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# The Effectiveness of volunteer service : an occupational therapy intervention for post-traumatic stress disorder

Michelle D. Warren  
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Warren, Michelle D., M.S.

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**THE EFFECTIVENESS OF VOLUNTEER SERVICE: AN OCCUPATIONAL  
THERAPY INTERVENTION FOR POST-TRAUMATIC STRESS DISORDER**

**A Thesis**

**Presented to**

**The Faculty of the Occupational Therapy Department**

**San Jose State University**

**in Partial Fulfillment**

**of the Requirements for the Degree**

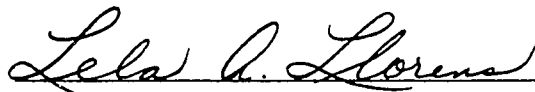
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**By**

**Michelle D. Warren, O.T.R.**

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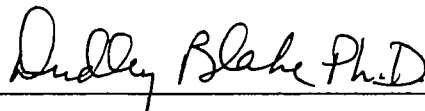
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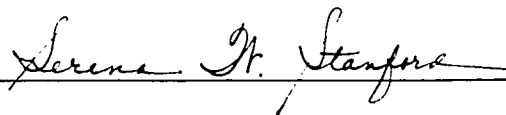


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## ABSTRACT

### THE EFFECTIVENESS OF VOLUNTEER SERVICE: AN OCCUPATIONAL THERAPY INTERVENTION FOR POST-TRAUMATIC STRESS DISORDER

by Michelle D. Warren, O.T.R.

This retrospective study assessed volunteer service as an occupational therapy intervention with Vietnam combat veterans at the National Center for Post-traumatic Stress Disorder (NC-PTSD). The research examined variables influencing self-selection, evaluated treatment efficacy, and identified characteristics of patients most responsive to treatment.

Eighty-four inpatients were divided into groups based on volunteer hours: treatment ( $\geq 20$  hours), partial treatment (1 - 19 hours), and control (0 hours). Minnesota Multiphasic Personality Inventory - 2 subscales, the Mississippi Scale for combat-related PTSD, and the Beck Depression Inventory were employed as measures of PTSD symptoms, depression, self-esteem, and socialization skills. Data were analyzed with parametric statistics.

The results indicated the following: (a) amount of participation in volunteer service was significantly correlated with the length of inpatient treatment ( $p < .001$ ); (b) the treatment group demonstrated greater improvement than the control group in all four measures but these differences did not reach statistical significance; and (c) individuals with fewer diagnoses ( $p = .03$ ) and greater childhood abuse ( $p = .04$ ) responded best to volunteer service intervention.



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## CHAPTER 1

### INTRODUCTION

#### Purpose

The purpose of this study was to assess the effectiveness of volunteer activities as an occupational therapy intervention with Vietnam combat veterans. The treatment consisted of participation in *Project Care*, a program that encouraged inpatients at the National Center for Post-traumatic Stress Disorder (NC-PTSD) to volunteer assistance for recreational activities at the Nursing Home Care Unit (NHCU). The research was designed to: (a) determine variables that influence self-selection by examining factors that included, but were not limited to: age, length of inpatient Post-traumatic Stress Disorder (PTSD) treatment, number of diagnoses, combat exposure, and childhood abuse, (b) evaluate treatment efficacy through an analysis of changes in depression, self-esteem, PTSD symptoms, and social well-being in relationship to participation in the Project Care program, and (c) identify characteristics discernible at admission of patients who demonstrated greatest benefit from participation.

#### Statement of the Problem

Current PTSD research in treatment efficacy primarily focuses on verbal approaches; therefore, empirical studies of activity oriented therapy are essential to the continuation of occupational therapy involvement in PTSD treatment. PTSD symptoms typically include social isolation, depression, low self-esteem, impaired vocational skills, and an absence of leisure pursuits (American Psychiatric Association [APA], 1987; Bonder, 1991). The complexity of this disorder inspired a unique approach to occupational therapy treatment at the



National Center for PTSD: engaging patients in therapeutic volunteer activities as recreation aides in the NHCU. Veterans have the opportunity to practice interpersonal skills and prevocational skills while rediscovering enjoyment in leisure activities. Many have reported amazement at finding their efforts appreciated "even though we are Vietnam veterans," and frequently they reevaluate their perception of self-worth. Though the therapeutic value of the program is apparent to the NC-PTSD Occupational Therapist, to the NHCU Recreation Therapist, and to the patients involved (Fletcher, 1990), research and literature validating this type of program is unavailable.

### Objectives

The objectives of this research were to:

1. determine the variables that influenced self-selection by inpatient Vietnam veterans for therapeutic volunteer activities,
2. determine treatment efficacy of therapeutic volunteer activities for inpatient Vietnam veterans, and
3. identify characteristics of the inpatient Vietnam veterans who demonstrated the greatest benefit from therapeutic volunteer activities.

### **Research Questions**

The questions addressed in this study were:

1. Does a significant correlation exist between amount of time spent by inpatient Vietnam veterans who participated in Project Care and:
  - a. age,
  - b. length of inpatient PTSD treatment,
  - c. number of diagnoses,
  - d. combat exposure level,
  - e. incidence of childhood abuse,
  - f. intake depression,
  - g. intake self-esteem,
  - h. intake PTSD symptoms, or
  - i. intake social well-being?
  
2. Do inpatient Vietnam veterans who engaged in a minimum of twenty hours of therapeutic volunteer activities show greater improvement than non-participating Vietnam veteran inpatients in the following areas:
  - a. depression,
  - b. self-esteem,
  - c. PTSD symptoms, or
  - d. social well-being?

3. Among Vietnam veterans who volunteered twenty hours or more, were there characteristic differences between the ten individuals who experienced the greatest benefit when compared to the ten who showed the least benefit? Characteristics to be examined include:
- a. age,
  - b. number of diagnoses,
  - c. incidence of childhood abuse,
  - d. combat exposure level,
  - e. intake depression,
  - f. intake self-esteem,
  - g. intake PTSD symptoms, and
  - h. intake social well-being.

#### Definitions

For the purposes of this study, terms have been defined both conceptually and operationally as follows:

**Childhood Abuse:** Excessive verbal ridicule, physical punishment, or any behavior related to sexual foreplay or coitus with a minor (Allgeier & Allgeier, 1984).

*Operational:* Self-report of experiencing emotional, physical, or sexual abuse on the Basic Admissions Data Questionnaire, questions 66 - 68 (see Appendix A).

**Combat Exposure:** The amount and severity of life-threatening situations experienced by the individual during combat-related duties (Keane, Fairbank, Caddell, Zimering, Taylor, & Mora, 1989).

*Operational:* Raw score on the Combat Exposure Scale (see Appendix B).

**Depression:** A feeling of worthlessness usually accompanied by a loss of interest in pleasurable outlets such as food, sex, work, friends, hobbies, or entertainment (F. A. Davis Company, 1989).

*Operational:* (a) Raw score on the Beck Depression Inventory, (b) T-score on the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) "Depression" clinical scale, and (c) T-score on the MMPI-2 "Depression" content scale (see Appendices C and D).

**Diagnoses:** "The term denoting name of the disease or syndrome a person has or is believed to have" (F. A. Davis Company, 1989, p. 492).

*Operational:* The number of diagnoses was determined by structured diagnostic interviews conducted by psychologists and listed in the Psychological Assessment Summary section titled "Diagnostic Impressions" (see Appendix E).

**Greatest Benefit:** Marked improvement in psychological health in relation to other subjects in the same treatment group.

*Operational:* The scores of those patients who demonstrated the most positive change on the "level of benefit" composite score.

**Inpatient PTSD Treatment:** Admission to the National Center for Post-traumatic Stress Disorder.

*Operational:* The number of weeks as an inpatient based on the admission date from the Information Resource Management Service report (Appendix F) and the discharge date from an internal NC-PTSD patient flow record (Appendix G).

**Least Benefit:** Less marked improvement, possibly even deterioration, in psychological health in relation to other subjects in the same treatment group.

*Operational:* Those patients who demonstrated the least positive change on the "level of benefit" composite score.

**Level of Benefit:** A measure of psychological health based on psychometric scores.

*Operational:* Determined by a composite measure including all psychometric scores used in this research that related to a change in depression, self-esteem, PTSD symptoms, and social well-being.

**Post-traumatic Stress Disorder (PTSD):** A psychological disorder following a stressful event outside the range of usual human experience; symptoms include persistently reexperiencing the traumatic event, avoidance of related stimuli or numbing of general responsiveness, and increased physiological arousal (APA, 1987).

*Operational:* Raw scores on (a) MMPI-2 Keane's PTSD supplementary scale, and (b) PTSD Mississippi Scale (see Appendices D and H).

**Project Care:** A joint occupational/recreational therapy program that encouraged inpatients at the National Center for Post-traumatic Stress Disorder (NC-PTSD) to volunteer assistance for recreational activities at the Nursing Home Care Unit (NHCU).

*Operational:* Participation in Project Care was determined by self report on the Sign In/Out sheets posted at the NHCU (see Appendix I).

**Self Esteem:** Having positive attitudes about oneself and one's abilities to integrate with society (Hathaway et al., 1989).

*Operational:* T-score on the MMPI-2 "Low Self-Esteem" content scale (see Appendix D).

**Social Well-Being:** The ability to interpersonally interact (Hathaway et al., 1989).

*Operational:* T-scores on (a) MMPI-2 "Social Introversion" clinical scale, (b) MMPI-2 "Social Responsibility" supplementary scale, and (c) MMPI-2 "Social Discomfort" content scale (see Appendix D).

**Therapeutic Volunteer Activities:** Professionally structured services concerned with the welfare of others, as opposed to self-centered pursuits (Houghton Mifflin Company, 1985).

*Operational:* For the purposes of this study, the definition will be limited to involvement in Project Care.

**Vietnam veteran:** An individual who served in the United States Armed Forces during the time period of 1964-1973 (Williams, 1987).

*Operational:* Subjects in this study participated in combat in Southeast Asia (Vietnam) as indicated on Question 42 of the Basic Admissions Data Questionnaire (see Appendix A).

**Volunteer Time:** Providing services without monetary compensation.

*Operational:* Number of participation hours recorded on the Project Care sign-in/out data sheet (see Appendices I and J).

### **Assumptions**

Since the patients underwent a thorough diagnostic process, it was assumed that those in this study were appropriately diagnosed with PTSD. It was further assumed that these patients suffered from the typical symptoms associated with PTSD. Because of the voluntary nature of both being involved in treatment at the NC-PTSD, and in Project Care, patients were believed to be motivated to actively participate in therapy. A therapeutic structure and interaction was assumed to exist between therapists and patients.

### **Limitations**

The archival nature of this study introduced potential biases. First, the inability to use random selection, assignment, and control of variables threatened the internal and external validity of the study (Isaac & Michael, 1990). Attempts to minimize these threats to validity included:

1. the use of a comparison group to limit the effects of history, pretesting, maturation, and instrumentation,
2. selection of only those patients who completed both pre- and post-treatment data to reduce mortality effects; however, this selection procedure may have resulted in subject selection bias (e.g. perhaps patients most resistant to treatment refused to complete exit testing),

Second, Project Care was a joint program between occupational therapy and recreational therapy. The effects specifically related to the occupational versus recreational therapy intervention could not delineated.

Third, during the extended time period of data collection, three different therapists were responsible for the program at separate times. This may have resulted in inconsistencies in program continuity.

Fourth, the patients were responsible for signing in and out each time they volunteered. The record keeping operated on an honor system and was found to contain some inaccuracies. Several patients had refused to sign in regularly because they did not want to receive the rewards and recognition that accompanied thirty hours of recorded participation. For other patients, the extrinsic rewards (i.e., a Project Care tee-shirt and a program recognition ceremony) enticed them to exaggerate their service.

Fifth, it was impossible to provide one program that would be intrinsically motivating for all the patients at the NC-PTSD. Patients who felt uncomfortable with geriatric populations may have participated in other service-oriented activities, such as choir performances, or volunteer ward duties. These individuals may have been included in the control group but in reality, they may have been volunteering their services in another manner.

Finally, external validity may have been compromised due to the study being confined to one treatment program. The severity of symptoms in the patients referred to this center could be greater than those typically found in other PTSD programs.

