

The treatment of posttraumatic stress disorder in an extended care psychiatric rehabilitation program

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Abstract. This research study intended to determine which patient diagnostic group benefited most from an extended care psychiatric rehabilitation program (Program). Archival data were used to assess the completion rates among those subjected to one or more of the Program's treatment modalities. A correlational design was used to determine whether demographic or diagnostic variables were related to program completion. The results indicate that patients with a diagnosis of posttraumatic stress disorder or bipolar disorder are the most likely diagnostic groups to benefit from participation in an extended care psychiatric rehabilitation program. Those patients with a diagnosis of schizophrenia or substance abuse may not be appropriate for this type of treatment program, and in this study, were the least likely to benefit.

Keywords: Posttraumatic stress disorder, bipolar disorder, schizophrenia, substance abuse, extended care, psychiatric rehabilitation

1. Introduction

Extended inpatient treatment is one of several approaches to treating combat-related posttraumatic stress disorder (PTSD). Some extended programs treat only patients with PTSD, while other programs combine treatment of individuals diagnosed with PTSD along with individuals labeled with various other diagnoses [6,7,10]. This research study focuses on the effectiveness of an extended care psychiatric rehabilitation program (Program) in the treatment of PTSD as compared to other diagnostic groups represented in the same program, namely bipolar disorder, schizophrenia, and substance-induced disorders.

The Program is a 90-day, multi-disciplinary, patient-centered, treatment program designed to assist veterans and their families to cope with lifestyle and functional problems resulting from chronic psychiatric disorders. The overall goal of the program is to assist veterans with psychiatric disorders to achieve an optimum functional level. This level of functioning, determined by the treatment team, is defined as "sustained symptomatic improvement to a level that enables the veteran to function adequately in the community". The major treatment modalities employed in the Program include biomedical intervention; group therapy, individual therapy, and psycho-educational groups; planned skills training for daily living; and post-discharge placement and follow-up therapy.

The health care team in the Program is composed of psychiatrists, social workers, nurses, special education therapists, and rehabilitation specialists. The Program promotes the

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active participation of patients in their treatment plan. A thorough assessment is completed with each patient to determine individualized needs and treatment goals. Planned group experiences assist the patients to meet their individualized treatment goals within the context of the program structure. The Program's participants are deemed "successfully completed" by the treatment team when they have sustained symptomatic improvement to a level that enables them to function adequately in the community. Program completion and "sustained symptomatic improvement" are considered strong indicators that a participant has benefited from the program.

2. Literature review

Achieving optimal functioning for war veterans with chronic, war-related PTSD is a challenge. There is evidence to suggest that there is no proven effective treatment method for veterans with war-related PTSD [6,7]. Research has consistently demonstrated that the trauma response is very complex and affects many aspects of an individual's life, and frequently affects some individuals for life [1,3,11,13,19]. Psychological trauma has the potential to overwhelm emotional, psychological, and biological coping mechanisms to the degree that an individual cannot function adequately [3,26–29]. Also, there are several common co-morbid disorders associated with PTSD that can sully the trauma issue, such as substance abuse or dependence, major depressive disorder, panic disorder/agoraphobia, generalized anxiety disorder, obsessive-compulsive disorder, social phobia, and bipolar disorder [3,9,29]. In addition, there is the ever-present danger for misdiagnosis, inappropriate treatment, or a "blame the victim" attitude [3,9,17,29]. Within this potentially dangerous treatment environment, finding a "safe place" while working through one's trauma is essential to improvement.

It is necessary to develop a comprehensive understanding of the psychological and emotional effects of traumatic events so clinicians can develop programs and treatments that will help and not exacerbate the problem [29]. If we can understand more clearly the dynamics of trauma then we can provide more appropriate and effective treatment for our clients. There are many suggested forms of treatment for PTSD and a panel of trauma experts recommends an array of choices [9,10]. Although still a controversial intervention, Eye Movement Desensitization and Reprocessing or EMDR is one treatment option. The results of numer-

ous controlled studies provide strong documentation that supports EMDR as a successful treatment strategy for "single-trauma cases" [22]. Likewise, Korn and Leeds [14] found that one method of EMDR termed Resource Development and Installation (RDI) can reduce the level of distress in people who suffer from complex PTSD in the initial stabilization phase, and prepare them for work in the middle phase of treatment. Also in support of EMDR as a treatment for PTSD symptoms, Ironson et al. [12] found that both Prolonged Exposure (PE), one type of exposure therapy, and EMDR produced lasting reductions in PTSD and depression symptoms. EMDR, however, took a lot less time to achieve those results than did PE.

