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Pepperdine University
Graduate School of Education and Psychology

LIVE LONG AND PROSPER: A HEALTH PROMOTION GROUP TREATMENT
FOR REDUCING HEALTH RISK BEHAVIORS IN VETERANS DIAGNOSED WITH
POSTTRAUMATIC STRESS DISORDER: ASSESSMENT STRATEGY

A clinical dissertation submitted in partial satisfaction
of the requirements for the degree of
Doctor of Psychology

by

Marissa Burgoyne

August, 2010

David Foy, Ph.D. – Dissertation Chairperson

This clinical dissertation, written by

Marissa Burgoyne

under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF PSYCHOLOGY

Faculty Committee:

David W. Foy, Ph.D., Chairperson

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DEDICATION

To my wonderful husband Chris, without whose self-sacrifice, support, and incredible patience I would never have been able to fulfill this dream and to the brave military personnel for whom this intervention is created – may you live long and prosper.

ACKNOWLEDGEMENTS

I would like to thank my mother and father for their unwavering belief in my capabilities, respect for my decisions, and support in my life journey. They have provided me with the tools and given me the freedom to discover what fulfills me. I would like to acknowledge the incredible support of my husband, who has sacrificed many of his own dreams over the last six years to help me fulfill mine. Now it's your turn. And, to my wonderful children who have shared this journey with me, thank you for understanding when mommy had to work, sleeping quietly through extended dissertation meetings, and for always being my guiding light. Here's hoping that one of you wants to join my practice someday!

I would like to thank David Foy, Ph.D., my dissertation chair, for his willingness to share his vast knowledge, his insightful suggestions, and his patience with our atypical timeline. He has been a wonderful mentor and I hope our completed intervention makes him proud. I would like to thank Kent Drescher, Ph.D. for providing us with the opportunity to create this manual set and for sharing his multiple areas of expertise with us. I would also like to offer a special thank you to Robert DeMayo, Ph.D. for his kindness, generosity, and warmth since my first day of Clinical Skills four years ago and for his unwavering positive attitude during the dissertation process. Finally, I would like to thank the Vulcan Vixens. This has been a labor of love and the final product reflects all of our strengths. You are both wonderful women and it has been an honor to spend four years with you.

MARISSA BURGONE

EDUCATION

- | | | |
|---|-----------------------|-----------------|
| Current | Pepperdine University | Los Angeles, CA |
| <i>Doctoral Student in Clinical Psychology (Psy.D.)</i> | | |
| <ul style="list-style-type: none"> ▪ Member of Psi Chi (honor society), GPA 4.0 ▪ Anticipated graduation 2011 | | |
| 2006 | Pepperdine University | Los Angeles, CA |
| <i>M.A. in Psychology</i> | | |
| <ul style="list-style-type: none"> ▪ Member of Psi Chi (honor society), GPA 4.0 | | |
| 1994 | Brown University | Providence, RI |
| <i>B.A. in Theatre Arts</i> | | |

CLINICAL EXPERIENCE

- September 2010-Present
- VA Loma Linda Healthcare System Loma Linda, CA
Predoctoral Internship – Brandy Henson, Ph.D., Nancy Farrell, Psy.D./DrPH
- Supervisors
- First Rotation: Trauma Recovery Services
 - Co-facilitate 10 psychoeducational, experiential, MI, or skills-based groups within Trauma Recovery Services including Trauma Education and Coping, Seeking Safety, and Mindfulness
 - Co-facilitate 2 trauma-focused groups based on the PE model.
 - Conduct short-term individual psychotherapy using PE.
 - Attend weekly Trauma Seminar and weekly didactics related to general topics such as Suicide Assessment, Dangerousness, and Military Culture.
 - Attend 2 hours of individual supervision with staff psychologists, 3 hours of group supervision with staff psychologists, and 1-hour weekly peer supervision with a post-doctoral fellow in Trauma Services.
- July 2006-2010
- West L.A. Pepperdine University Psychological Clinic Los Angeles, CA
Practicum - Aaron Aviera, Ph.D., Edward Shafranske, Ph.D., Joan Rosenberg,
Ph.D. - Supervisors
- Conduct intakes and long-term individual therapy with adults and adolescents of varied age, race, and ethnicity. Diagnoses range from V-codes to Major Depressive Disorder to Axis II Personality Disorders.
 - Administered a comprehensive test battery to assess for learning disabilities and ADHD.
 - Attend 1-hour weekly supervision with a licensed psychotherapist and, from September 2006-August 2007, 1-hour weekly peer supervision with a fourth year Psy.D. student.
 - From July 2006-2007, participated in weekly case conference, which involved case presentations and assisting other students with case

conceptualization, diagnosis, and treatment planning.

April 2009

Los Angeles Ambulatory Care Center (Downtown VA) Los Angeles, CA

Practicum –Debra Sobol, Ph.D. – Supervisor

- Created and facilitated a 5-week Positive Psychology group for male and female veterans in the Behavioral Medicine department of Mental Health Services. The veterans had requested that the group return after its success the year before.
- Periodic individual supervision.

March 2009-August 2009

LAC+USC – Los Angeles County Hospital

Los Angeles, CA

Practicum –Louise Macbeth, Ph.D. - Supervisor

- Administered personality, cognitive, academic, and diagnostic psychological assessments to a diverse population of lower SES children and adolescents in Child and Adolescent Outpatient Services. Diagnoses ranged from ADHD to Psychotic Disorder NOS.
- Wrote integrated full reports incorporating medical records for each assessment case.
- Participated in weekly seminars on the assessment of adults and children with leaders in the field. Subjects of seminars included trauma assessment, pharmacological interventions for adults and children, ADHD assessment.
- Weekly individual supervision for each testing case.