### **Significance of the Study**

Demonstrating the efficacy of occupational therapy is vital to its continued inclusion in PTSD treatment; for example, a recent book chapter summarizing current trends in PTSD treatment fails to list *any* activity therapy interventions (Keane, Albano, and Blake, 1992). Treatment studies also contribute to the



growth of the profession's knowledge base. Recent formal recognition of Post-traumatic Stress Disorder as a psychiatric diagnosis (American Psychiatric Association, 1980) has resulted in multidisciplinary research that explores the efficacy of various treatment philosophies. As a discipline that has served this population since World War I, occupational therapy has a unique opportunity to demonstrate the value of an activity oriented approach to treating PTSD patients.

It is estimated that 479,600 Vietnam Veterans meet the criteria for PTSD and an additional 350,000 experience partial PTSD (Kulka, Schlenger, Fairbank, Hough, Jordan, Marmar, & Weiss, 1990). These figures do not include (a) veterans of other wars, (b) the spouses, children, and others adversely affected by the veteran's dysfunctional behavior, or (c) non-military PTSD arising from traumatic accidents, natural disasters, gang combat, violent crime, and domestic violence.

Conducting and publishing research is crucial since occupational therapy plays a markedly less prominent role in contemporary PTSD treatment. During World War I there were approximately 150 occupational therapy reconstruction aides stationed in Europe (Meyers, 1948) who were valued as a positive treatment component (Low, 1992). Today, fifteen specialized inpatient PTSD treatment programs exist within the Veteran's Affairs Medical Centers (Goldston, 1991) but only one Registered Occupational Therapist is specifically assigned to an inpatient PTSD treatment program.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **Introduction**

Literature significant to this study includes descriptive information regarding the diagnosis of Post-traumatic Stress Disorder (PTSD), the evolution of its recognition as a psychiatric disorder, and the current treatment process used at the National Center for Post-traumatic Stress Disorder (NC-PTSD). The history and role of Occupational Therapy in PTSD treatment is explored with a discussion of the theoretical basis for intervention and the importance of altruistic activities. The chapter closes with a program description of Project Care, a program that encouraged inpatients at the NC-PTSD to volunteer assistance for recreational activities at the Nursing Home Care Unit, and a summary.

#### **The Post-traumatic Stress Disorder (PTSD) Diagnosis**

Post-traumatic Stress is considered to be a normal reaction to a terrifying, uncontrollable event. Individuals may respond with "feelings of terror, vulnerability, helplessness, fear of bodily injury, or overwhelming loss and guilt over actions taken or avoided" (Hiley-Young, Furey, Perkal, & Friedman, 1992, p. 1). When this response becomes a generalized and chronic behavior pattern, it is referred to as Post-traumatic Stress Disorder (PTSD) (American Psychiatric Association [APA], 1987). The most common manifestations of the disorder are reexperiencing the traumatic event; avoidance of thoughts, feelings, or activities that evoke memories of the original event; and a chronically heightened physiological arousal (APA, 1987; Williams, 1987). These individuals tend to be

socially avoidant and resist becoming emotionally involved with others. Frequently, depression and substance abuse accompany the diagnosis of PTSD (APA, 1987; Egendorf, 1985).

### History of PTSD

As summarized in Hiley-Young et al. (1992), allusions to PTSD symptoms were recorded in the 8th century B.C. epic, *The Odyssey of Homer*; in the 17th century play *Henry IV*; and by Charles Dickens following his experience in a railway accident in 1865. Jacob Mendes Da Costa may have been the first physician to study the syndrome. In 1871, he termed the disorder "a soldier's heart" because of the common complaint of heart pain among American Civil War veterans with no evidence of cardiac disease. In 1885, physician Herbert Page was working with victims of railway collisions and he identified the syndrome as "nervous shock." In his work with World War I veterans, F.W. Mott coined the term "shell shock." Several terms were used in World War II: combat stress, battle stress, battle fatigue, combat exhaustion, and acute combat reaction.

Psychiatric diagnoses delineated by the American Psychiatric Association in the Diagnostic and Statistical Manual (DSM) have also changed over time. In the 1952 DSM I, the disorder was referred to as "Gross Stress Reaction," in the DSM II (1968) it was labeled "Transient Situational Disturbances," and finally, in the DSM III (1980) it became an independent category, "Post-traumatic Stress Disorder" (Blake, Abueg, Woodward, & Keane, in press; Hiley-Young et al., 1992). Historically, PTSD treatment efficacy studies have focused on pharmacological agents, psychotherapy, and behavioral approaches (Blake et al., 1992; Keane, Albano, & Blake, 1992).

### **The National Center for PTSD**

Specialized treatment for combat-related PTSD is available through the Department of Veteran's Affairs Medical Centers (VAMC). The first inpatient PTSD program in the country was founded in 1978 at the Palo Alto VAMC, Menlo Park Division, two years before the diagnosis was included in the DSM - III (APA, 1980; Berman, Price, & Gusman, 1983; Darling, 1992). In 1989, Congress provided funding for a National Center for PTSD (NC-PTSD) comprised of five divisions nationwide. The Menlo Park facility was included in the NC-PTSD and is the largest of the divisions; it has 106 beds, with approximately 325 inpatients admitted each year (Darling, 1992). Veterans are referred to the NC-PTSD from sources nationwide and participate in the program on a voluntary basis. Patients are evaluated and placed in either the "Specialized Treatment Program" or the "PTSD-Alcohol Program." Following completion of their treatment for PTSD issues (6 weeks - 4 months), the veterans may be considered for participation in the transitional "Crossroads Program." The NC-PTSD treatment goals are focused on reintegrating the veteran into society, assisting with the development of skills necessary for meaningful relationships, and teaching that the survival techniques required for combat can inhibit functioning in civilian life (Darling, 1992).

The initial stage of treatment focuses on educating veterans regarding the diagnosis, teaching elementary social skills through required one-to-one structured interviews between the patients, and discussing appropriate expression of emotions. Few realize that their tendency toward rage and violence is their method of hiding the deeper emotions such as fear, pain, or vulnerability. One veteran who entered the program in a perpetual state of

anger made the following statement, "I lost some friends over there, and that pissed me off. People didn't like me because I was a Vietnam vet and a baby killer" (Darling, 92, p. 25). Instead of feeling sorrow at his friends' death, the patient stated that he was "pissed off." He also could not identify that the rejection of others made him feel hurt; he only expressed anger. The therapists frequently label emotions for the veterans and teach them that expressing anger may be preventing them from addressing their painful feelings.

In the next stage of treatment, veterans are assigned to "focus" groups where in-depth therapy occurs. These sessions are not limited to war traumas but, where appropriate, veterans also address childhood abuse and post-war traumas. The veterans often develop group cohesion and interpersonal relationships that they have not allowed themselves since their teenage years. One patient said "As each man would go through his experiences and how he felt, you could get in touch with your feelings. You could cry. The guys in the group were very tight, very supportive" (Darling, 92, p.25). Remembering is a painful process for these men. During treatment one Vietnam veteran expressed his PTSD experiences in the following poem:

*It's time I come Home*

Lord let me forget  
let me have some peace  
from that war I was in  
let the memories cease

Stop the flash of this recall  
that deems my days  
It's been too long now!  
they should have long went away.

My concentration is pleagued (sic)  
I can't keep thoughts straight  
I keep going back and back  
to that war filled with hate

I've been seeking relief  
with this drug at my side  
but now it won't help  
the tears that I hide

Am I to live the rest of my life  
with these battles each day  
fighting and fighting those thoughts  
that keep getting in my way.

I know now I need help  
I can't fight this alone  
twenty three years of hell Lord  
It's time I come home.

The third stage of treatment focuses on transitioning into the community. Many of the inpatients were homeless prior to admission. In the Crossroads Program, veterans have the opportunity to develop life skills such as taking a bus, shopping for groceries, or budgeting their money. Seminars on job searching skills are available and therapists assist the veterans in developing outpatient support networks.

Throughout their treatment the veterans are encouraged to participate in two volunteer programs implemented by occupational therapists: the choral group and Project Care.

### **The Role of Occupational Therapy in PTSD Treatment**

Treatment of Post-traumatic Stress Disorder symptoms has included Occupational Therapy since World War I (1918) when occupational therapy reconstruction aides stationed in Europe encouraged traumatized soldiers to

participate in woodworking, metal working, and basketry activities (Myers, 1948). The therapeutic philosophy was to interest the men in normal occupations where they could engage in creative self-expression, "self-forgetfulness," and consequently, regain the ability to return to active duty (Myers, 1948). Though the emphasis was on the diversional aspects of the activities, their therapeutic value was recognized and an order was issued by the Surgeon General to "send over a thousand of these aides as soon as you can get them ready" (Myers, 1948, p. 209). Throughout the war, references to occupational therapy were numerous and were consistently favorable (Low, 1992); however, controlled research on treatment effectiveness either was not conducted or was inadequately documented.

### **Theoretical Basis for Occupational Therapy Intervention**

Developmental theorists such as Erik Erikson, Arnold Gesell, and Sigmund Freud, have articulated a progression of stages that individuals experience throughout the life-span (Christiansen & Baum, 1991). These stages represent the individual's ability to master the expectations of the society, to develop appropriate behaviors, and to meet personal needs. Occupational therapy theorists such as Lela Llorens, A. Jean Ayres, and Mary Reilly have expanded upon this work and identified the functional level within the occupational performance areas and components related to the various developmental stages (Christiansen & Baum, 1991). Though general ages are specified for normal stage progression, it is recognized that situational factors can cause the advance, arrest, or regression of development. Activities that facilitate developmental growth have also been identified (Christiansen & Baum, 1991; Llorens, 1974, 1976).

The Occupational Performance frame of reference provides parameters for assessing the individual's role success as employee or family member, relative to a healthy balance of work, self-care, and leisure activities. The requisite skills for these activities include motor, sensory-integrative, cognitive, psychological, and social functioning (Christiansen & Baum, 1991; Pedretti & Zoltan, 1990). Patients with combat-related PTSD frequently exhibit role dysfunction, with an inability to maintain employment, intimate relationships, or permanent housing (Dean, 1990). These patients demonstrate poor problem-solving skills and time-management skills (cognitive skills), with either an emphasis on workaholic or other addictive behaviors. Dysfunctional psychological and social coping skills also interfere with successful role attainment (Blake et al., 1992; Bonder, 1991).

While the fundamental philosophy of utilizing normal occupations as therapeutic activity still exists in the occupational therapy profession, the justification has become more refined (Christiansen & Baum, 1991; Fidler & Fidler, 1978; Meyer, 1921). Therapists are currently educated and trained to identify both the physical and psychosocial components of activities and to appropriately structure activities to facilitate functional adaptation (Allen, 1987; DiJoseph, 1982; Lamport, Coffey, & Hersch, 1989). However, the importance of intrinsic motivation (Florey, 1969; Teitelman, 1982) and the value of altruistic service (Tickle & Yerxa, 1981) are minimally discussed in the scientific literature.

### **The Need for Altruistic Activity**

In order to survive war, the veterans reported that they isolated themselves from their emotions and from caring about others. One veteran stated "I can't get close to anybody. There is no teamwork because people are either coming or going or being put in a bag" (Darling, 92, p. 24). Many veterans



expressed fear that if they allowed themselves to reconnect with their feelings, to remember the horror of the war and express the pain, that they would start crying and be unable to stop; some believed that they would lose their minds (Egendorf, 1985). However, this isolative coping mechanism is not healthy. The statistics available for Vietnam veterans indicate that their divorce rate is in the ninetieth percentile (Dean, 1990) and studies have shown a positive correlation between relationships and well-being: both physical and mental (Pacificon, 1981).

Breaking the isolation is a difficult but necessary part of the healing process. *Friends Can Be Good Medicine* (Pacificon, 1981) suggests that the best method to develop social support is to give it. They further state that the act of giving will enhance the individual's self-esteem. This perception is supported by Coopersmith's work on the antecedents of self-esteem (1967). Coopersmith stated that preventing low self-esteem requires self-initiated participation in activities that provide the individual with feelings of control, adequacy, and competence. Participating in altruistic activities encourages feelings of worthiness and success. A Vietnam veteran who became a psychologist following the war made the following observation regarding altruistic pursuits in his book Healing from the War (Egendorf, 1985):

... the cure for a life diminished by the fearful refusal to care is to call courageously on that capacity and to express caring in ways that make it real. Only by getting involved in ways that are meaningful to us do we become the kind of people who warrant our own respect. And only then do we recapture the esteem that is the sense of being whole (p. 108).