Not all studies have produced results that support EMDR as a viable treatment option for PTSD. After reviewing the extant evidence of EMDR in psychiatric nursing practices, McCabe [16] concludes that mental health professionals should be wary of EMDR because it still has not been tested rigorously enough. This author even goes so far as to suggest that EMDR's "miraculous" results are a product of urban-legend. Likewise, in a meta-analysis of 34 studies on the effects of EMDR on PTSD and other conditions researchers state that "EMDR appears to be no more effective than other exposure techniques, and evidence suggests that the eye movements integral to the treatment, and to its name, are unnecessary" [5]. EMDR is not the only contemporary form of treatment that has been tested on the PTSD population in recent years. Trauma Management Therapy (TMT), Exposure Therapy with hypnosis, Multiple Channel Exposure Therapy (M-CET), and Acceptance and Commitment therapy (ACT) are other treatment approaches that have recently been studied. Trauma Management Therapy or TMT is an approach that has yielded promising results. TMT, which is a combination of PTSD education, individual exposure therapy, homework, group therapy, and social and emotional skills training has been heralded as having "showed good preliminary results in an open trial" on combat-related PTSD [25]. Likewise, in a recent review of PTSD treatment research, Solomon and Johnson [24] conclude that exposure therapy and hypnosis are the most effective PTSD treatment strategies for treating intrusive symptoms, while numbing and avoidance symptoms of PTSD are most affected by cognitive-behavioral and psychodynamic interventions.

M-CET which is a therapeutic approach that combines cognitive processing and panic control treatment for the purposes of managing cognitive, behavioral, and physiological symptoms, has been celebrated as a treat-

ment for PTSD with co-morbid panic attacks [8]. Finally, ACT is an intervention that uses behavioral techniques to improve clients' "ability to make and keep commitments to behavior change" [19]. With ACT, the goal is for clients to commit to taking certain actions that will help them reduce their PTSD symptoms and also improve other areas of their life. ACT is said to work well in reducing "experiential avoidance" in PTSD sufferers who refuse to participate in exposure therapies [19]. This research study examines the efficacy of an extended care inpatient program for the treatment of PTSD and thereby assists in the development of the knowledge base for the comprehensive understanding of psychological and emotional trauma.

2.1. Treatment methods

The "experts" believe there are five types of therapy especially effective for treating PTSD: anxiety management, cognitive therapy, exposure therapy, play therapy (for children), and psycho education [9, 10]. Foa et al. [9,10] also rated treatment methods as to their effectiveness in the context which the above noted therapies are administered. These are rated as follows in order of most effective to least effective: individual; combination of individual and group therapy; combination of individual and family therapy; therapist-led PTSD group; family therapy; and self-help PTSD groups.

Individual therapy is the treatment of choice for PTSD, however group therapy is also employed to alleviate feelings of isolation and alienation. Group therapy provides a "holding environment" for feelings that may trigger transference reactions that can be uncontainable in individual therapy. The group reinforces normal reactions and confronts or corrects pathological ones. Danieli [4] believes that the strongest benefit of this approach is the strength and healing it allows the participants to provide to each other.

Bowen and Lambert [2] reported positive results utilizing systematic desensitization therapy to lower the symptoms of anxiety arousal in individuals suffering with PTSD. Their approach consisted of pre-treatment, treatment, and post-treatment stages. During the pre-treatment stage, a "stress list" of both combat and non-combat related traumatic events was composed and listed in increasing severity of the stress they were perceived to produce. The patient is then seated in a biofeedback chair with sensing devices attached to monitor nervous system responsivity. A baseline measurement is taken and then each scene is read in ascend-

ing order. After each scene, the patient is instructed to imagine being in the scene and the patient's physiological response is measured respectively. Next the patient is told to rate the degree of stress felt on a five-point scale. The patient is instructed to close his or her eyes and relax. At this time his or her physiological state is measured. This process is repeated until all scenes are read. The treatment stage lasts about three months. On an outpatient basis, the patient is given muscle relaxation training followed by desensitization therapy, which consists of imagining the stressful scene while maintaining relaxation. During the post-treatment phase, the patient is again monitored in the biofeedback lab exactly as he or she was before.