September 2008-February 2009

LAC+USC – Augustus Hawkins

Los Angeles, CA

Practicum –Louise Macbeth, Ph.D. - Supervisor

- Administered personality, cognitive, academic, and diagnostic psychological assessments to a diverse population of lower SES adolescents on the Adolescent Inpatient Unit. Patients were from normal and forensic populations.
- Wrote integrated full reports incorporating medical records for each assessment case.
- Attended Grand Rounds and participated in weekly seminars on the assessment of adults and children with leaders in the field. Subjects of seminars included trauma assessment, mental retardation, educational testing, advanced understanding of medical records.
- Weekly individual supervision for each testing case.

August 2007-August 2008

Los Angeles Ambulatory Care Center (Downtown VA) Los Angeles, CA

Practicum –Debra Sobol, Ph.D. - Supervisor

- Conducted individual therapy, intakes, and facilitated psychoeducational and process groups with male and female veterans ages 20s-80s of a variety of ethnic and SES in the Behavioral Medicine Department.
- Co-facilitated 13 groups, four of which I co-designed with a pre-doctoral intern.
- Created and facilitated a 4-week group focusing on Positive Psychology.

- Participated in weekly seminars on Law and Ethics and Behavioral Medicine, monthly seminars in Post-Traumatic Stress Disorder, and monthly High Risk Conference.
- Attended 1-hour weekly individual supervision and 1.5-hour weekly group supervision with a licensed psychotherapist.

January 2005-March 2006

Suicide Prevention Center

Los Angeles, CA

Crisis Call Counselor - Barbara Hornichter - Supervisor

- Worked as a crisis call counselor for the suicide hotline 4 hours a week. Clients included those who suffered from severe depression, anxiety, chronic illness, substance dependence, grief, personality disorders, or financial hardship.
- Attended continuing education seminars in such subjects as psychiatric medications, guns and suicide, and self-injury.
- Participated in 60 hours of training in crisis call counseling, suicide, lethality assessment, mental illness, homosexuality, substance and physical abuse, and adolescence.

June 2005-March 2006

National Center for Child Traumatic Stress

Los Angeles, CA

Assistant to Cassandra Kisiel, Ph.D., Head of BSC in TF-CBT

- Worked on the implementation of a Breakthrough Series Collaborative, a methodology advocated by the National Institute of Health, in Trauma-Focused Cognitive Behavioral Therapy into clinical settings around the country.
- Aided in initial planning, construction of application materials, letters of acceptance and rejection, and faculty scoring guidelines.
- Compiled TF-CBT Resource List.
- Attained knowledge of TF-CBT through the training manual, computer training, and contact with the creators.

March-September 2005

Cedars Sinai Medical Center

Los Angeles, CA

Patient and Family Care

- Offered companionship, grief counseling, and advocacy for patients in the Oncology, Pulmonary, Surgery, and Rehabilitation wards.
- Acted as a mediator between the patient and his/her nurse or doctor.

OTHER EXPERIENCE RELATED TO CLINICAL WORK

2004

New York, NY

Incarcerated Mothers Program

Assistant to Coordinator of Mentor Program

- Matched mentors and mentees, created and maintained database, checked references, and contacted potential volunteers.

Teacher

- Designed and taught an after-school drama program for junior high school children whose mothers were incarcerated.

PUBLICATIONS/PRESENTATIONS

2009

- Kelly, C., Schutz, K., Leshner, A., Jakle, K., Burgoyne, M., Drescher, K., & Foy, D. (November, 2009). Childhood Experiences and Religious Coping Styles in Veterans with Chronic Combat-Related PTSD. Poster session at the International Society for Traumatic Stress Studies, Atlanta, GA.

2008

- Drescher, K.D., Foy, D., Burgoyne, M., Lovato, L., Casas, E. (2008). Issues in grief and loss, honor and remembrance: The loss of innocence and survivor guilt. In Freeman, S.M., Moore, B.A., & Freeman, A. (Eds.). *Living and surviving in harm's way: A psychological treatment handbook for pre- and post-deployment of military personnel*.
- Didion, L., Burgoyne, M., Casas, E., Schultz, K., Drescher, K., & Foy, D. W. (November, 2008). Aggression and Forgiveness among Male Veterans with Chronic PTSD. Poster session at the International Society for Traumatic Stress Studies, Chicago, IL.

2007

- In-service presentation *Stress Management for Crisis Call Workers* at the Suicide Prevention Center

RESEARCH EXPERIENCE

October 2009 – July 2010

Pepperdine University

Research Assistant

Supervisor – Drew Erhardt, Ph.D.

- Performed literature searches for topics related to Adult ADHD and tested computer-based interventions for ADHD booster sessions.

May 2008-May 2009

Pepperdine University

Research Assistant

Supervisor – David Foy, Ph.D.

- Coordinated with the National Center for Posttraumatic Stress Disorder at the Menlo Park Veterans Affairs Administration in order to assist with research projects and publications. Topics of research included PTSD, high-risk behaviors in the veteran population, moral injury and religiousness/spirituality. Assist with empirical articles and book chapters.

September 2006-August 2010

Pepperdine University

Research Lab Member

Supervisor – David Foy, Ph.D.

- Participated in a weekly lab working in collaboration with the National

Center for Posttraumatic Stress Disorder at the Menlo Park Veterans Affairs Administration conducting a variety of research studies focusing on PTSD, veterans, health-risk behaviors, and spirituality.