Another Vietnam veteran expressed his need to altruistically serve others in the following poem written during combat:

*What Am I To Do With My Mind*

The night lit up with flares like the day  
 The ground was torn, a village wiped away  
 I tell you in the end there was no way  
 We could win  
 So what am I to do with my mind?

As you passed you watched the people stare  
 And you wondered if they didn't care  
 You could see it in their eyes  
 They didn't realize  
 So what am I to do with my mind?

I hope some day that people would agree  
 That fighting and pain will not make you free  
 It's helping and a hand, it's one of God's gifts  
 To man  
 . . . and that is what I'll do with my mind.

Engaging in altruistic activities disrupts isolative behavior, can provide social support in return, and may increase the individual's self-esteem. The NC-PTSD occupational therapist recognized that the patients needed a safe environment that encouraged altruistic service. These activities encouraged the practice of communication skills and facilitated the formation of friendships, allowing the veterans to feel, and express, emotions. With these therapeutic goals in mind, the Project Care program was developed.

**Project Care: The Volunteer Experience**

Project Care is a program that encourages inpatients at the NC-PTSD to volunteer assistance at the NHCU recreational events. The program's therapeutic goals are to (a) develop pre-vocational and transferable work skills; (b) reinforce social interaction through the use of communication skills and affect management skills; (c) encourage constructive use of leisure time; and (d) improve self-esteem (Fletcher, 1990; NC-PTSD Project Care Group Protocol).

Patients can be involved in the planning committee and three different categories of leisure activities. The planning committee consists of the PTSD Occupational Therapist, the NHCU Recreation Therapist, one representative from each PTSD ward, and from three to five NHCU residents. The purpose of this group is to conceive and organize activities for the mutual benefit of both programs.

Occasionally, the planning committee organizes large on-site events. These activities have included: (a) birthday parties; (b) seasonal celebrations involving patient musical performances, joint games such as Family Feud, and award presentations recognizing especially dedicated PTSD volunteers; (c) holiday celebrations involving extensive decorating projects, patient skits, performances, and gift distribution; and (d) talent shows. Other in-house social events have involved NHCU residents of all cognitive levels; PTSD volunteers help set up for the activity, escort the patients to the recreation room, involve patients in activity as tolerated, and help to clean up the room. The activities have included bingo games, banana split socials, sing-alongs, dances, and barbecues.

During outings into the community, the PTSD inpatients act as escorts to provide NHCU staff support. Their duties include: (a) insuring the safety of the NHCU resident, (b) assisting with resident's mobility, and (c) facilitating the resident's enjoyment of the outing by reading the program/menu aloud, making sure the resident can hear, providing explanations of the event, and/or setting up the resident's meal. The activities have included sporting events (fishing, watching professional athletics), cultural events (theater, symphony), and miscellaneous outings (e.g., shopping, eating at restaurants).

PTSD patients who have demonstrated responsibility and interest in Project Care may be recommended as *Beside Buddies* for prescribed interactions with residents identified by the NHCU treatment team as having special needs. As a Bedside Buddy, the PTSD veteran commits to spending regular time with the NHCU resident. Activities include talking, taking walks together, reading aloud, playing or listening to music, or writing dictated letters for the NHCU resident. Frequently, the pair develop a close relationship and may even go on off-site outings together. NHCU residents and PTSD veterans who feel displaced by their families and society often find that these relationships help to alter their feelings of abandonment to feelings of acceptance.

In one Bedside Buddy initiated friendship, a NHCU resident had refused to leave her room for five years. Her Bedside Buddy convinced her to dance with him at a social event held in the community room. They exchanged poetry, and she inspired him to become a teacher (Darling, 1992). A second veteran enjoyed working with the geriatric population so much that he enrolled in a vocational program to become a Nurses' Aide. A third participant reported "I feel that I've been given something and I want to give something back . . . I like seeing a smile on their face. I could share their tears and their pain" (Darling, 1992). Another PTSD patient said "It's really made me feel accepted. I'd always wanted that and I never had it. I volunteered to come back again and again" (Fletcher, 1990). From these sample comments made by the patients, the program appears to be meeting its therapeutic goals.

### Summary

Post-traumatic Stress Disorder symptoms have been documented in the literature since the 8th century (Hiley-Young et al., 1992). Common manifestations of PTSD are reexperiencing the traumatic event, socially avoidant behavior, and chronically heightened arousal as delineated in the Diagnostic and Statistical Manual of Mental Disorders, Third Edition (APA, 1980). According to the literature, specialized inpatient treatment for veterans experiencing these symptoms was initiated earlier, in 1978, at the Palo Alto Department of Veteran's Affairs Medical Center (VAMC) (Berman, Price, & Gusman, 1983).

Volunteer participation in occupational activities continues to be a cornerstone of occupational therapy (Christiansen & Baum, 1991). During World War I, occupational therapists engaged mentally traumatized soldiers in normal workshop occupations and reported good results in successfully returning these men to active duty (Low, 1992; Myers, 1948). In 1989, Project Care was developed as a multidisciplinary therapy at the Palo Alto VAMC (Fletcher, 1990). It was designed as an altruistic program for inpatient veterans to facilitate the development of social skills and self-esteem (Fletcher, 1990). An Occupational Performance frame of reference was described (Christiansen & Baum, 1991).

## CHAPTER 3

### DESIGN AND METHODOLOGY

#### Purpose

The purpose of this study was to assess the effectiveness of volunteer activities as an occupational therapy intervention with Vietnam combat veterans. The treatment consisted of participation in *Project Care*, a program that encouraged inpatients at the National Center for Post-traumatic Stress Disorder (NC-PTSD) to volunteer assistance for recreational activities at the Nursing Home Care Unit (NHCU). The research was designed to: (a) determine variables that influence self-selection by examining factors that included, but were not limited to: age, length of inpatient Post-traumatic Stress Disorder (PTSD) treatment, number of diagnoses, combat exposure, and childhood abuse, (b) evaluate treatment efficacy through an analysis of changes in depression, self-esteem, PTSD symptoms, and social well-being in relationship to participation in the Project Care program, and (c) identify characteristics discernible at admission of patients who demonstrated greatest benefit from participation.

#### Research Design

This was an archival study that utilized records of inpatient Vietnam veterans who participated in Project Care between February, 1991 and August, 1992. The quasi-experimental design used a treatment group, a partial treatment group, and a control group (Campbell & Stanley, 1963). Pre- and posttest data for each group were analyzed with parametric statistics. In this study, variables could not be manipulated. Following discharge from inpatient treatment, assignment to a subject group was determined by the patients' self-selected level

of participation in volunteer service. Variables determined by the selection criterion included gender, war, diagnosis, and treatment process.

### **Subjects**

The eighty-four subjects selected for this study were all male Vietnam veterans diagnosed with PTSD who had been admitted as inpatients to the NC-PTSD program between February, 1991 and August, 1992. Their ages ranged from 38 - 49 years, with a mean age of 43.5 years. Veterans must have completed both intake and exit psychological testing and those participating in Project Care must have done so voluntarily. No patients were included that were unwillingly referred, or were patients involved in work therapy and were receiving monetary compensation.

The initial selection of subjects were those who participated in Project Care. All patients who had volunteered at least 20 hours between February, 1991 and August, 1992 were included in the treatment group. This group totaled twenty-eight patients. From the group of 59 eligible patients who participated 1 - 19 hours, twenty-eight were then randomly selected for the partial treatment group. Finally, from the group of 74 eligible patients who never participated in Project Care, twenty-eight were randomly selected for the control group.

### **Data Collection**

After the subjects were identified, the research data were extracted from the routinely administered Basic Admission Data Questionnaire (Appendix A), the intake and exit psychological testing (Appendices B, C, D, & H), the psychological assessment summary (Appendix E), a report generated by the Palo Alto VA Medical Center Information Resource Management Services (IRMS) (Appendix F), an internal NC-PTSD record of discharge dates (Appendix G), and

Project Care Sign-In/Out Sheets (Appendix I and J). These data were entered into a database using the format delineated in Appendix K.

### **Instruments**

Several instruments were utilized to compile the research data. The following is a description of each tool and the information it provided.

1. **Basic Admission Data Questionnaire:**

This self-report tool employed a checklist format for providing information regarding (a) the war in which the individual participated, and (b) the types of childhood abuse the patient may have experienced. Three types of abuse were identified: physical, emotional, and sexual (see Appendix A). For the purposes of this study, if a patient indicated he had been a victim of abuse, a 1 was assigned to the appropriate category. No abuse was indicated by a zero. The veteran could indicate abuse in all categories resulting in a possible range of 0 - 3.

2. **Intake and exit psychological testing:**

**Beck Depression Inventory (BDI):**

"The BDI was derived from clinical observations . . . (that were) consolidated systematically into 21 symptoms and attitudes which could be rated from 0 to 3 in terms of intensity" (Beck, Steer, & Garbin, 1988, p. 79). The range of scores is 0 - 63. The BDI has good internal consistency with a coefficient of alpha = .86. Its test-retest reliability for depressed and substance abusing populations ranges from .65 to .82. It also demonstrates good concurrent validity with



other depression measures such as the Hamilton Depression Scale,  $r > .60$  (see Appendix C).

**Combat Exposure Scale (CES):**

The CES is a seven item Likert-type subjective scale that quantifies the extent of combat exposure. After weighting the item scores, the possible range of the scale is 0 to 41. Classification is as follows: light (0 - 8), light-moderate (9 - 16), moderate (17 - 24), moderate-heavy (25 - 32), and heavy (33 - 41). The CES has good internal consistency with a coefficient of alpha = .85, and excellent test-retest reliability  $r(29) = .97, p < .0001$ . The scale also demonstrated acceptable discriminant validity,  $t(60) = 2.98, p < .005$ , when comparing Vietnam veterans with PTSD diagnoses to members of a Vietnam Veterans Leadership Group (Keane, Fairbank, Caddell, Zimering, Taylor, & Mora, 1989) (see Appendix B)

**Minnesota Multiphasic Personality Inventory - 2 (Hathaway et al., 1989):**

"High" scores refer to scores above 65 (sample questions in Appendix D).

**Depression Clinical Scale (D):**

This is an empirically developed 57 item scale that "reflects not only the feelings of discouragement, pessimism, and hopelessness that characterize the clinical status of depressed individuals, but also the basic personality features of hyper-responsibility, high personal standards, and intrapunitiveness" (p. 28). The internal consistency coefficient of alpha = .59 and the test-retest is  $r = .75$ .

**Social Introversion Clinical Scale (SI):**

This is an empirically developed 69 item scale. "Scores above the mean reflect increasing levels of social shyness, preference for solitary pursuits, and lack of social assertiveness" (p. 30). The internal consistency coefficient of alpha = .82 and the test-retest is  $r = .92$ .

**Keane's PTSD Supplementary Scale (PK):**

An empirically developed subset of 46 MMPI-2 questions that discriminate PTSD-positive from PTSD-negative combat veterans. Its discriminant validity is 0.82. The internal consistency coefficient of alpha = .85 and the test-retest is  $r = .86$  (Lyons & Keane, 1992).

**Social Responsibility Supplementary Scale (Re):**

This is a 30 item scale. "High scorers tend to see themselves and are seen by others as willing to accept the consequences of their own behavior, as dependable and trustworthy, and as having integrity and a sense of responsibility to the group" (p. 39). The internal consistency coefficient of alpha = .67 and the test-retest is  $r = .85$ .

**Depression Content Scale (DEP):**

This scale is a subset of the MMPI-2 questions categorized by content. "High scores on this scale characterize individuals with significant depressive thoughts" (p. 42). The internal consistency coefficient of alpha = .85 and the test-retest is  $r = .87$ .

**Low Self-Esteem Content Scale (LSE):**

This scale is a subset of the MMPI-2 questions categorized by content. "High scores characterize individuals with low opinions of themselves, do not believe they are liked, or that they are important. They lack self-confidence and find it hard to accept compliments" (p. 43). The internal consistency coefficient of alpha = .79 and the test-retest is  $r = .84$ .

**Social Discomfort Content Scale (SOD):**

This scale is a subset of the MMPI-2 questions categorized by content. "High scorers are very uneasy around others, preferring to be by themselves" (p. 44). The internal consistency coefficient of alpha = .83 and the test-retest is  $r = .91$ .