Silver [23] utilizes an eclectic approach in a four month long inpatient treatment program. This eclectic treatment approach addresses altered and sometimes confusing cognitive perceptions of the environment, rigidly controlled and limited emotive processing, and new questions of existential values and meanings. Treatment approaches are paralleled because they tend to reinforce each other and because while one may not be effective at one time, the other may be. Individual, group, and family therapies provide the framework. All of these modalities assist to build continuity to a community where survivors help other survivors, and by doing so, heal themselves. Silver's program follows a general process through stages. The therapist guides the individual through recovering long buried memories. As family therapy is introduced, hope grows, symptoms decrease, self-worth increases, guilt is addressed, and atonement is suggested as a vehicle to resolve guilt. As family therapy continues, education and employment are addressed, and training is provided about learning to manage stress and anger appropriately, including interacting with authority figures.

Eye movement desensitization reprocessing (EMDR), hypnotherapy, and psychodynamic psychotherapy were not rated highly by the "experts" for the treatment of PTSD [9,10]. A study by Johnson and Lubin [13] revealed that veterans participating in treatment programs rated the basic treatment modalities of individual and group therapy, medications, and nursing care as most beneficial.

3. The program

This research study intended to determine which diagnostic group of patients benefited most from an extended care psychiatric rehabilitation program (Pro-

gram). This type of intervention is described as a 90 day, multi disciplinary, patient-centered, treatment program designed to assist veterans and their families to cope with lifestyle and functional problems resulting from chronic psychiatric disorders. The overall goal of the Program is to help veterans with psychiatric disorders to achieve an optimum functional level, as determined by the health care treatment team, involving the following treatment modalities:

- (1) continued stabilization of the psychiatric disorders with biomedical intervention;
- (2) promotion of understanding of self through group therapy, individual therapy, and psycho-educational groups;
- (3) improvement in functional behaviors, such as activities of daily living and use of leisure time, through planned skills training; and,
- (4) promotion of adaptation to the community through appropriate post-discharge placement and follow-up therapy.

The health care treatment team (composed of psychiatrists, social workers, nurses, special education therapists, and rehabilitation specialists) structures an environment that promotes the active participation of patients in their treatment plan. A thorough assessment is completed with each patient to determine individualized needs and treatment goals. Ward milieu therapy and planned group experiences assist the patients to meet their individualized treatment goals within the context of the structured program. The purpose of an extended care program is to enable chronic and recurrently hospitalized psychiatric patients to function outside of the hospital. Program participants were deemed “successfully completed” by the treatment team when they demonstrated sustained symptomatic improvement to the level that enabled them to function adequately in the community.

4. Purpose and research questions of this study

The information garnered by this research study will be helpful in assessing the effectiveness and efficiency of other extended care programs, selecting program participants, and in planning future treatment programs. There is a challenge that arises in defining the term “benefit” as program participants have such individual and varied combinations of illnesses, symptoms, experiences, circumstances, and most of all, levels of functioning. At times, the best measure may be merely a

subjective judgment on the part of the treatment team as to whether or not a patient has attained the skills necessary to function effectively for a long term in the community.

The positive impact of a program may be expressed in a variety of ways. Assessment of patient “benefit” from the program in this study was determined by attempting to answer the questions: How are diagnostic variables related to completion of the program, length of stay in the program, competency upon exiting the program, and Global Assessment of Functioning (GAF) scores?

5. Methodology

5.1. Design and subjects

A correlational design was used to determine whether demographic or diagnostic variables were related to completion of the program or to admission and/or the past year GAF scores for those patients who participated in the Program. The demographic information included age, gender, educational level, employment history, marital status, and the presence of a support system. The diagnostic information involved the primary and secondary diagnosis and the Axis V (GAF) at both intake and at discharge.

