate reflection of PTSD symptom severity.[18]

### Patient Health Questionnaire

The Patient Health Questionnaire-9 (PHQ-9) was used to measure depressive symptoms. This questionnaire was selected because it was developed by using criteria for depression from the DSM-IV and has documented validity, reliability, sensitivity, and specificity in general medical patients.[19]

### Response to Stressful Experience Scale

The Response to Stressful Experience Scale (RSES) is a 22-item scale emphasizing coping processes and resilience. Higher scores on the RSES indicate greater resilience.[20]

### Sheehan Disability Scale

The Sheehan Disability Scale (SDS) is a three-item, self-report tool used to assess functional impairment in three inter-related domains: work/school, social, and family life. In each of these three domains, individuals are asked to rate their degree of disability from 0 to 10, with a guide indicating the scores that correspond to levels of disability: none (0), mild (1-3), moderate (4-6), marked (7-9), or extreme (10).[21]

### Pittsburgh Sleep Quality Index

The Pittsburgh Sleep Quality Index (PSQI) is a self-rated questionnaire that assesses sleep quality and disturbances over a 1-month time interval.[22]

### Inclusion Criteria

We examined data from individuals who met the criteria for PTSD on the PCL-M at T1 and who had a PCL-M at follow-up (T2) and who had a treatment review. Cases were excluded if the respondent indicated that, on the SDS at T1, s/he was completely unable to work for reasons unrelated to treatment being received.

### Determining Treatment Outcomes

Outcomes were examined by performing paired t-tests comparing T1 and T2 scores on the PCL-M, PHQ-9, PSQI, RSES, Pain, and SDS. For descriptive purposes and for use in predictive models, we also calculated indicators of treatment response and success. An individual was considered to have "responded" to treatment if s/he experienced a 10-point or greater decrease in PCL-M between T1 and T2. To allow comparison with studies that used different measures of PTSD, we also calculated if individuals experienced a 30% drop in PCL-M scores. To determine percent (%) improvement, because the baseline for the PCL-M is 17, we subtracted 17 from both pre- and post-scores. We defined "clinical treatment success" as having experienced a treatment response and no longer meeting criteria for PTSD on the PCL-M at T2. Finally, an individual was considered a "military treatment success" if they met the criteria for "clinical treatment success" and reported mild or no work-related disability at T2.

### Predictive Models of Treatment Outcomes

We calculated three stepwise, binary logistic regression models starting with variables available at T1 and then attempting to calculate the chance of treatment response, clinical treatment success, or military treatment success, respectively. Desire to stay in the military was coded as 0 for "no", 1 for "undecided", and 2 for "yes". Forward conditional method was used to include or exclude variables with an entry probably of 0.05 and removal probably of 0.10. We excluded any variable in which there were fewer than 600 responses in the database.

## RESULTS

A total of 681 participants met the criteria for inclusion in the study. However, most of those individuals had not answered all questions. Description of the population and number of individual responses to each available question are given in Table I. We discovered no pattern in how/why some questions were not answered.

For the primary outcome, improvement in PTSD, significant changes were seen. Of those included in the study (i.e., meeting criteria for PTSD on the PCL-M), 87.7% (597/681) met strict criteria for PTSD by also having a severity score $\geq$50. After 10 weeks in the clinic, 37.7% (257/681) had improved by 10 points or more on the PCL-M. Only 72.4% (493/681) now met the criteria for PTSD, with 62.4% (425/681) meeting strict criteria for PTSD. About 23% (153/681) met the criteria for "clinical treatment success" as defined as having both a 10-point improvement on the PCL-M and no longer meeting criteria for PTSD on the PCL-M. Only