January -September 2005 Pepperdine University

Research Assistant

- Aided in dissertation research studying the difference between Social Phobia and *Taijian Kyofusho* in American and Japanese students. Administered and sorted questionnaires, input results and ran statistical analyses in SPSS.
- Lectured undergraduate classes at the Pepperdine Malibu Campus about research methodology.

TEACHING AND OTHER WORK EXPERIENCE

July 2009-August 2010 Pepperdine University

Psychotherapy Peer Supervisor

Pepperdine West Los Angeles Psychological Clinic

- Provided weekly one hour individual supervision to one 1st year doctoral student and group supervision to two 2nd year doctoral students as well as any other supervision necessary in person or via telephone.
- Focus of supervision included: learning to build rapport, learning to be fully present in the room, developing a therapeutic identity, case conceptualization, exploration of transference and countertransference issues, treatment planning and interventions, support.
- Attend bi-weekly 1.5 hour case conference for 1st year clinic therapists.
- Attend weekly 1.5 hour group supervision focusing on supervisees and the supervision experience with clinic director.

June 2008-August 2010 Pepperdine University

Assessment Peer Supervisor

Pepperdine West Los Angeles Psychological Clinic

- Scored assessment measures for full test batteries including but not limited to WAIS-IV, WISC-IV, MMPI-II, MCMI-III, Beery VMI and Rorschach.
- Taught administration of the Woodcock Johnson Test of Achievement Test, Woodcock Johnson Test of Cognitive Ability, and Nelson-Denny Reading Test.
- Attended weekly supervision for assessment cases.
- Reviewed and provided feedback on assessment reports.

April 2007- July 2010 Pepperdine University

Assessment Teaching Assistant/Graduate Assistant

Doctoral and Masters Assessment Courses

- Scored cognitive measures and personality measures for full test batteries including but not limited to WAIS-IV, MMPI-II, MCMI-III, and Rorschach.
- Ran test administration workshops for Psy.D. students on WAIS-IV, WISC-IV, and Rorschach administration.

- I have scored 43 Rorschach using the Exner system, 19 WAIS-IV, 5 WISC-IV, 4 WRAT-IV, 7 WJ III-ACH, 8 WJ III-COG, 7 MCMI-III, 28 MMPI-II, 5 Nelson-Denny, 4 Beery VMI, 8 FAS, 8 RAVLT, 8 Trails, 15 Bender II, 5 H-T-P, and 6 Rotter Sentence Completion. I have also interpreted 9 Rorschach using the Exner system.

January-October 2009

Kathleen Moore, Ph.D.

Record Reviewer for Psychiatric Workers Compensation Claims

- Reviewed AME and QME psychiatric evaluations, medical records, and additional documents for individuals with worker's compensation claims and wrote comprehensive psychiatric record reviews or supplemental reports based on the findings.

Fall 2007

Pepperdine University

Teaching Assistant Advanced Psychopathology

- Graded all exams and performed administrative duties.

1996-1997

New York, NY

Princeton Review

SAT Preparation Teacher

- Taught math SAT preparation to high school students and remedial math to low-income students.

June-August 1994

Dhahran, Saudi Arabia

Dhahran Elementary School

Music Teacher for TESOL Program

- Taught music and English skills through music to students grades K-4 and created and organized the final musical production for all 120 TESOL students.

1992-1994

Dhahran, Saudi Arabia

Burgoyne SSAT Prep

Founder and Teacher

- Founded, operated, and taught an SSAT Preparation program for junior high school students.

9 years as a professional theatre actress working Off-Broadway in New York, regionally, and on tour throughout the U.S.

MEMBERSHIPS

Psi Chi	Honor Society – GPA 4.0
American Psychological Association	Student Affiliate
Anxiety Disorders Association of America	Student Member
International Society for Traumatic Stress Studies	Student Member
Los Angeles County Psychological Association	Student Member

CONFERENCES/WORKSHOPS

PE Training - Center for Deployment Psychology Conference	October 2010
Resolving Trauma Without Drama	September 2010
International Society for Traumatic Stress	November 2008
Motivational Interviewing: Professional Training Series	September 2008
Humanistic-Existential Training Seminar	September 2008
MCMI-III Seminar	November 2007
International Society for Traumatic Stress	November 2007
Los Angeles County Psychological Association Conference	October 2007
National Psychotherapy with Men Conference	June 2007
Existentialism – Kirk Schneider, Ph.D.	October 2006
Mindfulness & Psychotherapy – Jerome Front, M.F.T.	September 2006
Evolution of Psychotherapy Conference	December 2005
Self-Injury – In-Service Didi Hirsch	August 2005

ABSTRACT

The mortality rate due to behavioral causes among veterans diagnosed with chronic post-traumatic stress disorder (PTSD) is much higher than the rate found among the normal population. In particular, veterans diagnosed with chronic PTSD die more frequently from conditions related to substance abuse, such as Hepatitis C, blood diseases, violence, aggression, and suicide. In addition, rates of behaviorally-related diseases such as obesity, diabetes, and heart disease are high among veterans diagnosed with chronic PTSD. These findings highlight a need to promote healthy behavioral practices among veterans diagnosed with PTSD. A manualized health promotion group treatment for veterans with PTSD was developed to target health risk behaviors prevalent among this population. The manual incorporates psychoeducation, motivational interviewing and the transtheoretical model to increase veterans' awareness of their engagement in health risk behaviors and increase motivation for change. The meta-intention of the treatment protocol is to promote positive health practices and increase longevity and quality of life among this veteran population. This project focuses specifically on the development of the assessment strategy component of the group intervention. The assessment measures are interwoven into the group treatment and offer a comprehensive strategy for evaluating the efficacy of the treatment protocol.