The subjects of this study were obtained from archival medical records and were comprised of predominantly male veterans with a diagnosis of bipolar disorder, PTSD, schizophrenia, or substance abuse that participated in an extended care psychiatric rehabilitation program between 1990–1995.

5.2. Instrumentation

A Data Coding Form (DCF) was used to record demographic, diagnostic, and objective information about subjects for data analysis. The DCF identified potential factors influencing program completion. The DCF had five sections. The Demographic Information section asked about age, gender, educational level, employment history, marital status, and the presence of a support system. The Diagnostic Information section included the primary and secondary diagnosis and Axis V (GAF) at both intake and at discharge. The Program Participation Dates section specified when the patient participated in the Program. The Program Completion section indicated if the patient had completed the program and if the patient was judged to be compe-

tent and employable at time of discharge. The final section, the Childhood Abuse section, included three questions: Was childhood abuse acknowledged? Was it addressed in the assessment by a social worker or a physician? Was it addressed in treatment? The DCF had no recorded information that could be readily used to identify the corresponding patient.

5.3. Sampling procedures

A consecutive sample of 80 subjects was obtained from the medical records of those program participants with a diagnosis of PTSD, schizophrenia, bipolar disorder, or substance abuse (20 from each category). The sample was selected from a list of patients admitted to the Program beginning with 1995 and working backward toward 1990 until the sample was filled. Data from the medical records of selected participants were then entered on the DCF. Once the data-collecting phase was complete, the data was entered into the SPSS statistical program and analyzed.

6. Findings

6.1. Data analysis procedures

Descriptive statistics (numbers and percentages) were conducted on all variables. A linear regression was employed to examine variables which would impact patients' length of stay in the program and their GAF scores. A logistic regression was employed to assess the differences in program completion rates and competency at program completion between diagnostic groups.

6.2. Description of the sample

Seventy-eight participants were males and two were female. The mean age for participants was 44.3 years, with the youngest being 20 and the oldest being 70. There was a slight difference between the ages of those who completed the program (45.6) and those who did not (42.5). Participants' educational attainment was a mean of 13.04 years of school, with a minimum of 10 years and a maximum of 17.5 years. Six participants had not completed high school and 35 had. Twenty-one had attended college and 11 had at least a bachelor's degree.

All participants had been married at some time during their lives. Approximately 24% ($n = 19$) reported

being married at the time of admission to the program. Of the 80 participants, 32 had never been divorced (40%), 28 had divorced once (35%), 13 had divorced twice (16.3%), and six had divorced three times (7.5%). In addition, approximately two-thirds of the subjects ($n = 52$) reported having a support system (friends, family, clergy, community professionals) available to them and 22 (27.5%) claimed they did not have a support system available to them.

6.3. Program outcomes

Nearly 60% (58.7%) of the subjects successfully completed the program. Slightly more (61.6%) exited the program as "competent". An additional 8.2% were given conditional competency status dependent upon compliance with medications, sobriety, and/or follow-up care. As part of the study design, the diagnoses upon exit from the program were evenly divided among four diagnostic categories (as determined upon exit of the program) and included: schizophrenia; bipolar disorder; substance abuse; and posttraumatic stress disorder.

Although nearly all of the participants (97.5%) reported being employed at some time between military discharge and program entry, upon exiting the program nearly half (49.2%) were deemed unemployable. Another 36% were conditionally employable (provided they remained sober and/or received follow-up care and were compliant with medications). Only 13.6% were considered employable. For many of these participants, consistent employment may not have been a realistic goal due to the chronic nature of their illnesses. Another reason for this high unemployment rate may be motivation for tertiary gains. These veterans may not have been able to get or maintain benefits if they represented themselves as able to work.

A logistic regression analysis was conducted to determine the impact of all variables used on the "successful" program completion outcomes of all subjects. The independent variables used in the regression analyses were: age, gender, educational attainment by years, the presence of post-military discharge employment, marital status, times divorced, presence of a support system, primary psychiatric diagnosis, secondary psychiatric diagnosis, employability status at discharge, and whether or not childhood abuse occurred. The dependent variables used in the regression analyses were GAF scores at entry, GAF scores for the year, competency determination at discharge, completion status, and days in the program.