**The Mississippi PTSD Scale:**

The Mississippi Scale for Combat-Related PTSD is "a 35 item self-report scale derived from DSM criteria for the disorder" (Keane, Caddell, & Taylor, 1988, p. 85) The possible range of scores is 35 to 175. The cutoff score for PTSD is set at 107, a score which correctly classifies 90% of all subjects as PTSD or non-PTSD. It has high internal consistency with a coefficient of alpha = .94, test-retest reliability with  $r = .97, p < .0001$ , and discriminant validity in the 90 % range (see Appendix H).

3. **Psychological Assessment Summary:**

The psychological assessment involves a mental status examination, diagnostic interviews, and psychometric testing. Two extensive diagnostic interviews are utilized: the Structured Clinical Interview for (DSM-III-R) Diagnosis (SCID) (selected parts), and the Clinician Administered PTSD Scale - Form 1 (CAPS-1) (see Appendix E). The summary was used to determine the presence/absence of a PTSD diagnoses and to determine the total number of DSM-III-R Axis I and Axis II diagnoses.

4. **A report generated by Palo Alto VA Medical Center Information Resource Management Services (IRMS):**

This report provided information regarding the patient's admission date and age (see Appendix F).

5. **An internal NC-PTSD record of discharge dates:**

A staff member of the NC-PTSD recorded each discharge on a patient flow calendar. This provided accurate discharge dates for calculating the weeks of PTSD treatment (see Appendix G).

6. **Project Care Sign-In/Out Sheets:**

Patients sign in and out on an honor system when participating in Project Care. These sheets were used to tally the number of hours that each patient volunteered (see Appendix I and J).

### **Methodology**

Patients who were admitted to the NC-PTSD routinely completed an extensive intake evaluation which included a mental status examination, diagnostic interviews, and psychometric testing. They were then assigned to the

appropriate program based on whether alcohol dependence was an issue in addition to PTSD symptomatology. The first four weeks were dedicated to medical and psychiatric evaluations, orientation to the PTSD program, and integration into the patient community.

During the time period of February, 1991 to August, 1992, a patient could request permission from his program coordinator to volunteer at the large, on-site Project Care events after four weeks of treatment. If approved, the patient would be accompanied by a senior patient and provided with an orientation to Project Care. The sign-in procedure was explained and the importance of following through on commitments was emphasized. After the patient's treatment review, which occurred at approximately six weeks, the patient could participate in all levels of the Project Care activities. Treatment groups could never be missed for the purpose of participating in the volunteer activities and approval from the program coordinator was necessary for participation in off-site events.

Subjects were not identified for this research until after they were discharged from the program. At that time, the patient's information was evaluated to determine whether he met the following research criteria: (a) he completed both intake and exit psychological testing, (b) he was a Vietnam veteran, (c) he was diagnosed with PTSD, and (d) if a Project Care participant, he did so on a voluntary basis.

The Project Care sign in sheets were used to tally the number of hours volunteered (Appendices I and J) and assignment to one of the groups was based on the level of participation. In August, 1992, the selection process was conducted and research data for the participants were recorded (Appendix K).

Patient confidentiality was protected by assigning subject numbers to the patient and entering the data into the computer by number only. Tally sheets had two columns for the subject number which were then cut apart. This method left one list of names with their associated subject number and one list with the data (see Appendix J). No individual patient consent forms were necessary for this study given its retrospective nature and confidential recording techniques.

### Research Questions

The questions addressed in this study were:

1. Does a significant correlation exist between amount of time spent by inpatient Vietnam veterans who participated in Project Care and:
  - a. age,
  - b. length of inpatient PTSD treatment,
  - c. number of diagnoses,
  - d. combat exposure level,
  - e. incidence of childhood abuse,
  - f. intake depression,
  - g. intake self-esteem,
  - h. intake PTSD symptoms, or
  - i. intake social well-being?

2. Do inpatients Vietnam veterans who engage in a minimum of twenty hours of therapeutic volunteer activities show greater improvement than non-participating Vietnam veteran inpatients in the following areas:
  - a. depression,
  - b. self-esteem,
  - c. PTSD symptoms, or
  - d. social well-being?
  
3. Among Vietnam veterans who volunteered twenty hours or more, were there characteristic differences between the ten individuals who experienced the greatest benefit when compared to the ten who showed the least benefit?

Characteristics examined include:

- a. age,
- b. number of diagnoses,
- c. incidence of childhood abuse,
- d. intake combat exposure level,
- e. intake depression,
- f. intake self-esteem,
- g. intake PTSD symptoms, and
- h. intake social well-being.

### **Data Analysis**

Descriptive statistics were calculated for each of the research variables. Prior to the data analysis relevant to the research questions, Pearson product-moment correlations were calculated with all subjects between a composite improvement score (an overall value of positive change in the psychometric

scores), and demographic variables. The improvement score also was correlated with the dependent variables. These preliminary analyses were conducted to identify any confounding variables that might influence the analysis of the research questions. Confounds identified were then considered covariates when utilizing repeated measures multiple analysis of covariance (MANCOVA) statistics.

#### Question One

Pearson product-moment correlations were calculated between Project Care hours and each of the demographic and dependent variables. In evaluating the correlations, the direction of association, strength, and overall significance were considered.

#### Question Two

Because of the within group nature of the pre- and post-test data, the multiple related dependent measures used in the between groups analyses, and the possible confounding covariates, a repeated measures multiple analysis of covariance (MANCOVA) was utilized. The MANCOVAs were calculated to determine statistical significance in each identified dependent variable (depression, low self esteem, PTSD symptoms, social isolation). When significance was found for a variable using the combined measures, a follow-up repeated measures analysis of covariance, ANCOVA, was utilized with each individual measure. To control for experiment-wise error, all significant univariate tests were subjected to Scheffe's post hoc test.



### Question Three

The treatment group was analyzed to determine the ten subjects who achieved the most positive change and the ten subjects who achieved the least positive change by calculating the level of benefit based on their change in psychometric scores. *t*-tests were then utilized to identify any significant differences between the high and low benefit subjects.

## CHAPTER 4

### DATA AND RESULTS

#### Introduction

The data and results are presented as descriptive and inferential analyses of the sample's characteristics, answers to the research questions, and summary.

#### Subjects

The subjects were eighty-four male Vietnam veterans who had received treatment as inpatients at the National Center for Post-traumatic Stress Disorder between February, 1991 and August, 1992. Though complete data were unavailable for analysis, the patients were referred from many geographic regions of the United States and represented several ethnic groups: Hispanic, African-American, Native American Indian, and Caucasian. Among the 414 patients treated at the NC-PTSD during the research period, 43 participated in Project Care at least twenty hours, 212 volunteered at least one time, and 202 never participated. However, only 161 patients met the criteria for this study (39%). Of those who qualified, twenty eight had accumulated at least 20 volunteer hours (65%), 59 had participated 1 - 19 hours (35%), and 74 had never volunteered (37%). Random selection was utilized to identify 28 subjects for both the partial treatment and the control groups.

Pertinent descriptive information such as age, number of diagnoses on Axis I and Axis II, incidence of childhood abuse, intensity of combat exposure, number of weeks in treatment at NC-PTSD, and number of volunteer hours was culled from the Basic Admissions Data Questionnaire, the Psychological Summary, the Combat Exposure Scale, the IRMS Report, and the Project Care

Tally Sheet. The means and standard deviations for the three groups are outlined in Table 1.

### Age

The patients ranged in age from 38 to 49 years. A one-way ANOVA determined that the mean age of the treatment group was significantly different from the partial treatment group ( $p = .05$ ). However, since age did not correlate with either volunteer hours, or overall psychometric improvement, nor was the partial treatment group specifically evaluated in the efficacy analysis, it was not deemed necessary to include age as a covariate in the MANCOVA analyses for question two.

### Diagnosis

All subjects were diagnosed with Post-traumatic Stress Disorder. Of the 84 subjects, 83 had additional diagnoses on Axis I. Four patients in the treatment group, three patients in the partial treatment group, and three patients in the control group also had a diagnosis on Axis II. Significant differences between the groups were not noted on these variables.

Table 1

**Patient Characteristics with Means and Standard Deviations**

		Treatment <u>n</u> = 28	Partial Treatment <u>n</u> = 28	Control <u>n</u> = 28
Age	Mean ( $\pm$ SD )	44.75 (2.34)	42.39 (2.71)	43.48 (2.80)
Axis I	Mean ( $\pm$ SD )	4.86 (1.80)	5.74 (2.14)	5.03 (2.35)
Axis II	Mean ( $\pm$ SD )	.14 (.45)	.11 (.32)	.10 (.31)
Sexual Abuse	Mean ( $\pm$ SD )	.16 (.37)	.28 (.46)	.11 (.31)
Physical Abuse	Mean ( $\pm$ SD )	.24 (.44)	.36 (.49)	.32 (.48)
Emotional Abuse	Mean ( $\pm$ SD )	.48 (.51)	.56 (.51)	.39 (.50)
Combat Exposure	Mean ( $\pm$ SD )	28.07 (9.06)	24.85 (9.52)	26.10 (9.32)
Weeks of PTSD Treatment	Mean ( $\pm$ SD )	20.82 (5.64)	17.32 (4.71)	13.83 (5.68)
Volunteer Hours	Mean ( $\pm$ SD )	42.79 (26.18)	10.00 (6.29)	0.00

### Childhood Abuse

Three categories of abuse were identified: sexual, physical, and emotional. Data were not available for all patients involved in the study. In the treatment group, 25 patients responded to all three questions. Four (or 16%) of the respondents reported sexual abuse, 6 (24%) physical abuse, and 12 (48%) emotional abuse. In the partial treatment group, 6 of 22 respondents (28%) reported sexual abuse, 7 of 20 (36%) physical abuse, and 12 of 22 (56%) emotional abuse. In the control group, 28 patients responded to all three questions. Three (or 11%) reported sexual abuse, 9 (32%) physical abuse, and 11 (39%) emotional abuse. Significant differences between the groups were not noted for these variables.

### Combat Exposure

All three groups demonstrated mean combat exposure scales in the "moderate to heavy" range. However, the treatment group yielded 11 (41%) patients who fell into the "heavy" exposure range, the partial treatment group had 4 (15%) patients in the heavy exposure range, and the control group had 9 (31%) patients in the heavy range. Based on the mean values, a significant difference between the groups was not noted for this variable.

### Length of Stay

The difference in the mean values for number of weeks in PTSD treatment between the treatment group (20.82) and the control group (13.83) was significantly different ( $p < .05$ ) according to a one-way ANOVA. Since the length of stay was also correlated with participation in volunteer activities, it was considered a covariate when calculating the MANCOVA's in question two.

### Volunteer Hours

A one-way ANOVA determined that the number of volunteer hours in Project Care was significantly different ( $p < .05$ ) between the treatment group (42.79) and the partial treatment group (10.00). Significance ( $p < .05$ ) also was reached between the treatment group (42.79) and the control group (0.00).

### Depression

Measures of depression included the MMPI-2 Clinical Depression Scale (D), the MMPI-2 Content Depression Scale (DEP), and the Beck Depression Inventory (BDI). Table 2 demonstrates that the treatment group was most symptomatic on each scale at pretest and also showed the greatest improvement. These differences did not reach statistical significance. Figure 1 graphically compares the three groups' percent improvement on each measure.