**TABLE I.** Demographics

| | *n* | Minimum | Maximum | Mean | SD |
|---|---|---|---|---|---|
| Age | 678 | 19 | 54 | 28.75 | 7.02 |
| Time active duty (months) | 641 | 1 | 348 | 96.16 | 66.14 |
| Number of deployments | 453 | 1 | 5 | 2.09 | 1.23 |
| CES | 554 | 0 | 15 | 8.27 | 4.30 |
| Education (years) | 677 | 9 | 16 | 12.61 | 0.832 |
| | | | | *n* | % |
| Female | | | | 650 | 9.5 |
| Married | | | | 497 | 53.9 |
| Non-Hispanic Caucasian | | | | 502 | 54.2 |
| Navy | | | | 486 | 28.8 |
| Limited duty status | | | | 662 | 41.1 |
| Plan to leave military | | | | 657 | 53.0 |
| Visit deployment related | | | | 621 | 81.8 |
| Reason for visit—PTSD | | | | 286 | 46.2 |
| Severe PTSD | | | | 681 | 87.7 |
| Major depressive disorder (MDD) | | | | 680 | 77.1 |
| Insomnia | | | | 639 | 98.4 |
| Mild-traumatic brain injury (m-TBI) | | | | 619 | 43.5 |
| Previous mental health treatment | | | | 661 | 51.3 |
| Previous treatment for alcohol/ drug abuse | | | | 653 | 18.5 |
| Physically abused | | | | 639 | 24.1 |
| Sexually abused | | | | 639 | 13.0 |
| Emotionally abused | | | | 626 | 27.8 |
| Immediate family ever diagnosed with mental health disorder | | | | 657 | 37.9 |
| Family member diagnosed with PTSD | | | | 238 | 16.0 |
| Do you talk to family? | | | | 657 | 38.4 |
| Do you talk to religious/spiritual person? | | | | 657 | 6.5 |
| Do you talk to fellow service member? | | | | 657 | 34.1 |
| Do you talk to senior leadership? | | | | 657 | 4.4 |
| Do you talk to spouse/girlfriend/boyfriend? | | | | 656 | 40.9 |
| Do you talk to non-military friends | | | | 657 | 20.7 |
| You talk to no one | | | | 652 | 35.6 |
| Finance is a stressor | | | | 641 | 44.3 |
| Relationship is a stressor | | | | 641 | 51.3 |
| Work is a stressor | | | | 641 | 75.7 |
| Legal is a stressor | | | | 641 | 17.2 |
| Family is a stressor | | | | 641 | 42.7 |
| Housing is a stressor | | | | 641 | 10.9 |
| Physical health is a stressor | | | | 641 | 49.6 |

CES, Combat Exposure Scale.

**TABLE II.** Outcomes at Time 1 (T1) and Time (T2)

| Outcome variables | T1 mean | SEM | T2 mean | SEM | *n* |
|---|---|---|---|---|---|
| PCL-M** | 62.85 | 0.41 | 55.12 | 0.61 | 681 |
| PHQ-9** | 17.24 | 0.20 | 14.28 | 0.25 | 678 |
| PSQI** | 14.18 | 0.15 | 13.40 | 0.18 | 594 |
| RSES* | 45.18 | 0.66 | 50.65 | 0.68 | 669 |
| Pain | 3.09 | 0.11 | 3.24 | 0.11 | 601 |
| SDS Work** | 6.50 | 0.10 | 5.72 | 0.11 | 585 |
| SDS Home** | 6.72 | 0.10 | 5.69 | 0.11 | 648 |
| SDS Social** | 7.10 | 0.09 | 6.10 | 0.11 | 650 |

*$P < .05$,
**$P < .01$.
PCL-M, PTSD Checklist-Military Version; PHQ-9, Patient Health Questionnaire-9; PSQI, Pittsburgh Sleep Quality Index; RSES, Response to Stressful Experience Scale; SDS, Sheehan Disability Scale.

585/681 completed the SDS at T2, so this smaller sample size was used to compute those who met the ultimate end point of "military treatment success" by meeting both criteria for clinical treatment success and reporting that their work-related disability was mild or better. Seventy-five individuals (12.8%) met this highest bar at the 10-week mark.

Scores for PTSD, depression, insomnia, and disability all significantly decreased over the course of treatment, while resilience increased. Only physical pain remained unchanged. Results of paired t-tests for these factors are given in Table II.

It was possible to generate binary logistic regression models that significantly ($P < .05$) predicted treatment response, clinical treatment success, and military treatment success. For predicting treatment response, stepwise regression indicated that of all the variables entered, only scores on the PCL-M and PHQ-9 at T1 were significant ($P < .05$) predictors of treatment response. Using just these variables as predictors, a regression model ($n = 680$) was constructed that resulted in a Nagelkerke R square of 0.033. Negative predictive value was 96.7%, and positive predictive value was 7%. Overall predictive value was 62.8%. B for PHQ-9 score was −0.069 per point with a SE of 0.019 ($P < .001$). B for PCL-M was +0.009 with a SE of 0.275 ($P < .005$). Constant was −1.33 with a SE of 0.486. This indicates that individuals with higher PCL-M scores at T1 are more likely to have a 10-point drop in their PCL-M scores after 10 weeks, whereas individuals with higher PHQ-9 scores are less likely to experience this level of improvement after 10 weeks.