Introduction

Recent research has found that Vietnam veterans diagnosed with chronic combat-related post-traumatic stress disorder (PTSD) die from high-risk behavioral causes, particularly those behaviors related to substance use, at a rate significantly greater than that of the normal population (Drescher, Rosen, Burling, & Foy, 2003). A follow-up study by Schafer (2008) found that 45% of PTSD veteran deaths were due to behavioral causes. This is striking when compared with the mortality rate of 8% due to behavioral causes in the normal population. Of particular note were those deaths from Hepatitis C (21.5% vs. 0.2%), blood diseases (1.5% vs. 0.5%), and alcohol and drug use (24% vs. 1%). An examination of these causes of death, as well as that which influences their acquisition and maintenance, suggests that the high rate of death due to behavioral causes seen in this population could be decreased with appropriate intervention.

The prevalence rates of Hepatitis C (HCV) and Human Immunodeficiency Virus (HIV) infection in the veteran population are significantly greater than that of the general population (Brau et al., 2002; Desai, Rosenheck, & Agnello, 2003). Estimates of HCV infection among veterans range from 7% - 44% (Cheung, 2000; Cheung, Hanson, Maganti, Keefe, & Matsui, 2002; Desai et al.; Roselle, Danko, Kralovic, Simbarti, & Kizer, 2002). Estimates of HIV infection are also wide-ranging, with findings of positive HIV infection from 1.8% among treatment seeking homeless veterans (Cheung et al.) to as high as 37% among a random sample of veterans from the National Survey of Veterans (Hoff, Beam-Goulet, & Rosenheck, 1997). Despite the wide range of HCV and HIV prevalence rates, the rate of HCV and HIV infection among veterans is considerably higher than that of the normal population. In comparison, prevalence rates of HCV in the

normal population are estimated to be 1.8% (Centers for Disease Control and Prevention, 2006) and 0.6% for HIV (Unicef, n.d.). In addition, co-morbidity of the two diseases is common (Backus, Boothroyd, & Deyton, 2005; Cheung et al.). When examining veterans with PTSD, rates of HIV and HCV infection are even higher (Backus et al.; Hoff et al.; Lim, Cronkite, Goldstein, & Cheung, 2006; Nguyen et al., 2002).

The rates of comorbidity of substance use disorders (SUDs) and PTSD among veterans is also alarmingly high, with prevalence rates for comorbid SUDs ranging from 37-92% in veterans with PTSD (Boudewyns, Albrecht, Talbert, & Hyer, 1991; Eisen et al., 2004; Roszell, McFall, & Malas, 1991) and comorbid PTSD rates of 46% among veterans with SUDs (McFall, Mackay, & Donovan, 1991). In fact, research has demonstrated that SUDs are the most frequently co-occurring disorders among veterans with PTSD (Faustman & White, 1989; Hryvniak, 1989). Although higher rates of alcohol abuse or dependence are found among veterans with PTSD, rates of drug abuse or dependence also remain very high (Hryvniak). Lifetime alcohol dependence rates range from 31-85% and lifetime drug dependence rates range from 4-60% (Eisen et al.; McFall, Mackay, & Donovan, 1992; Rozell et al.; Sutker, Uddo, Brailey, Vasterling, & Errera, 1994).

Significant interrelationships can be found between HCV and HIV infection and substance use disorders. Those veterans who have a history of intravenous drug use or alcohol abuse and/or dependence are at risk for acquiring HCV and HIV (Backus et al., 2005; Brau et al., 2002). Substance use may also serve to worsen HIV disease progression in veterans. Drinking is associated with poor virologic control, hepatic co-morbidity, anemia (Conigliaro, Gordon, McGinnis, Rabeneck, & Justice, 2003), and

decreased medication compliance in HIV positive veterans (Braithwaite et al., 2005). Those HCV positive veterans with substance use disorders or active psychiatric disorders are less likely to be eligible for treatment and experience more adverse effects resulting in premature discontinuation of treatment (Bini et al., 2005; Ho et al. 2001; Huckans, Blackwell, Harms, & Hauser, 2006).

Substance use has also been linked to other health risks, such as violence, suicidality, and chronic health problems in populations of veterans with PTSD (McFall et al., 1991; McFall, Fontana, Raskin, & Rosenheck, 1999; Prince, Risk, Haden, Lewis, & Spitaznagel, 2004; Tate, Norman, McQuaid, & Brown, 2007). Violence, suicide, and health problems are common causes of mortality among veterans diagnosed with PTSD with veterans with PTSD dying at higher rates from violence and suicide than the general population (suicide, 5% vs. 1%; homicide, 3% vs. 0.5%) and dying from heart disease at a rate of 20% (Schafer, 2008).

In addition to direct causes of mortality in the PTSD veteran population, there are indirect behavioral influences on mortality that also affect veteran quality of life. Sleep disturbances are cardinal features of PTSD. Sleep disturbances manifest as recurrent distressing dreams of the trauma and difficulty falling or staying asleep (Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition Text Revision, 2000). Nightmares are the most common sleep disturbances among veterans with PTSD and occur at a rate of 65-94% (Jukic, Sumic, Brecic, & Muzinic-Masle, 1999; Leskin, Woodward, Young, & Sheikh, 2002). Other common sleep disturbances reported by veterans with PTSD with more frequency than by veterans without PTSD are insomnia, startle awakenings, nonrestorative sleep, and body movement during sleep (Husain, Miller, & Carwile, 2001;

Leskin et al.; Mellman, Kulick-Bell, Ashlock & Nolan, 1995). Sleep laboratory studies have also identified significantly decreased sleep efficiency and more microawakenings during sleep among veterans with PTSD when compared with normal controls (Husain et al.; Mellman et al.; Mellman, Nolan, Hebding, Kulick-Bell, & Dominguez, 1997).