### PTSD Symptoms

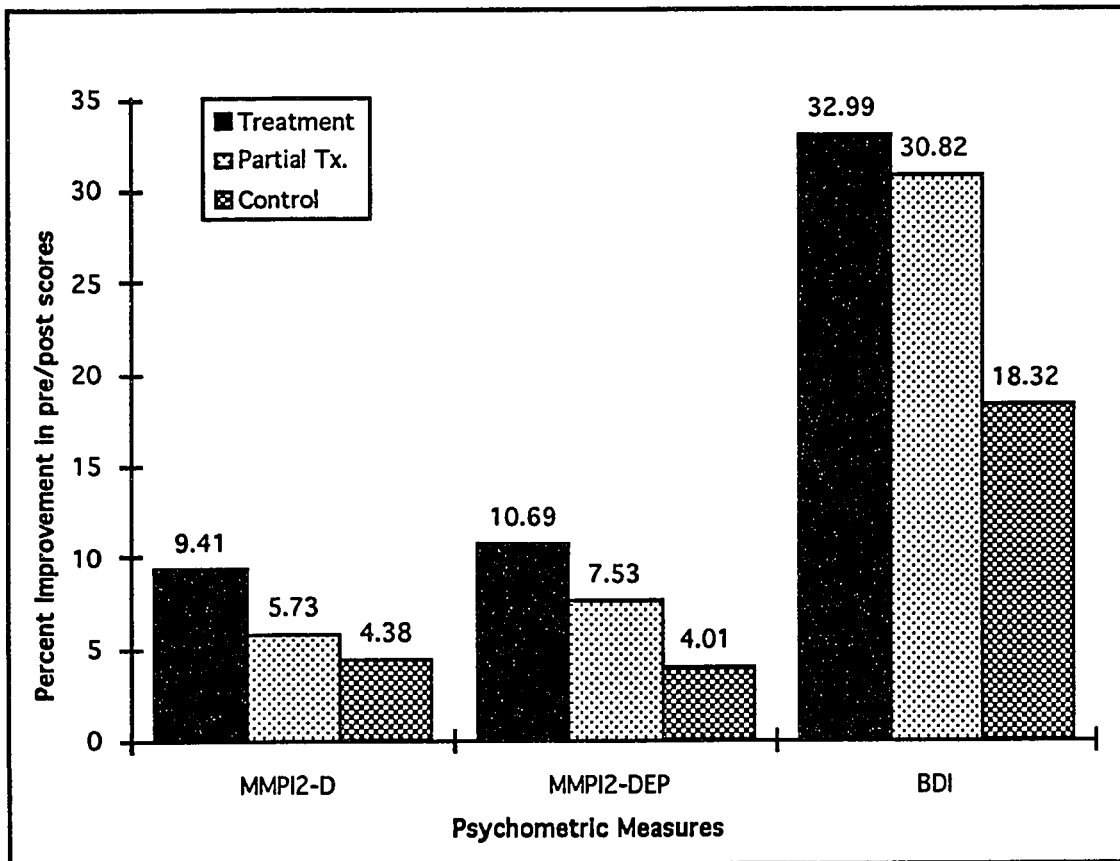
Measures of PTSD symptoms included the MMPI-2 PTSD Subscale (PK), and the Mississippi Combat Related PTSD Scale. Table 3 indicates that the treatment group was the most symptomatic group on the Mississippi Scale but not on the MMPI-2 subscale. The greatest improvement was demonstrated by the treatment group on both scales; however, these differences did not reach statistical significance. Figure 2 graphically compares the percent improvement for the three groups on each measure.

Table 2

**Means and Standard Deviations for Depression Indices**

Psychometric Measure	Treatment $\underline{n} = 28$	Partial Treatment $\underline{n} = 28$	Control $\underline{n} = 28$
<b>Clinical Depression</b>			
pretest	86.50	80.96	84.93
posttest	78.36	76.32	81.21
change	8.14	4.64	3.72
( $\pm SD$ )	(14.72)	(8.85)	(12.24)
<b>Content Depression</b>			
pretest	86.82	86.32	82.62
posttest	77.54	79.82	79.31
change	9.28	6.50	3.31
( $\pm SD$ )	10.69	11.20	4.01
<b>Beck Depression</b>			
pretest	29.07	28.52	28.55
posttest	19.48	19.73	23.32
change	9.59	8.79	5.23
( $\pm SD$ )	(10.44)	(12.10)	(8.86)

**Figure 1. Percent Improvement on Depression Indices**

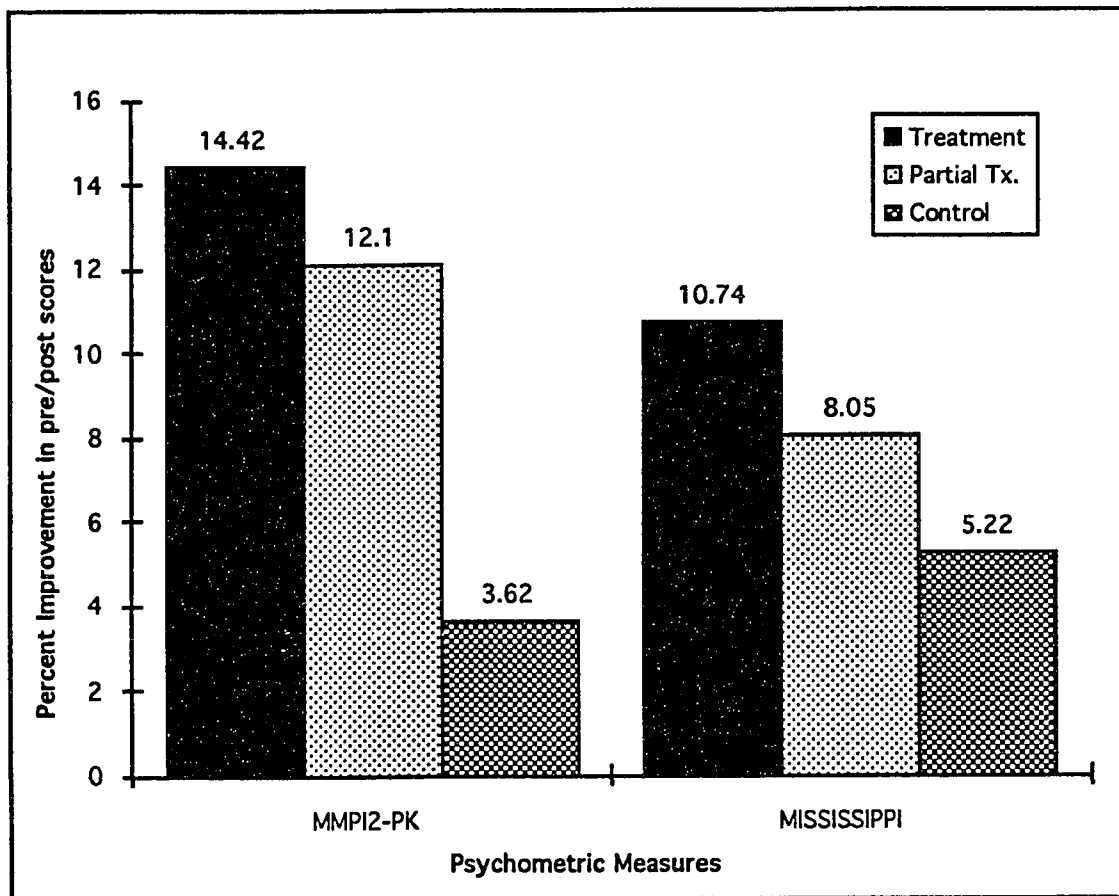




**Table 3****Means and Standard Deviations on PTSD Indices**

Psychometric Measure	Treatment <u>n</u> = 28	Partial Treatment <u>n</u> = 28	Control <u>n</u> = 28
<b>MMPI-2: PK</b>			
pretest	34.68	36.61	33.45
posttest	29.68	32.18	32.24
change	5.00	4.43	1.21
( $\pm$ SD)	(8.46)	(8.32)	(9.42)
<b>Mississippi PTSD</b>			
pretest	129.00	127.74	127.28
posttest	115.15	117.46	120.64
change	13.85	10.28	6.64
( $\pm$ SD)	(18.98)	(18.91)	(18.76)

**Figure 2. Percent Improvement on PTSD Indices**



### Social Well-Being

Measures of social well-being included the MMPI-2 Social Introversion Clinical Scale (SI), the MMPI-2 Social Responsibility Content Scale (Re), and the MMPI-2 Social Discomfort Content Scale (SOD). Table 4 indicates that the treatment group was most symptomatic on Social Introversion and least symptomatic on Social Responsibility at pretest but demonstrated the greatest improvement on two of the three scales. These differences did not reach statistical significance. Figure 3 graphically compares the percent improvement for the three groups on each measure.

Social Responsibility is a positive attribute, the only positive scale used in this study; therefore, improvement is represented by an increase between the pre-/posttest scores (a negative change value). The treatment group was the least symptomatic on this measure in the pretest but did not show an improvement upon posttest.

### Self-Esteem

The MMPI-2 Low Self Esteem Content Scale (LSE) was employed as a measure of self-esteem. Table 5 indicates that the treatment group was most symptomatic but also demonstrated the greatest improvement; however, these differences did not reach statistical significance. Figure 4 graphically compares the percent improvement for the three groups on the measure.

Table 4

**Means and Standard Deviations for Social Well-Being Indices**

Psychometric Measure	Treatment <u>n</u> = 28	Partial Treatment <u>n</u> = 28	Control <u>n</u> = 28
<b>Social Introversion</b>			
pretest	73.61	72.61	71.55
posttest	70.25	71.32	72.00
change	3.36	1.29	-.45
( $\pm$ SD)	(10.21)	(8.47)	(10.16)
<b>Social Responsibility</b>			
pretest	37.54	35.36	37.17
posttest	37.32	36.29	37.62
change	.22	-.93	-.45
( $\pm$ SD)	(5.24)	(8.37)	(6.38)
<b>Social Discomfort</b>			
pretest	74.61	75.25	74.34
posttest	70.14	73.39	73.52
change	4.47	1.86	.82
( $\pm$ SD)	(11.86)	(12.44)	(11.77)

**Figure 3. Percent Improvement on Social Well-Being Indices**

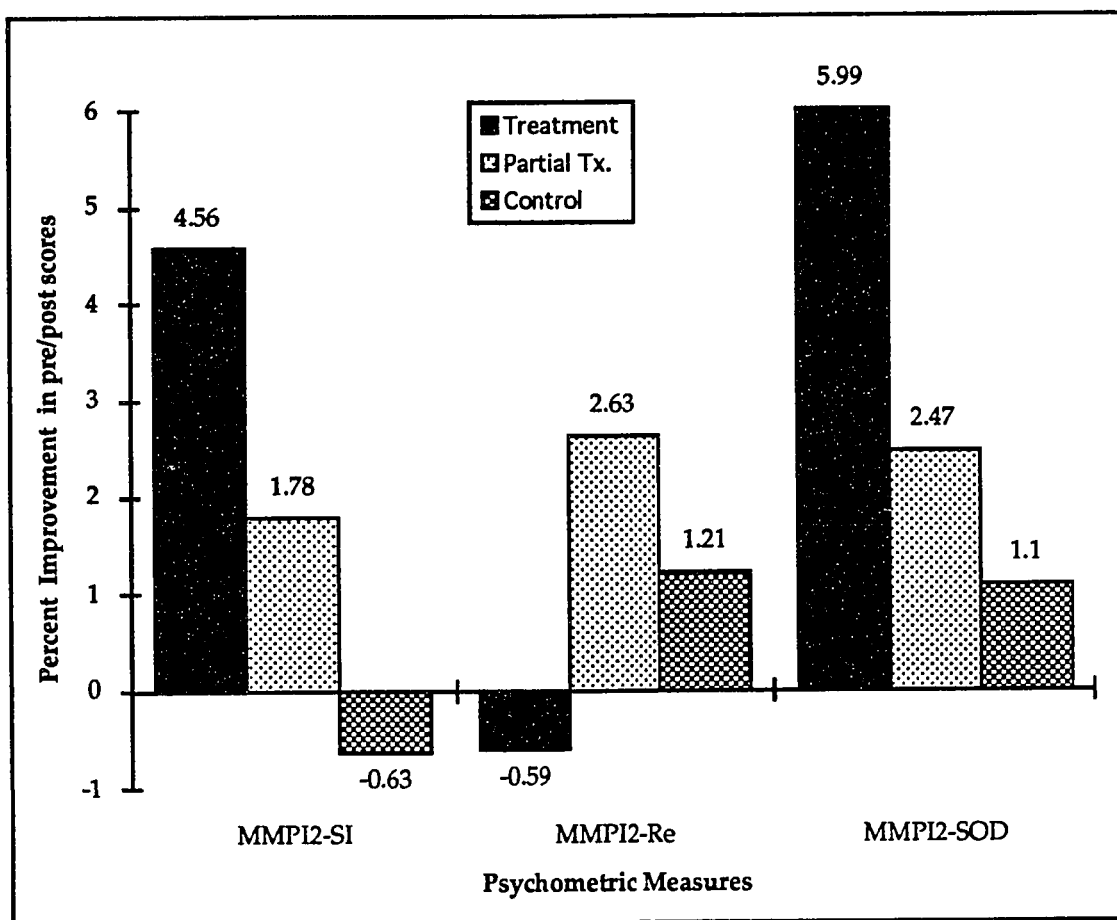
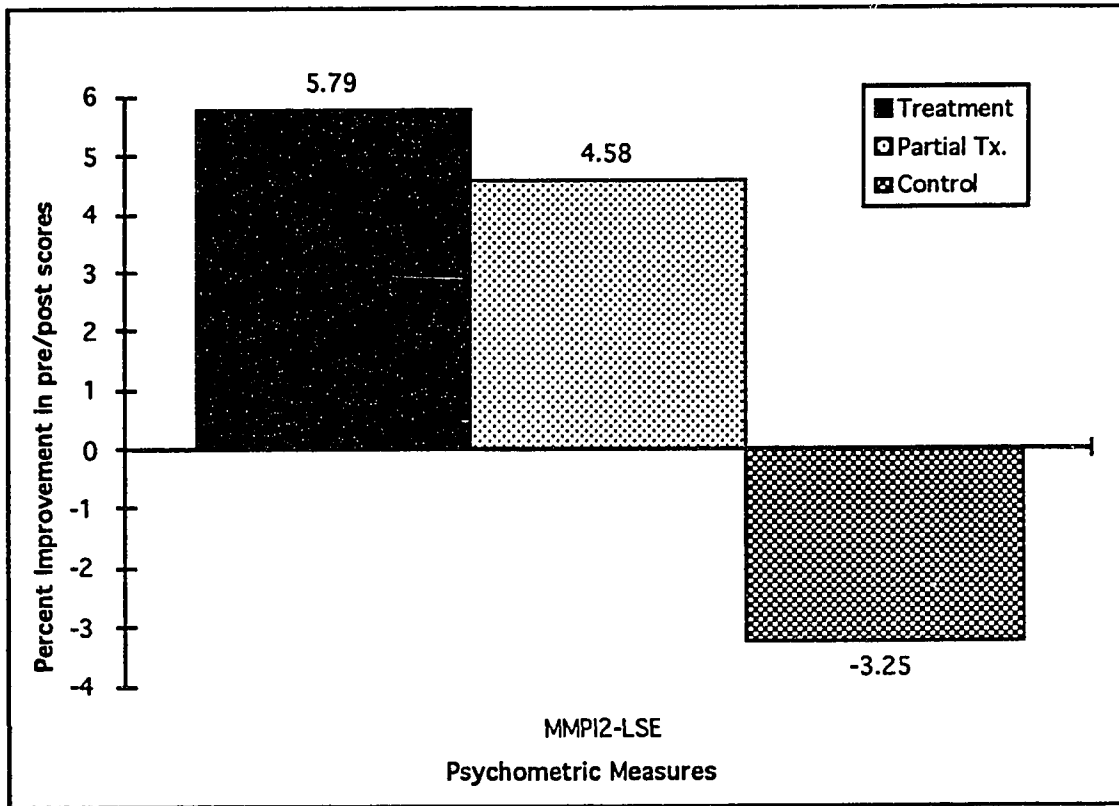