For predicting clinical treatment success, PHQ-9 at T1 and talking to senior leadership were significant predictors in the stepwise model ($P < .05$). However, once the model was reduced to only two predictors and included the full sample size ($n = 681$), talking to senior leadership was no longer significant ($P > 0.1$). For the final model, Nagelkerke R square was 0.064. Negative predictive value was 99.4%, and positive predictive value was 2.5%. Overall predictive value was 77.6%. B for PHQ-9 score was −0.097 per point with a SE of 0.018 ($P < .001$). Constant was 0.371 with a SE of 0.307. This indicates that individuals who start with higher PHQ-9 scores are less likely to experience clinical success in treatment.

For predicting military treatment success, PHQ-9 and talking to senior leadership were significant predictors in the stepwise model ($P < .05$). However, once the model was reduced to only two predictors and included the full sample size ($n = 561$), the significance of talking to senior leadership was no longer significant ($P > .1$). For the final model, Nagelkerke R square was 0.93. Negative predictive value was 99.8%, and positive predictive value was 1.4%. Overall predictive value was 84.4%. B for PHQ-9 score was −0.133 per point with a SE of 0.025 ($P < .001$). Constant was 0.218 with a SE of 0.390. This indicates that individuals with higher PHQ-9 scores are less likely to experience military treatment success.

## DISCUSSION

Similar to previous studies that tracked naturalistic outcomes in veterans with PTSD, this study found that self-report measures of PTSD, depression, insomnia, pain, resilience, and disability all improved over the course of about 10 weeks spent at military mental health clinics. This was in service members who had deployed and who had presumptive PTSD based on their PCL scores. However, similar to what was reported in a review of clinical trials conducted over a similar period of treatment,[1] less than half of treated service members with PTSD saw meaningful improvements in their symptoms.

Although the success rate reported here may seem low compared to those reported from controlled civilian trials,[23] it still represents a substantial return on investment. A 1991 study at the Center for Naval Analysis estimated that it costs between $24,604 and $25,232 per Marine for recruit and basic combat training.[24] Adjusted for inflation this is $46,316 to $47,499 for 2020 dollars. Advanced training costs vary between a few thousands to millions of dollars per service member depending on specialization. Presuming 1 hour of treatment a week (for 10 weeks) and a $300/hour cost for treatment, being able to retain 12.8% of service members due to mental health treatment is a bargain ($3,000/service

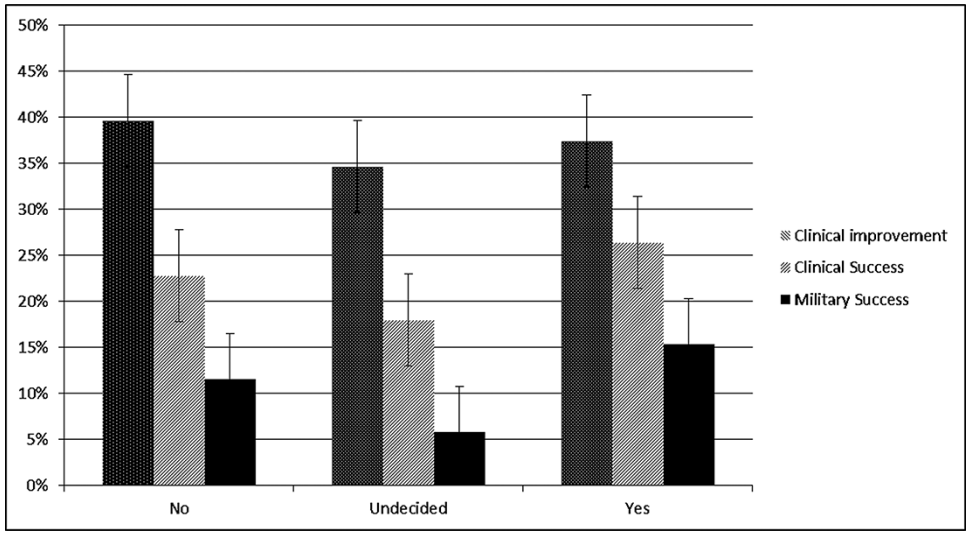


**FIGURE 1.** Treatment outcomes according to intent to stay in the military.

member vs. more than $40,000/service member). Considering that PTSD generates a 50% disability rating in the VA system and that individuals with PTSD use more health care overall,[24] the savings from clinical success in early treatment become obvious. Consider human suffering and productivity loss in later civilian life, appropriate mental health treatment is imperative.