Sleep disturbances are linked to strong emotional and physiological responses in veterans with PTSD. Trauma-related nightmares are accompanied by strong emotions that would have been appropriate during the traumatic event itself, such as rage, intense fear, or grief and may result in terror upon awakening (Ross, Ball, Sullivan, & Caroff, 1989). Insomnia in veterans with PTSD is also characterized by high levels of anxiety, psychomotor activity, and fear (Inman, Silver, & Doghramji, 1990).

Although there has been little research about the effect of sleep on high-risk health behaviors in veterans with PTSD, substance abuse/dependence literature suggests a link between sleep disturbance and substance use as well as substance use and PTSD. It is hypothesized that veterans with PTSD self-medicate with drugs and alcohol to decrease ideational reexperiencing and physiological arousal (McFall, et al. 1992; Roszell, et al., 1991). The sleep disturbances found with high frequency among veterans with PTSD are associated with both reexperiencing and arousal symptoms and, thus, may be tied to increased distress and substance use in this population.

The research demonstrates the substantial prevalence of sexually transmitted diseases, substance use, and sleep disturbances among veterans with PTSD and the extensive toll they take on the health and longevity of veterans. An intervention targeting these health risk behaviors and promoting behavioral change could lead to a decrease in the premature mortality rate found in this population as well as an increase in the positive

health practices and quality of life among veterans diagnosed with PTSD. In addition, a health promotion intervention could be used as a preventative measure to prevent the acquisition of health risk behaviors among those recently diagnosed with PTSD.

The primary motivation of this project was to develop a manualized health promotion group treatment promoting behavioral change of health risk behaviors commonly identified among veterans with PTSD. Research has shown that motivational interviewing is effective at reducing alcohol use, drug use, cigarette smoking, and risky sexual practices among adult populations (Ball et al., 2006; Bellack, Bennett, Gearson, Brown, & Yang, 2006; Butler et al., 1999; Carroll et al., 2005). Although the research is limited among veteran populations, studies examining the efficacy of motivational interviewing in various behavioral domains suggest its efficacy extends to the veteran population (Davis, Baer, Saxon, & Kivlahan, 2003; Project MATCH Research Group, 1997). In light of the success of motivational interviewing in promoting behavioral change, this intervention incorporates motivational interviewing strategies to increase veterans' awareness of their engagement in health risk behaviors and increase their motivation to change. To the developer's knowledge, there is currently no standardized, motivational interviewing treatment protocol that focuses on addressing health risk behaviors in veterans diagnosed with PTSD.

This dissertation focuses specifically on the development of the assessment strategy which was designed to be an integral component of the motivational interviewing group intervention. The assessment strategy provides objective measures that allow the veterans to increase their awareness of their engagement in health risk behaviors and examine their current motivation to change. In addition, the integrated

assessments provide useful information to the group facilitators about the needs of the group members as well as the efficacy of the intervention. Furthermore, the assessment strategy provides a blueprint for empirical validation of the group treatment.

Methods

Purpose of the Resource

Current research has demonstrated that mortality rates due to preventable behavioral causes are significantly higher in veterans with PTSD than in the general population. As such, a well-designed strategy to decrease health risk behaviors and promote positive health practices among veterans diagnosed with PTSD is needed. The purpose of this project was to develop a systematic approach to targeting those health risk behaviors that occur with increased frequency among veterans diagnosed with PTSD and lead to higher rates of mortality with the intention of promoting positive health practices and increasing longevity and quality of life among these veterans.

This project proposed to create a group treatment comprised of a three-piece manual set that serves multiple functions. The manual set is intended to offer a systematic approach for the integration of health promotion practices in trauma treatment. It offers a well-designed approach for practitioners who wish to incorporate health promotion interventions into programs that provide services to veterans diagnosed with PTSD. Additionally, it integrates assessment measures into the treatment protocol that enhance the motivational interviewing treatment and allow for empirical investigation and validation of the efficacy of the group treatment.

This project was founded on the Live Long and Prosper group, a group that was previously run at the Menlo Park Veterans Administration Medical Center's (Menlo Park

VAMC) residential PTSD treatment program. The Live Long and Prosper group was conceived by Kent Drescher, Ph.D. and Josef Ruzek, Ph.D. The development of the group was undertaken by Josef Ruzek, Ph.D. and, once outlined, was merged into an ongoing group designed and facilitated by Judith Faris, R.N.P. The materials developed by Ruzek and Faris served as the foundation for the development of this manual set. The three-component manual set is comprised of a facilitator's manual, member workbook, and an assessment strategy and was collaboratively developed by three Pepperdine University doctoral candidates over a four-year period.