Table 5

**Means and Standard Deviation for the Self-Esteem Index**

Psychometric Measure	Treatment <u>n</u> = 28	Partial Treatment <u>n</u> = 28	Control <u>n</u> = 28
Low Self Esteem			
pretest	75.36	74.71	68.90
posttest	71.00	71.29	71.14
change	4.36	3.42	-3.25
(± SD )	(15.56)	(12.54)	(13.78)

**Figure 4. Percent Improvement on Self-Esteem Index**



### Research Findings

Prior to the data analysis relevant to the research questions, Pearson product-moment correlations were calculated for all subjects between a composite improvement score (an overall value of positive change in the psychometric scores) and demographic variables . Additionally, the improvement score was correlated with the dependent variables. These preliminary analyses were conducted to identify any confounds that might influence the analysis of the research questions (see column 1, Table 6). Since the pretest score on low self-esteem significantly correlated with overall improvement on psychometric scores ( $p < .01$ ), it was utilized as a covariate in the analysis of question two.



Table 6

**Correlations of demographic and intake psychometric data with a composite score of improvement, and with volunteer hours (N=84)**

	Improvement in Psychometric Scores	Volunteer Hours
Age	-.0621	.0965
Number of Diagnoses	-.1641	-.1144
Childhood Abuse	.2702	-.0541
Combat Exposure	-.1911	.0842
Beck Depression Inventory	-.0573	.0540
Mississippi Combat PTSD	.0619	.1195
MMPI-2		
Clinical Depression	.0167	.0684
Content Depression	.2522	.1889
PTSD Subscale	.2510	.0727
Social Introversion	.2483	.0466
Social Responsibility	.2439	.0386
Social Discomfort	.1424	-.0389
Low Self-Esteem	.3331*	.1567
Weeks of PTSD Treatment	.0484	.4446**

1-tailed significance: \*  $p < .01$     \*\* $p < .001$

### Question One

The first research question was intended to identify factors influencing the self-selection of treatment. Does a significant correlation exist between amount of time spent in volunteer activities and:

- a. age,
- b. length of inpatient PTSD treatment,
- c. number of diagnoses,
- d. combat exposure level,
- e. incidence of childhood abuse,
- f. intake depression,
- g. intake self-esteem,
- h. intake PTSD symptoms, or
- i. intake social well-being?

Pearson product-moment correlations were calculated between volunteer time and each of the demographic and dependent variables. In evaluating the correlations, the direction of association, its strength, and its overall significance was considered (see column 2, Table 6).

The results indicated that a significant correlation existed between the number of weeks spent in inpatient PTSD treatment and volunteer time ( $p < .001$ ). In order to measure improvement as influenced by Project Care participation, the length of inpatient treatment was considered a confounding variable and used as a covariate in the analysis of question two.

### Question Two

The second question was designed to evaluate the efficacy of volunteer activities as a therapeutic intervention. Do inpatients who engage in a minimum of twenty hours of therapeutic volunteer activities show greater improvement than non-participating inpatients in the following areas:

- a. depression,
- b. self-esteem,
- c. PTSD symptoms, or
- d. social well-being?

Because of the within group pre- and post-test data and the desire for a between groups analysis with possible confounding covariates (pretest low self esteem and weeks of PTSD treatment), a repeated measures multiple analysis of covariance (MANCOVA) was utilized to determine statistical significance in the identified dependent variable: depression, low self esteem, PTSD symptoms, social isolation (see Table 7).

The data failed to show statistically significant improvement by the patients who participated in therapeutic volunteer activities when compared with non-participating inpatients.

Table 7

**MANCOVA evaluations of pre/post change between the treatment and control groups**

	<i>df</i>	<i>F</i>	<i>p</i>
Depression	3, 48	1.18	.328
Self-Esteem	1, 54	1.55	.219
PTSD Symptoms	2, 49	1.62	.208
Social Well-Being	3, 52	1.01	.397

### Question Three

The third question was designed to identify characteristics of patients who were the most responsive to this treatment approach. The focus was on demographic and pretest scores in an attempt to discover possible referral criteria.

Among veterans who volunteered twenty hours or more, were there characteristic differences between the ten individuals who experienced the greatest benefit when compared to the ten who showed the least benefit?

Characteristics examined included:

- a. age,
- b. number of diagnoses,
- c. incidence of childhood abuse,
- d. intake combat exposure level,
- e. intake depression,
- f. intake self-esteem,
- g. intake PTSD symptoms, and
- h. intake social well-being.

Table 8 lists the mean values for each variable and the *t* -test values that were utilized in this analysis.

Significant findings were that the most improved patients had fewer diagnoses on Axis I ( $p = .03$ ) and reported experiencing more types of childhood abuse ( $p = .04$ ).

Table 8

**Mean demographic values and psychometric scores between the most and least improved treatment subjects.**

	Most Improved	Least Improved	<i>t</i> -test <i>p</i> =
Age	44.50	44.10	.690
Number of Diagnoses	4.60	6.20	.079
Axis I	4.30	6.10	.030*
Axis II	.30	.10	.443
Childhood Abuse	1.50	.44	.040*
Combat Exposure	29.30	28.00	.773
Beck Depression Inventory	28.60	30.90	.646
Mississippi Combat PTSD	129.40	132.00	.632
MMPI-2			
Clinical Depression	87.50	85.30	.626
Content Depression	88.20	86.20	.615
PTSD Subscale	35.70	34.60	.711
Social Introversion	74.90	71.30	.279
Social Responsibility	83.00	82.50	.874
Social Discomfort	73.30	76.70	.476
Low Self-Esteem	81.20	69.70	.054

\* 2-tailed probability; significance reached at  $p \leq .05$

## Results

Several findings provided useful information. First, the treatment group consistently demonstrated greater, albeit non-statistically significant, improvement on all measures except the Social Responsibility Scale (Figures 1 - 4). The treatment group tended to have the most symptomatic pretest scores but also tended to have the least symptomatic posttest scores (excluding Clinical Depression, and Social Responsibility).

Second, Pearson product-moment correlational analyses identified two possible confounding variables. Low self-esteem on the pretest was significantly correlated ( $p < .01$ ) with overall improvement on the psychometric scores, and the number of weeks in PTSD treatment was significantly correlated ( $p < .001$ ) with volunteer hours (Table 6).

Third, statistically significant results regarding treatment efficacy were not obtained by a comparison of the treatment and control groups' changes in pre- and post-test scores in depression, PTSD symptoms, social well-being and self-esteem (Table 7). Differences between the groups' mean scores were relatively small and standard deviations were high, hindering the attainment of statistically significant results (Tables 2 - 5).

Finally, fewer diagnoses on Axis I ( $p = .03$ ) and the report of more types of childhood abuse ( $p = .04$ ) were significant factors in predicting which patients were most responsive to the therapeutic volunteer activity of Project Care (Table 8).

## CHAPTER 5

### DISCUSSION, IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSION

#### Introduction

The first section of this chapter discusses the results for each of the research questions. The second section addresses the professional implications of the study including recommendations for further research. This section ends with the conclusions of the study.

#### Discussion of Research Questions

##### Variables Influencing Self-selection

This study explored several variables which may have influenced the Vietnam veteran patient's decision to volunteer in Project Care. Age was statistically different between the treatment and partial treatment groups; however, since age was not positively correlated with volunteer time, nor with improvement in the psychometric scores, it was not considered a confounding variable. The only clearly contributing factor to volunteer participation was the amount of time spent in PTSD treatment. The longer the patient was in the NC-PTSD program, the more likely he was to spend time in volunteer work.

##### Treatment Efficacy of Therapeutic Volunteer Activities

A comparison of the treatment group patients who spent at least 20 hours volunteering during their inpatient stay and the control group patients who never volunteered did not reveal statistically significant differences in depression, self-esteem, PTSD symptoms, or social well-being scores. However, nine measures were utilized for this analysis and the treatment group means



showed greater improvement on eight of the measures. The standard deviations often were greater than the actual amount of change, which indicated great variability within the groups. Without a cohesive sample, the group sizes were too small to demonstrate significance using MANCOVAs. As a follow-up, correlational analyses were conducted and a positive correlation was noted between Project Care hours and improvement in clinical depression scores ( $p < .01$ ). Another drawback to the study was the relatively short period of time spent in treatment (5 - 31 weeks). Patients were told during treatment that they must commit to at least two years of ongoing outpatient treatment and/or support groups to significantly change their behavior patterns. While clinical value seems apparent, this study may have attempted to demonstrate change in too short of a time span to manifest statistically significant changes.

#### Predictors of Positive Treatment Response

In an effort to identify those patients who would most benefit from participation in a volunteer program, intake information was evaluated between treatment group patients whose psychometric scores greatly improved with treatment group patients who did not show much improvement or actually scored more symptomatic at exit testing. One significant finding was a difference in the number of Axis I diagnoses ( $p = .02$ ). The most improved group showed a mean of 4.3 diagnoses while the least improved group showed a mean of 6.1. This difference may reflect a greater preponderance of polysubstance abuse in the least improved group. The first diagnoses were most frequently PTSD, Major Depression, and Alcohol Abuse. With polysubstance abuse, each drug was identified as a separate diagnosis resulting in a high number of Axis I diagnoses.

Childhood abuse also reached significance ( $p = .04$ ), with those who identified more categories of abuse demonstrating greater responsiveness to treatment. Several veterans from abusive backgrounds have commented on the pleasure of developing a positive relationship with an individual of their parent's age.