Despite having a wealth of information about the individuals entering treatment, predicting who would succeed in treatment proved difficult. The positive predictive values of models were low. Factors that we thought would be powerful predictors of treatment success showed no significant relationship. For example, there was no statistically significant difference in response or success rates based on stated intention to stay in the military (see Fig. 1). Likewise, resilience scores at T1 were not significantly different among those who went on to respond to treatment and find clinical treatment success or military treatment success. Both of these findings are important. The first may help dispel the belief that the reason that so many military members do not fully respond to treatment is that they are simply looking to get out of the service. The second lets us know that what we have thought of as having a resilient coping style may not always be predictive of actual resilience in treatment. Rather coping itself can be influenced by illness and treatment. This is consistent with previous studies in civilian populations that suggested that it is difficult to predict treatment success for PTSD.[25]

Whereas finding the individuals who were most likely to succeed in treatment was difficult, models did prove more successful in singling out those for whom recovery was unlikely. Negative predictive values for models looking at treatment response, clinical treatment success, and military treatment success were all greater than 95%. In particular, the relationship between severe depression scores and chance of treatment failure was powerful (see Fig. 2). Of the individuals who reported maximum depression scores on the PHQ-9, none went on to clinical treatment or military treatment success. This is consistent with previous studies that found that depression and guilt are powerful predictors of low treatment response in veterans with PTSD.[7,8] The same finding has also been reported for civilian populations.[26]

There are a number of reasons why severe depression might lead to poorer outcomes in PTSD treatment. However, this is countered by the fact that an inverse relationship between depression severity and PTSD response has previously been observed in studies of psychiatric medication in civilian populations.[27] It is possible that the nature of PTSD + depression is more severe and inherently less-treatable than PTSD alone. However, since individuals in this study were not limited to a particular treatment, or a particular diagnosis, it is also possible that clinicians chose to focus more on depressive than PTSD symptoms when the depression was particularly severe. Furthermore, since depression inhibits motivation, severe depression might limit a patient's ability to fully engage in PTSD treatments even when these treatments are offered.

None of this is to say that there is no hope for service members who have both depression and PTSD. This study was only tracking outcomes over about 10 weeks. Studies that looked at naturalistic outcomes over longer periods of time have generally shown better outcomes.[7,8] It will be important in the future to more closely examine long-term outcomes to see if the course of improvement continues over longer periods.

In the future, we need to better document and examine what types of treatment individuals receive and if there are factors that indicate that an individual is more likely to respond to one treatment than another. Unfortunately, the information included in the database for this study made it difficult to establish exactly what form of treatment was used for each individual. This is consistent with previous findings that many