Live Long and Prosper Group Development History

The inspiration for the original Live Long and Prosper group was rooted in the trauma literature and the research of providers working with combat veterans in a residential PTSD treatment program at the Menlo Park VAMC. This 60-day inpatient program offers group-based treatment with adjunctive individual psychotherapy as needed. Through research led by Kent Drescher, Ph.D. and David Foy, Ph.D. as well as reviews of the trauma literature, it became clear to clinicians and researchers at the Menlo Park VAMC that veterans in residential PTSD treatment were at increased risk of death from high-risk behaviors, including preventable diseases such as diabetes, cardiovascular disease, and Hepatitis C and from substance-related deaths such as accidents, suicides, and homicides. This realization led Kent Drescher, Ph.D. and Josef Ruzek, Ph.D. to create a high-risk behavior questionnaire and to develop a group designed to reduce mortality risk due to high-risk behaviors in this population. The issues of most concern for Drescher and Ruzek were aggression, gun ownership, aggressive driving, anger, poor nutrition, lack of exercise due to isolated and sedentary lifestyles, substance use, and

smoking. Dr. Ruzek outlined the content for the group and ultimately merged the conceived high-risk behavior group with an on-going psychoeducational group run by Judith Faris, R.N.P. The intention of the new Live Long and Prosper group was to offer information and motivational strategies to aid veterans in making informed choices about their life, health, and futures.

The original Live Long and Prosper group ran for five years from 2002-2007. It was a 90-minute, once weekly group for between 20 and 40 group members. The group followed a rolling admissions model, which is the primary model employed at the Menlo Park VAMC residential PTSD treatment program. Due to the high levels of avoidance found among veterans with chronic PTSD, attendance at the group was mandatory. Assessment measures that evaluated engagement in high-risk behaviors were given at intake. Although the group was originally designed to have additional assessment measures completed at discharge and at four months post-treatment, these questionnaires were never created. In addition to the High-Risk Behaviors Questionnaire given at intake, veterans completed a gun ownership and a gun ownership stages of change questionnaire.

The idea to create the current proposed manualized health promotion group treatment came from inconsistencies that were identified in the content and facilitation of the original Live Long and Prosper group at the Menlo Park VAMC. The content, style, and format of the group varied widely depending on the individual facilitator. It was determined that content derived from thorough knowledge of the literature and use of validated motivational techniques could increase the group's efficacy and relevance to the population served.

Target Audience

The project developers used existing group materials from the Live Long and Prosper group as the foundation for the development of the new health promotion group that incorporates the transtheoretical model and health risk behavioral frequency measurement into a formulized assessment strategy. The purpose of this dissertation was to develop the assessment strategy component of the group treatment. The target audience for the assessment strategy is the group facilitator who is implementing the health promotion group intervention.

Development of the Resource

The development of this manualized group protocol arose out of two pre-established models of group treatment for veterans diagnosed with PTSD-Trauma Focus Group Therapy (Foy, Ruzek, Glynn, Riney, & Gusman, 2002) and the Trauma and Spirituality Group (Leoni, 2005; Romesser, 2005; Sornborger, 2005). Trauma Focus Group Therapy is a group treatment designed to enhance the ability of veterans with combat-related PTSD to manage their traumatic stress symptoms. The Trauma and Spirituality Group is designed to promote healthy spiritual practices among veterans with PTSD in order to improve coping abilities and enhance quality of life in this population. The decision to create a facilitator's guide, member workbook, and assessment strategy for this health promotion group treatment for veterans diagnosed with PTSD was based on the structure of these pre-established group treatments.

The concept and content of the health promotion resource was built upon the original Live Long and Prosper group that was conducted at the Menlo Park VAMC. This group provided patient education on relevant health-related topics and emphasized the

use of psychoeducation as a means of promoting change in health risk behaviors. To build upon the intent of the original Live Long and Prosper group to motivate behavioral change, the developers of the current manual set decided to incorporate motivational interviewing into the treatment protocol. Current research has shown that motivational interviewing can be an effective method for promoting behavioral change across a wide-variety of behavioral domains. This large body of research provides strong support for the efficacy of a health risk behavior intervention for veterans with PTSD constructed using the motivational interviewing treatment model.

Division of the Literature

Current research has identified numerous health risk behaviors and health conditions that are prevalent among the veteran population. McFall and Cook (2000), in their review of the literature, found that smoking, alcohol use, obesity, and physical inactivity all presented significant health risk for veterans with PTSD. Experts in the field of PTSD in veteran populations have further identified areas of needed health risk behavioral intervention through their clinical and research experiences. Based on the literature and the research and clinical expertise of expert practitioners, the developers of the current resource selected the health topics to be included in the current health promotion group. It was determined that the group would address aggression, diabetes, diet, gun safety, exercise, heart disease, obesity, sexually transmitted diseases, sleep, tobacco use, and substance abuse. In order to comprehensively explore the available research on the selected health topics, relevant empirical literature on diabetes, exercise, heart disease, sexually transmitted diseases, sleep, and substance abuse as well as motivational interviewing and the transtheoretical model were strategically divided and

reviewed by three doctoral candidates based on their thematic content. Relevant empirical literature reviews on aggression, diet, guns, obesity, and smoking previously completed by Pepperdine University doctoral students in a PTSD research lab were additionally included. For a comprehensive review of all health topics, refer to the other two components of this health promotion group, the Live Long and Prosper Facilitator's Manual and Live Long and Prosper Member Workbook, as well as Pepperdine University dissertations by Carol Rotko, James M. Keener, Katherine Jakel, Lea Didion, Sarah Metz, and Edrick H. Dorian.

Purpose and Content of the Assessment Strategy

The assessment strategy was designed to accompany the facilitator's manual and the member workbook. The assessment strategy comprehensively and systematically assesses veteran engagement in health risk behaviors and veteran motivation for change and is an integral component of the motivational interviewing protocol. Motivational interviewing seeks to "enhance intrinsic motivation for change by exploring and resolving ambivalence" (Miller & Rollnick, 2002, p. 25). Motivational interviewing exercises facilitate exploration of values and goals and the dissonance between these values and goals and current behavior. Assessment instruments strategically placed within the group protocol allow veterans to objectively assess their frequency of engagement in health risk behaviors and their current stage of change. They are encouraged to reflect upon the results of the behavioral frequency measures and explore how their current behavior correlates with personal values, interests, and goals. The objective results of these measures are thus integral to the process of developing discrepancy. In addition, the stages of change measures assist the veterans in identifying

their current level of desire to change, how their current stage of change may impact their goals and values, and assist veterans in monitoring any changes in their level of motivation throughout the intervention.