#### Other Findings

It appeared that those most involved in Project Care may have been more committed to their treatment in general as evidenced by the treatment group's 65% success rate in meeting the research criteria: (a) completed both intake and exit psychological testing, (b) was a Vietnam veteran, (c) was diagnosed with PTSD, and (d) if a Project Care participant, did so on a voluntary basis. The most frequent cause for exclusion from the study was a result of the patient's failure to complete exit psychological testing. Therefore, it might be that those most dedicated to the treatment process participated in all of the programs available and followed-through with their commitment to participate in exit testing.

The treatment group also appeared to be the most symptomatic on their pretest scores which may have resulted in greater room for improvement on their psychometric scores.

#### **Professional Implications**

##### Volunteer Service as Effective Intervention

This study indicated that participation in volunteer service positively influenced psychological and social functioning: depression, self-esteem, PTSD symptoms, and overall social well-being. Previous studies have shown that personal relationships with others can "significantly reduce the incidence of depression" (Pacificon, 1981, p. 4). Project Care succeeded in facilitating

relationships, in part, because of the common bond the patients shared as veterans. The Vietnam veterans appeared to be less fearful of rejection and criticism from these older veterans who understood that they were doing their job in Vietnam. The topic of military service provided copious conversational material during which time the PTSD patients practiced new communication skills and also learned to appropriately express emotions. With their understanding and supportive elder veteran friends, the PTSD patients often expressed their anger and hurt and discovered that the NHCU residents had painful war memories as well. However, it should be noted that some patients did not participate in Project Care because they felt uncomfortable with the geriatric population. Therefore, initiating programs with which the patients feel comfortable may be extremely important to providing an environment in which intrinsic motivation encourages the patients' participation.

The altruistic nature of the program was valuable because the Vietnam veterans had the opportunity to help individuals less functional than themselves. Patients with PTSD often exhibit learned helplessness behavior, but when they were engaged in tasks such as scooping and serving ice cream at a banana split social, they realized that they were more physically capable than their NHCU friends. Furthermore, the consistent appreciation they experienced encouraged them to reevaluate their self-image and realize they were being accepted as valuable human beings. As Coopersmith (1967) concluded, preventing low self-esteem requires self-initiated participation in activities that provide the individual with feelings of control, adequacy, and competence.

### Volunteer Service as a Holistic Intervention

Although this study focused on the Occupational Performance components of psychological and social functioning, it is important to note the holistic nature of the intervention. Sensory-integrative, and motor components were not emphasized but the activities did require sensory and motor functioning. Activities were, when necessary, adapted to the physical abilities of patients from both units.

Growth and development were facilitated in the cognitive component through incorporating time-management and problem-solving skills. Patients were responsible for attending all PTSD treatment groups and signing up for Project Care activities in their free time. However, the patients also had to consider their need for homework time, and learn to reserve unscheduled time for relaxation. Therapists throughout the PTSD program reminded patients to keep their time balanced. Problem-solving skills were enhanced partially because of the fact that many of the smaller Project Care activities were unsupervised, such as the Bedside Buddy interactions. Therefore, the PTSD patients occasionally encountered difficulties that required problem-solving. A small task such as maneuvering a wheelchair through a difficult doorway, was challenging for some PTSD patients. Frequently, the NHCU resident would help the PTSD patient problem-solve the situation and through these successful interactions the PTSD patient developed confidence and become more willing to accept a new task.

Therapists noted improvement in the PTSD patients functioning in the Occupational Performance Areas as well. Patients participating in Project Care often paid more attention to their cleanliness and appearance when visiting the

NHCU residents. The self-care component is basic to job readiness and the patients also learned to sign in and out when they were engaged in Project Care. The importance of following through on commitments was emphasized with reinforcement provided by the patients themselves. When someone signed up to help with an activity but did not attend, his fellow patients firmly reminded him of his responsibilities. The volunteer service also provided patients with the opportunity for exploring a possible career option. More than one patient became involved in geriatric care following discharge from the PTSD program. Though the patients' tasks were frequently structured and assigned, the activities were always leisure oriented. In this manner, PTSD patients were reintroduced to the world of humor and playfulness, which many had forsaken. Therapists reinforced exploring many recreational options that were drug-free and sober alternatives to their previous lifestyle.

This study reinforced the belief that a structured occupational therapy program that provides volunteer activities can facilitate the veteran's growth in the development of foundational skills necessary for role acquisition: self-care, work, and leisure skills, which are believed to be built upon sensory, motor, cognitive, social, and psychological skills. Volunteer service activities may provide the patient with an interest that can be pursued following discharge. If the individual is unemployed or on disability compensation, it is an inexpensive way to structure time, explore vocational options, and practice appropriate work behaviors.

## **Recommendations**

### **Research Regarding the Occupational Performance Hierarchy**

Volunteer service provides an environment in which to study the accuracy of the Occupational Performance hierarchy. Both quantitative and qualitative measures should be utilized. In this research with PTSD patients, the therapists and patients involved perceived dramatic changes, while the quantitative measures did not reveal statistical significance. With a multidimensional longitudinal model, research could measure the effectiveness of volunteer activities on functioning in the individual components of sensory, motor, cognitive, social, and psychological skills. Then the study could compare the changes in the components with change in functioning in the Occupational Performance areas of self-care, work, leisure, and rest. A follow-up qualitative study focusing on role development would be valuable.

For a comprehensive quantitative study to be conducted using the Occupational Performance areas and components, standardized measures need to be used that assess the individual's functional levels.

### **Quantitative Efficacy Study**

One relatively simple quantitative study that could be conducted to measure the effectiveness of volunteer service would involve agencies that already promote volunteerism among their psychiatric patients (e.g. some San Francisco Bay Area County Mental Health Agencies). It would be of interest to determine whether a correlation exists between the number of days the patients are hospitalized and the amount of time spent in volunteer activities.

### Qualitative Studies

Several qualitative studies suggest themselves. For example, how influential is intrinsic motivation. Very little has been written about the topic although occupational therapists believe that it is perhaps the most important influence on activity participation. Florey (1969) and Teitelman (1982) have addressed the concept but more research is necessary.

Another qualitative study could focus on how altruism affects self-image. Other than Coopersmith's (1967) conclusions on the preventative measures for low self-esteem, supportive research was not found. However, the comments the patients most frequently made regarding Project Care included their improved self-esteem and how it made them feel good to be able to help someone else. They perceived their lives to be in shambles and they valued the ability to help others.

Finally, the unexpected finding in question three regarding the most improved patients reporting more categories of child abuse suggests developing a qualitative study to explore the value of intergenerational volunteer service among abused individuals. Many veterans reported satisfaction in "getting a second chance to play it out right."

### **Conclusion**

In conclusion, Vietnam veteran inpatients at the National Center for Post Traumatic Stress Disorder have the opportunity to participate in volunteer activities. These activities are structured to facilitate the implementation of newly learned social and emotional coping skills. The results indicated that (a) participation in the volunteer program was correlated with the length of inpatient PTSD treatment ( $p < .001$ ); (b) the treatment group consistently

demonstrated greater gains than the control group on measures of depression, PTSD symptoms, social well-being, and self-esteem, but did not reach statistical significance; and (c) intake information suggested that individuals with fewer diagnoses on Axis I ( $p = .03$ ), and those reporting more types of childhood abuse ( $p = .04$ ), responded best to this type of intervention.



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APPENDIX A

BASIC ADMISSION DATA QUESTIONNAIRE

**BASIC ADMISSION DATA QUESTIONNAIRE**  
 National Center for Post-traumatic Stress Disorder  
 Palo Alto VAMC  
 (In the public domain.)

The following questions pertinent to this research were excerpted from the Basic Admission Data Questionnaire:

42. War theater: Indicate below the war zone in which you served, by placing a checkmark to the right of the appropriate war zone/era:
- |                  |                         |
|------------------|-------------------------|
| a. Vietnam _____ | e. Panama _____         |
| b. Korea _____   | f. Southwest Asia _____ |
| c. WW II _____   | g. Other: _____         |
| d. Grenada _____ |                         |
66. While growing up, did you receive excessive punishment (punishment that resulted in bruises, bleeding, burns, broken bones, etc.) by your mother, father, or other primary caretaker(s)?      YES    NO
67. While growing up, were you often ridiculed, shouted at, criticized or otherwise emotionally abused by your mother, father, or other primary caretaker(s)?      YES    NO
68. While growing up, were you ever sexually abused or sexually molested? If YES who was the abuser (e.g., uncle, father) and between what ages were you when you were abused?      YES    NO

**APPENDIX B**

**COMBAT EXPOSURE SCALE**



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pages 74-75, 77, 79-80

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APPENDIX C

BECK DEPRESSION INVENTORY

APPENDIX D

MINNESOTA MULTIPHASIC PERSONALITY INVENTORY - 2

APPENDIX E

PSYCHOLOGICAL ASSESSMENT SUMMARY

SUMMARY OF PSYCHOLOGICAL ASSESSMENT DATA  
National Center for Post-traumatic Stress Disorder  
Palo Alto VA Medical Center

Patient Name: Kermit Fraug (Non-existing person)  
SSN: 312-24-0134  
Subject ID: 999  
Report Date: 7/21/91

Kermit Fraug is a 42 year-old separated black/African American Vietnam era Army combat veteran referred by Mary Smith, San Francisco VAMC for inpatient treatment of war-related stress. The patient is 30% service connected for PTSD, shrapnel wounds. Chief presenting complaints included depression, anger, suicidal thoughts, alcohol problems, and relationship problems. As part of the admission process, the patient was given a broad-based psychological assessment involving a mental status examination, diagnostic interviews, and psychometric testing.

The following narrative is a summary of the findings from this assessment, and is presented in the present form for clarity and to maximize its utility for staff of the National Center for PTSD's Clinical Laboratory. The narrative format is employed in an attempt to best present the assessment findings. This summary is not intended to take the place of a thorough and interpretive psychological assessment which includes an idiographic, dynamic formulation of the patient's problems along with detailed treatment recommendations. The findings reported here should be considered only in combination with actual behavioral or clinical observations of the patient.

## ASSESSMENT RESULTS

### A. MENTAL STATUS

Patient appears older than his stated age and was casually clad throughout the evaluation process. The patient's affect was somewhat flat. When discussing traumatic events, the patient became very distressed, anxious, and tearful. During the assessment, the patient was coherent but showed evidence of some delusions of persecution. His thoughts were well developed in form and content. The patient reports auditory hallucinations which are related to combat events.

The patient's scores on the Neurobehavioral Cognitive Status Exam reveal the following: The patient was lethargic in level of consciousness during testing. His orientation as to time and place was in the normal range. Regarding the patient's language abilities, language comprehension was mildly impaired, repetition was mildly impaired, and ability to name everyday objects was mildly impaired.

The patient's constructional ability was in the normal range. The patient's short term memory was normal when asked to recall four words presented earlier during the assessment. The patient displayed a mildly impaired ability to perform simple mental arithmetic. The patient's abstraction abilities were normal, and social judgement was intact.

## B. INTERVIEW

### Structured Interviews:

Structured Clinical Interview for (DSM-III-R) Diagnosis (SCID)  
(selected parts)  
Clinician Administered PTSD Scale - Form 1 (CAPS-1)

SCID interview data suggest that the patient meets diagnostic criteria for the following DSM-III-R diagnoses: Major depression, recurrent, severe, without psychotic features; Panic disorder, without agoraphobia, moderate panic attacks; Social Phobia; Alcohol dependence, in partial remission; Amphetamine dependence, in full remission; Cannabis abuse, moderate; Adult antisocial behavior.

CAPS-1 interview data are consistent with DSM-III-R diagnosis of PTSD. PTSD diagnostic criteria which the patient meets include: (A) exposure to a recognizable stressor as noted above by combat history and traumatic events. (B) re experiencing of the trauma through intrusive thoughts, dissociative flashback experiences, and nightmares. (C) numbing of responsiveness and avoidance of stimuli associated with the trauma, as evidenced by avoidance of thoughts and feelings which are reminders of the trauma, avoidance of activities or situations which are reminders of the trauma, diminished interest in activities, feelings of estrangement from others, and a restricted range of affect. (D) hyperarousal, as evidenced by sleep disturbance, irritability and anger outbursts, impaired concentration, hypervigilance, exaggerated startle response, and physiologic reactivity to cues associated with the trauma. Associated features reported include: survivor guilt, hopelessness, memory impairment, sadness and depression, and feeling overwhelmed.