A linear regression was conducted to determine the impact of all variables used on the competency status of subjects at the time of discharge from the program. Results of this analysis were not significant. A linear regression analysis was also conducted to determine if subjects' entry GAF scores or their GAF scores for the previous year impacted their program completion rates. No statistical significance was found between diagnostic groups in relationship to program completion on the basis of GAF scores, or on the GAF score upon entry while controlling for the previous year's score.

Whether a patient successfully completed the program was found to be significantly associated with their primary diagnosis upon exiting the program. Seventy-five percent of those subjects with a primary diagnosis of PTSD successfully completed the program. This is nearly double the completion rate of those with a diagnosis of substance abuse (40% successfully completed). Those exiting with a diagnosis of bipolar disorder were close to the PTSD group in their rate of successful completion (70%). Those exiting with a diagnosis of schizophrenia successfully completed the program 50% of the time (see Table 1).

A logistic regression was conducted to test the differences among the four diagnostic categories. These results can be examined in Table 2. This analysis showed that patients exiting with a diagnosis of PTSD were statistically more likely to successfully complete the program than those diagnosed with either substance abuse or schizophrenia. Although bipolar disorder was not statistically significant at a p value of 0.05, it approached a significant level at 0.06.

A linear regression was conducted to determine the impact of all variables used on the length of stay in the program. The number of days in the program was statistically different among the four diagnoses assigned to subjects upon completion of the program. Those exiting with a diagnosis of substance abuse left the program, on average, after 56.5 days in the program. In a similar fashion, those with schizophrenia stayed an average 69.2 days before exiting the program. Those with PTSD and bipolar disorder, on the other hand, averaged 87 and 85.6 days in the program, respectively. Those with PTSD and bipolar disorder were more likely to successfully complete the Program and those with substance abuse and schizophrenia were more likely to leave the Program prior to successful completion (see Tables 3 and 4).

Subjects diagnosed with substance abuse by the time of their discharge from the program were the most likely to leave the Program prior to completion. This group

Table 1
Completion rates by diagnostic group

Diagnosis	Completion rate
PTSD	75%
Bipolar Disorder	70%
Schizophrenia	50%
Substance Abuse	40%

Table 2
Impact of exiting diagnostic categories on successful completion of the program

Diagnosis	Beta Coefficient	P Value
PTSD	-1.5041	0.0291
Bipolar	-1.2528	0.0608
Schizophrenia	-0.4055	0.5257
Substance Abuse	Constant	

Table 3
Mean number of days in the program by exit diagnosis category

Diagnosis	M
PTSD	87.0
Bipolar	85.6
Schizophrenia	69.2
Substance Abuse	56.5

Table 4
Impact of exiting diagnosis on the number of days in the program

Diagnosis	Coefficient	P Value
PTSD	Constant	
Bipolar	-1.4	0.8955
Schizophrenia	-17.85	0.0971
Substance Abuse	-30.55	0.0052

had an average length of stay of 56.5 days ($p = 0.005$). Those diagnosed with schizophrenia were also likely to leave the program prior to the intended 90 day period, although not at the significant $p = 0.05$ level ($p = 0.097$). Again, those diagnosed with PTSD and bipolar disorders were most likely to stay in the program, complete the program, and return to the community.

Most of the 80 subjects carried more than one diagnosis and over half (44 of 80) were dually diagnosed (with substance abuse and another psychiatric disorder). Additional regression analysis was conducted in an attempt to explore the impact of a secondary diagnosis on program completion while controlling for primary diagnosis. Outcomes were not found to be significant. This is most likely the result of a lack of statistical power due to having only 20 cases per diagnostic category.