The assessment strategy also offers a way to systematically assess facilitator fidelity to the treatment protocol. Collins et al. (2009) believe that facilitator adherence to the treatment protocol is key to establishing significant treatment effects to an intervention. In addition, facilitator adherence measures enable group facilitators to monitor their fidelity to the protocol and identify any obstacles to such adherence quickly. In the Live Long and Prosper group, the facilitators will complete Facilitator's Adherence Checklists following each session which may be used for empirical evaluation of the treatment protocol and self-monitoring by the group facilitators.

The assessment strategy provides a comprehensive blueprint for empirical validation of the treatment protocol. Pre- and post-intervention measures are included which allow for comparison of behavioral engagement and motivation for change pre- and post- intervention. In addition, pre- and post- session measures of motivation for change are included, which allow for validation of the efficacy of the intervention for each health risk behavior. In addition, adherence to the treatment protocol is measured following each session to ensure fidelity to the intervention. Included within the assessment strategy are schedules for test administration to facilitate ease of evaluation and promote consistency among empirical studies. Alternative assessment schedules are offered for those sites unable to administer all measures.

The assessment strategy includes assessments in five domains: a) frequency of veteran engagement in health risk behaviors pre- and post- intervention, b) veteran

readiness to change pre- and post- intervention, c) veteran engagement in session specific health risk behaviors, d) veteran readiness to change health risk behaviors pre- and post-session, and e) facilitator adherence to the treatment protocol. During the initial group session, all group participants are administered a comprehensive self-report measure assessing the frequency of their engagement in all relevant health risk behaviors and a readiness to change measure assessing their current stage of change for health related behaviors, attitudes, and practices. These measures will be re-administered at completion of the treatment to monitor changes in these domains. Each session, veterans will complete pre- and post-session readiness to change measures specifically related to the session content and session specific measures of behavioral frequency. Facilitators will complete assessments following each session that are designed to enhance facilitator adherence to the group treatment.

Development Process

The assessment strategy was developed in conjunction with the facilitator's manual and member's workbook by three Pepperdine doctoral students over a four year period. The development of the assessment strategy and the manual set occurred in several distinct phases. First, the developers reviewed existing motivational interviewing group treatment protocols. The two most influential resources to the development of this manual set were *Group Treatment for Substance Abuse: A Stages-of-Change Therapy Manual* (Velasquez, Maurer, Crouch, & DiClemente, 2001) and *Curriculum-Based Motivation Group: A Five Session Motivational Interviewing Group Intervention* (Fields, 2004). In addition to these two manuals, group developers also consulted *Motivational Enhancement Therapy with Drug Abusers* (Miller, 1995), *Motivational Enhancement*

Therapy Manual: A Clinical Research Guide for Therapists Treating Individuals with Alcohol Abuse and Dependence (Miller, Zweben, DiClemente, & Rychtarik, 1995), and *Motivational Groups in Community Substance Abuse Programs* (Ingersoll et al., 2002). These group treatment protocols were reviewed in order to generate ideas regarding the format and content of the manual set as well as offer insights into the use of motivational interviewing techniques into a group protocol.

The developers also received training in motivational interviewing through the *Motivational Interviewing: Professional Training Series* (Miller, Rollnick, & Moyers, 1998) as well as the seminal work *Motivational Interviewing: Preparing People for Change, 2nd Edition* (Miller & Rollnick, 2002), *Motivational Interviewing in Healthcare: Helping Patients Change Behavior* (Rollnick, Miller & Butler, 2008), and *Motivational Interviewing in the Treatment of Psychological Problems* (Arkowitz, Westra, Miller, & Rollnick, 2007). These sources informed the selection and application of motivational interviewing techniques into the group treatment protocol.

Following review of the group treatment protocols and training in the motivational interviewing technique, the three developers began the co-creation of the facilitator's manual. The facilitator's manual was developed in ongoing collaboration between the three developers to ensure continuity of format, language, and content across the three components of the group treatment. During the construction of the facilitator's manual, the tenor of the intervention, structure of the psychoeducational and motivational interviewing components, and requirements of the member workbook and assessment strategy were defined. The content of the original Live Long and Prosper group informed both the choice of session topic as well as the tenor of the group, in which group

participation is fostered through the use of open-ended questions regarding the health risk behaviors and subsequent provision of psychoeducation.

As progress was made with the facilitator's manual, feedback was gathered from Pepperdine graduate students in a PTSD research lab and experts in the field of veterans and trauma regarding the clarity, structure, content, and usability of the intervention. Their feedback was integrated into the manual set on an ongoing basis throughout its development.

As the development of the facilitator's manual approached completion, the developers were able to begin the creation of the assessment strategy and the member workbook. The exercises included in the member workbook stemmed directly from the interventions outlined in the facilitator's manual and sought to maintain consistency of usage and ease of usability. Workbook exercises designed to be used across sessions as well as session specific exercises were created. The developers also included psychoeducation on each health risk behavior to help group members gain familiarity with each session topic as well as help them identify ways in which each health risk behavior may be impacting their lives. Finally, an introductory chapter introducing the group members to the motivational interviewing approach and the stages of change model and a concluding chapter of additional resources and positive behavioral substitutes were generated.