### C. PSYCHOMETRIC TESTING

#### Instruments:

Mississippi Scale for  
Combat-related PTSD  
Combat Exposure Scale

Beck Depression Inventory  
Beck Anxiety Inventory  
MMPI-2

Results from the patient's Minnesota Multiphasic Personality Inventory - 2 (MMPI-2) yielded a (8-7-2) three point code profile. This configuration has some similarities to the modal 2-8/8-2 profile of other veterans with PTSD. The high reporting in evidence across all subscales makes it extremely difficult to differentiate problem areas and casts serious questions about the validity of the results obtained. However, it is important to note that high or over-reporting is not uncommon in persons who are seeking help for trauma-related problems and may be an indication of pervasive or extreme psychological disturbance or both, and may thus reflect a cry for help rather than factitiousness or malingering. Therefore, this patient's high reporting does not rule out a provisional diagnosis of trauma related disorder, such as PTSD. The validity scales from this patient's MMPI indicate that this is a valid profile.

The patient's score on the PTSD scale of the MMPI was 40; eighty two percent of combat veteran PTSD norm sample scored 30 or greater on this scale.

The patient's score on the Mississippi PTSD Scale suggests significant PTSD symptomatology. His score on the Combat Exposure scale falls in the heavy range.

The patient's scores on the Beck Anxiety Inventory suggests a moderate level of anxiety. His score on the Beck Depression Inventory, is suggestive of a moderate level of depression.

The patient was very anxious during oral testing. As the interview progressed he became less anxious but tearful.

**D. DIAGNOSTIC IMPRESSIONS:****AXIS I:**

309.89 Post-traumatic Stress Disorder  
296.33 Major depression, recurrent, severe, without psychotic features  
300.01 Panic disorder, without agoraphobia, moderate panic attacks  
300.23 Social Phobia  
303.90 Alcohol dependence, in partial remission  
304.40 Amphetamine dependence, in full remission  
305.20 Cannabis abuse, moderate  
V71.01 Adult Antisocial behavior

**AXIS II:**

V71.09 No diagnosis an Axis II

**AXIS III.** Defer to Physician Report

**AXIS IV:** Psychosocial Stressors: increased symptoms, hospitalization  
Severity: Severe - (Acute Event)

**AXIS V:** Current GAF: 40  
Highest GAF past year: 40

---

Morgan Grouch, Ph.D.  
Clinical Psychologist  
National Center for PTSD - Palo Alto



APPENDIX F

INFORMATION RESOURCE MANAGEMENT SERVICES REPORT

**Palo Alto VA Medical Center  
Information Resource Management Services Report**

NAME TRANSACTION	SSN	ADMIT OR TRANSFER IN DATE	DISCH DATE	AGE	WARD
Fraug, Kermit Admission	312-24-0134	06/10/91	10/16/91	42	323D5

(Non-existing person)

APPENDIX G

INTERNAL DISCHARGE DATE RECORD

MONTH:

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

APPENDIX H

THE MISSISSIPPI SCALE

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**APPENDIX I**

**PROJECT CARE SIGN IN SHEET**

PROJECT CARE VOLUNTEER SIGN IN

NAME (PLEASE PRINT)	EVENT/ASSIGNMENT	TIME = HOURS	DATE
Kermit Fraug	Bingo	7:30 - 9 = 1.5	2/16

(Non-existing person)



APPENDIX J

PROJECT CARE TALLY SHEET

**PROJECT CARE TALLY SHEET**

Name	Subject #	Subject #	2/16	2/17	2/19	2/24	3/3	Date # Hours
Frag, Kermit	001	001	1.5	3.5	.5	1	7	

(Non-existing person)

APPENDIX K

DATA FORMAT FOR SPSS STATISTICAL SOFTWARE

### **Data Format for SPSS Statistical Software**

Data were culled from the various collection instruments and entered into a database for SPSS Statistical Software. Each subject had two lines of data organized in the following manner:

**Line one:**

Subject Number (SUBJNO) in columns 1 - 3  
 Age (AGE) in columns 5 - 6  
 Ethnic Group (ETHNIC) in column 8  
 Length of PTSD inpatient stay (LOS) in columns 10 - 11  
 Number of Axis I diagnoses (AXISONE) in columns 13 - 14  
 Number of Axis II diagnoses (AXISTWO) in column 16  
 Combat Exposure Scale (CES) in columns 18 - 19  
 Report of childhood sexual abuse (SEXABUSE) in column 21  
 Report of childhood physical abuse (PHYSABUS) in column 23  
 Report of childhood emotional abuse (EMOTABUS) in column 25  
 Number of Project Care hours (PCHOURS) in columns 27 - 29  
 Pretest MMPI-2 Clinical Depression (D) in columns 31 - 33  
 Pretest MMPI-2 Social Introversion (SI) in columns 35 - 37  
 Pretest MMPI-2 Social Responsibility (RE) in columns 39 - 41  
 Pretest MMPI-2 PTSD Keane Scale (PKRAW) in columns 43 - 45  
 Pretest MMPI-2 Content Depression (DEP) in columns 47 - 49  
 Pretest MMPI-2 Low Self-Esteem (LSE) in columns 51 - 53  
 Pretest MMPI-2 Social Discomfort (SOD) in columns 55 - 57  
 Pretest Mississippi PTSD (MISS) in columns 59 - 61  
 Pretest Beck Depression Inventory (BDI) in columns 63 - 64

**Line two:**

Treatment Group (COND) in column 1  
 1 = treatment; 2 = partial treatment; 3 = control  
 Question 3 Group (condtwo) in column 3  
 1 = least improved; 2 = most improved  
 Posttest MMPI-2 Clinical Depression (D) in columns 31 - 33  
 Posttest MMPI-2 Social Introversion (SI) in columns 35 - 37  
 Posttest MMPI-2 Social Responsibility (RE) in columns 39 - 41  
 Posttest MMPI-2 PTSD Keane Scale (PKRAW) in columns 43 - 45  
 Posttest MMPI-2 Content Depression (DEP) in columns 47 - 49  
 Posttest MMPI-2 Low Self-Esteem (LSE) in columns 51 - 53  
 Posttest MMPI-2 Social Discomfort (SOD) in columns 55 - 57  
 Posttest Mississippi PTSD (MISS) in columns 59 - 61  
 Posttest Beck Depression Inventory (BDI) in columns 63 - 64

### Data Example for SPSS Statistical Software

```
DATA LIST FIXED / SUBJNO 1-3 AGE 5-6 ETHNIC 8 LOS 10-11
AXISONE 13-14 AXISTWO 16 CES 18-19 SEXABUSE 21
PHYSABUS 23 EMOTABUS 25 PCHRS 27-29
D1 31-33 SI 35-37 RE 39-41 PKRAW 43-45 DEP 47-49
LSE 51-53 SOD 55-57 MISS 59-61 BDI 63-64 / COND 1
condtwo 3 D2 31-33 SI2 35-37 RE2 39-41 PKRAW2 43-45
DEP2 47-49 LSE2 51-53 SOD2 55-57 MISS2 59-61 BDI2 63-64.
```

**BEGIN DATA.**

```
004 45 0 16 06 0 17 0 0 1 024 078 073 032 038 090 070 084 118 22
1 078 083 030 032 083 080 084 106 12
011 48 0 13 09 0 35 0 0 0 029 091 078 050 036 083 075 084 131 25
1 1 102 089 039 039 087 083 084 132 23
013 46 0 22 02 0 020 098 089 047 039 097 096 086
1 085 087 047 036 082 093 086 138
015 46 0 26 05 0 37 0 0 0 036 091 075 030 037 092 072 076 129 25
1 076 062 039 032 078 075 052
034 43 0 23 06 0 30 0 0 1 023 081 073 030 043 088 093 073 147 37
1 1 081 080 034 042 090 088 081 148 30
178 45 0 19 05 0 25 027 085 080 039 024 082 080 078 109 30
1 070 071 030 030 085 077 068 095 15
053 44 0 28 08 1 39 0 0 1 022 068 056 034 035 078 064 071 139 31
1 1 081 061 037 033 088 067 073 135 37
059 47 0 26 07 0 29 0 0 0 035 070 064 034 017 068 048 068 116 19
1 1 072 069 032 025 071 053 068 116 19
061 44 0 22 03 0 30 1 1 1 021 100 077 039 040 092 072 084 133 42
1 2 087 072 034 029 085 064 073 116 13
065 40 6 22 06 1 18 0 1 1 073 087 070 032 036 088 077 065 142 30
1 2 080 064 034 023 061 067 055 106 10
066 42 1 29 06 0 37 0 1 1 031 085 073 037 033 099 072 073 130 28
1 093 072 039 038 085 059 084 128 27
067 42 1 30 04 0 32 0 0 0 092 083 068 030 032 083 057 081 120 21
1 1 085 069 030 033 078 053 081 125 24
188 42 0 19 04 0 40 1 1 1 028 089 079 030 039 085 088 086 126 22
1 2 059 042 042 008 055 057 043 086 09
077 46 6 18 03 0 25 0 0 0 039 083 057 050 023 066 035 052 121 20
1 2 076 045 045 009 056 055 035 100 12
193 48 0 19 05 2 12 1 0 1 023 085 078 042 031 082 070 081 109 16
1 2 061 070 047 020 056 055 068 107 13
087 49 0 15 04 0 21 0 0 0 031 085 065 034 029 078 085 054 111 21
1 076 064 037 029 066 075 055 105 12
092 45 0 14 03 0 35 0 0 0 022 091 077 047 028 077 083 065 126 18
1 2 052 065 050 010 055 057 055 068 04
094 45 6 15 05 0 24 0 0 0 049 097 080 030 040 099 098 084 156 46
1 2 061 069 037 028 065 062 063 122 12
196 42 0 19 06 0 35 025 087 078 037 035 083 067 073 122 37
1 1 100 080 034 033 090 083 081 137 35
096 45 3 24 02 0 27 1 1 1 075 074 059 045 025 075 062 050 092 05
1 2 040 044 042 015 059 044 057 062 05
```



# THE PSYCHOLOGICAL CORPORATION

555 ACADEMIC COURT, SAN ANTONIO, TEXAS 78204-2498  
TELEPHONE: (210) 299-1061 TELEX: 5106015629 TPCSAT FAX: (210) 270-0327

May 6, 1993

Ms. Michelle Warren  
1242 Cortez Drive, #1  
Sunnyvale, CA 94086

Dear Ms. Warren:

This letter will serve as formal authorization for the use of two (2) items from the Beck Depression Inventory in the appendix of your thesis entitled "The Effectiveness of Volunteer Service: An Occupational Therapy Intervention for Post-traumatic Stress Disorder".

We understand, of course, that University Microfilms, Inc., may provide your single copies of the thesis to requestors.

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Thank you for your interest. If you have other questions or needs, please contact me.

Sincerely,

Christine Doebbler  
Supervisor  
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## Nature of License

Instrument Minnesota Multiphasic Personality-2 Scoring by hand \_\_\_\_\_ Scoring by machine \_\_\_\_\_  
Reproduction of the following materials Depression Clinical Scale (Questions 175, 188, 233)  
Social Introversion (243, 338, 354) PTSD-Keane (30, 94, 170)  
Social Responsibility (27, 418, 440) Depression Content (306, 377, 546)  
Low Self-Esteem (78, 380, 457) Social Discomfort (158, 262, 281)

Please give scale name or individual test booklet item numbers.

## Nature of Research: Masters Thesis

Investigator Name Michelle D. Warren, O.T.R. Advisor (if investigator is a student):  
Name Dudley D. Blake, Ph.D.  
Affiliation San Jose State University, CA Affiliation Veterans Affairs Medical Center, Palo Alto  
Degree Occupational Therapy Degree Psychology

Brief description of study This archival study assessed volunteer service as an occupational therapy intervention with Vietnam combat veterans (N=84) at the National Center for Post-traumatic Stress Disorder (NC-PTSD). Three groups were defined based on volunteer hours. The research (1) examined variables influencing self-selection, (2) evaluated treatment efficacy by analyzing changes in depression, self-esteem, social skills, and PTSD symptoms, and (3) identified characteristics of patients most responsive to this treatment approach.

Time period May 1992 to April 1993 Site(s) Veterans Affairs Medical Center, Palo Alto  
Subject population Inpatient Vietnam veterans diagnosed with Post-traumatic Stress Disorder and treated at the VAMC, Palo Alto on the NC-PTSD Unit.

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Beverly Kaemmer 5-24-93  
Beverly Kaemmer, Test Manager Date