6.4. History of child abuse

Another interesting finding was the fact that more than a quarter of the sample had experienced childhood abuse (21 patients or 26.3% of the sample). To determine this, social workers had asked 54 patients (67.5%) and an attending physician asked another 11 patients about abuse history. The literature indicates that the presence of childhood abuse may be a predictive factor for the development of subsequent combat or other related PTSD [15,18,20,21,30]. When the correlation of diagnosis to abuse was examined, childhood abuse was found to have occurred in 25% of the PTSD subjects, in 15% of the bipolar subjects, in 30% of the schizophrenic subjects, and in 35% of the substance abuse subjects. While the small number of subjects in each diagnostic category in this study may not be generalizable to the entire population, in this sample there does appear to be a significant correlation between being abused as a child and the later development of a mental disorder. This finding also substantiates that perhaps a standardized interview protocol should be implemented in order to obtain consistent and accurate social information, especially concerning childhood abuse. This research did not reveal whether subjects who had reported being abused as a child were treated for this issue. Information concerning specific treatment

goals was not available in the discharge summary or social history assessment sections of the subjects' medical records. It appears from this research that it may be beneficial to address this issue specifically in order to provide the best possible treatment for these patients.

7. Conclusions

The results of this study imply that there are definite differences between diagnostic groups in relation to their program completion rates, hence their benefit from the treatment. The practical implications of this study directly address the selection of participants for similar programs in order to maximize the treatment's benefits to the most patients for the dollars spent. Moreover, it may require developing incentives determined by organizational policy to encourage patients to stick with the treatment program. This study also substantiates that a 90-day stay in an extended care program appears necessary if the treatment is to be effective. Those subjects who remained in the program for at least

88 days were more likely to successfully complete it. Patients with a diagnosis of PTSD or bipolar disorder are shown by this study to be the most likely diagnostic group to benefit from participation in this type of treatment program. It also appears that those patients with a diagnosis of schizophrenia or substance abuse may not be appropriate for this type of treatment program, and are the least likely to benefit from it.

7.1. Limitations of the study

Some of the variables assessed were self-reported, and as these subjects are chronically mentally ill patients, the information may not be completely reliable. Johnson and Lubin [13] note, "veterans' self-reports may not be reliable or valid measures of actual outcome" (p. 401). Obtaining a consecutive sample was somewhat compromised due to the delayed or lack of availability of some records that had to be ordered from outlying clinics, other hospitals, and deceased and retirement holding areas across the United States. Also, complete variable information was not available in the medical records of all subjects. A useful measurement for program effectiveness is the difference between the entrance and exit scores of the subjects' GAF. Subjects' medical records contained entrance GAF scores only.

7.2. Suggestions for future research

The researchers observed that a large number of the subjects' parents were (one or both) reported to be alcoholics. Future research on the incidence and prevalence of this parental variable for those with PTSD will be useful in determining how important it is for our society to approach the prevention of mental illness via the prevention and treatment of substance abuse. This parental variable raises questions of predisposition that require scientific inquiry.

The prevalence of childhood abuse among the subjects of all diagnostic groups in this study indicates that more research is needed to determine if this finding is indicative of other patients within the same diagnostic categories. This supports the need to focus more attention on the prevention and treatment of child abuse to reduce the chance that it will result in posttraumatic stress disorder.

Further observations indicate that it may also be helpful to assess the benefit of an extended care treatment program by looking at the subjects' diagnosis at entry into the program, as this diagnosis often changed (most frequently to bipolar disorder) by program exit. It is

interesting to note that the majority of subjects whose diagnosis changed incurred a new diagnosis of bipolar disorder. Further assessment as to why this occurred may be needed to determine whether or not this change in diagnosis indicates a bias on the part of the attending physician or a higher prevalence of bipolar disorder in the general population. This may also indicate that bipolar disorder is often misdiagnosed especially when there has been insufficient time to observe the patient.

7.3. Practice implications

Many practitioners working with traumatized clients in extended care speculate about which clients will complete their treatment program and which will not. The information from this research study will be helpful in assessing the effectiveness and efficiency of other extended care programs, selecting program participants, and in planning future treatment programs. It is hoped that this research will indicate that consistent and accurate assessment and record keeping of a patient's social history is extremely important if treatment options are to be appropriately administered. Since the dropout rate was highest among the group being treated for substance abuse, future research should account for this. When possible, patients dropping out of treatment should have an exit interview to determine the factors leading to their decision to leave. This and other efforts may lead to greater attention to success factors in the treatment program and, as a result, significantly lower the dropout rate.

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