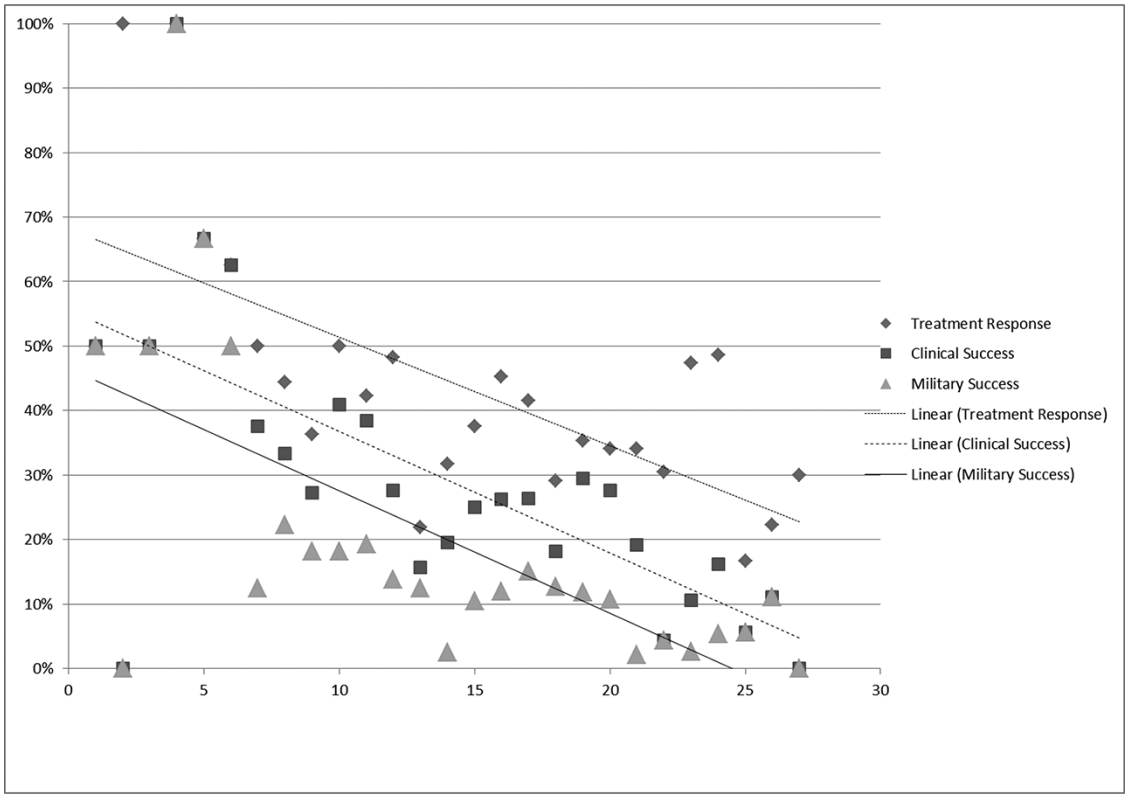


**FIGURE 2.** PHQ-9 (depression) score vs. treatment outcome.

therapists use eclectic styles, and that getting providers to use a particular evidence-based treatment can be difficult.[28] One previous study was able to pick out at least one evidence-based therapy from this same database, Eye Movement Desensitization and Reprocessing (EMDR).[29] In that study, EMDR was found to produce superior results to what was found with usual treatments. That would seem to belie the review of controlled studies that found that evidence-based options did not appear to offer particular advantages to those dealing with combat trauma.[1] However, the EMDR study had a very small sample size (46 service members received EMDR). Future studies are clearly needed to examine if real-world outcomes with evidence-based interventions truly offer service members and veterans better outcomes than what clinicians might otherwise offer.

One of the limitations of this study was that although we had a very large amount of information about each patient who went through treatment, and most patients provided answers to most of the questions, a relatively small amount of missing data from each case can make it difficult to construct stepwise models. Thus, our final models used a relatively sparse number of variables to make predications. Computerized data collection methods should help reduce the problems with missing data we experienced in this study. Another limitation of this study was its reliance on self-report measures. Future studies may want to compare self-report measures to more objective outcomes such as if service members actually stayed in the military or were able to avoid VA disability. In particular, this is relevant to the issue of disability overall. We focused here on a fairly simplistic outcome of work-related disability but hope to do future analysis looking at how treatment influences disability across the board.

## CONCLUSION

Despite the limitations, this study adds a vital benchmark of how well we are serving our service members with PTSD, essentially the control group for future studies. The good news is that military mental health patients do improve with treatment. This study supports the idea that offering high-quality mental health care to service members is a good investment, not only for the individuals themselves but also for the military. Overall rates of treatment success, particularly for service members with PTSD who might hope to continue their military careers, are still far from ideal. As time progresses, new treatments arise, and existing evidence-based techniques become more widely disseminated, so we hope that treatment success for service members will improve. Further interventions, such as talking to leadership, also bear further research into how they might improve outcomes. Ongoing tracking efforts should advance knowledge about what factors predict success and how to get the right treatment to the right people. Measuring outcomes within clinics, rather than just

in research studies, is rapidly becoming standard or "best practice."[30] Hopefully this will allow more detailed studies such as this but also allow providers to focus resources and improve outcomes within their own clinical practice.

## FUNDING

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## CONFLICT OF INTEREST STATEMENT

None declared.

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