In the development of the assessment strategy, assessment measures utilized in the existing group treatments previously mentioned were reviewed. In addition, behavioral frequency and stages of change measures available on the internet for diet, exercise, and sleep difficulties were reviewed. The content and assessment measures

from numerous websites, specifically the National Institute of Health, Centers for Disease Control and Prevention, United States Department of Health and Human Services, American College of Sports Medicine, National Institute on Aging, United States Department of Agriculture, and the Cancer Prevention Research Center informed the assessment measures created by the developers. In addition, components of the High Risk Behavior Questionnaire developed by Kent Drescher, Ph.D. and Josef Ruzek, Ph.D., which was used as an assessment instrument used in the original Live Long and Prosper group, were adapted to inform session specific measures of behavioral frequency and motivation to change. Research was also undertaken to determine the most common measures of behavioral frequency used to assess substance use and smoking in research done within the veteran population. Those measures that appeared with the most frequency in the literature were identified, their ease of usability was ensured, and they were integrated into the assessment strategy. In addition, the Facilitator's Adherence Checklist was adapted from the Trauma and Spirituality Group (Romesser, 2005) to meet the needs of the current intervention.

Measures of Behavioral Frequency

Pre-existing measures of the frequency of engagement in health risk behaviors as well as developer-created measures of behavioral engagement are included in the assessment strategy. Behavioral frequency measures are administered at the commencement of the group intervention, at completion of the group intervention, and during each session.

Health Behavior Frequency Measure. The Health Behavior Frequency Measure (HBFM) is a developer-created self-report instrument that examines the frequency of

engagement in health risk behaviors. This measure is administered to the group participants at the beginning of the first session of the health promotion group intervention and at the completion of the intervention. The HBFM assesses each domain of health risk behaviors that are a part of the group protocol; specifically, diet, exercise, sleep difficulties, risky sex behavior, aggressive acts, gun safety, substance use, and tobacco use. The measure incorporates questions regarding aggressive acts, gun ownership, and risky sex behavior from the High Risk Behavior Questionnaire (Ruzek et al., 2000), an unpublished measure used in the original Live Long and Prosper group. In addition, questions regarding substance use were informed by the structure of questions from the High Risk Behavior Questionnaire, Alcohol Use Disorders Identification Test (Babor, de la Fuente, Saunders, and Grant, 1992) and the Drug Use Questionnaire (Skinner, 1982), pre-existing measures incorporated into the substance use session. Assessment questions pertaining to diet, exercise, and sleep difficulties were informed by review of research in these areas.

The HBFM is a 21-question scale, with answers provided in a Yes-No format or on a Likert scale. The measure allows for the qualitative analysis of veteran engagement in a variety of health risk behaviors that are found with great frequency among veterans diagnosed with PTSD and lead to increased mortality in this population. This measure is designed to provide information to the group facilitator about the frequency of veteran engagement in each behavioral domain at the onset of the group, which allows the facilitator to address the needs of individual veterans, as well as illuminate changes in frequency of engagement in risky behaviors when administered post-intervention. As the

measure is administered pre- and post-intervention, it allows for empirical validation of the intervention based on changes noted in veteran engagement in health risk behaviors.

Developer-created session specific measures of behavioral frequency. Session-specific measures of behavioral frequency are administered during each session. These self-report instruments provide veterans with objective information about their level of engagement in health risk behaviors. These measures promote veteran awareness of their current level of behavioral engagement and provide information integral to the motivational interviewing exercises included in the group protocol.

Following an extensive review of measures assessing diet, heart disease, exercise, sleep, and safe sex behavior, the developers determined that the intervention would be best served by the creation of new measures specifically designed for the group intervention. The developer's created five behavioral frequency measures designed to assess eating habits, risk for heart disease, exercise, sleep, and safe sex behavior. Each assessment measure was informed by the research and follows the recommendations of relevant groups dedicated to prevention of disease/health risk in these areas; specifically, the National Institute of Health, Centers for Disease Control and Prevention, United States Department of Agriculture, United States Department of Health and Human Services, American College of Sports Medicine, and the National Institute on Aging.

The self-report measures of behavioral frequency are presented in a variety of formats. Veterans are asked to respond using a Yes-No format, Likert scale, or by checking off individual boxes. Scoring is included for each measure and is designed to be user friendly. The scoring provides pertinent information that can be easily disseminated to the veterans orally by the group facilitators. The information provided in the scoring

component is designed to elicit consideration by the veterans of their current level of engagement in health risk behaviors and offers suggestions for behavioral change.

Aggressive Behavior Questionnaire and Firearm Safety Questionnaire. The Aggressive Behavior Questionnaire and the Firearm Safety Questionnaire were created from the High-Risk Behavior Questionnaire (Ruzek et al., 2000). The High-Risk Behavior Questionnaire (HRBQ) is an unpublished instrument that assesses multiple domains of health-risk behaviors among the veteran population. It was originally designed to be administered to veterans as part of a comprehensive assessment package upon intake at the Menlo Park VAMC residential PTSD treatment program. The developers extracted and combined the questions measuring veteran engagement in aggressive behaviors and firearm safety from the HRBQ to create comprehensive measures.

The Aggressive Behavior Questionnaire is an 8-item self-report measure of aggressive behavior. Specifically, the measure assesses engagement in verbal threats, assault, property damage, and aggressive driving within the last year. Veterans are also asked to rate their frequency of engagement in any aggressive behavior in the last year on a Likert scale. The Firearm Safety Questionnaire is a 7-item self-report measure. It assesses whether firearms are kept according to National Rifle Association safety guidelines and personal risks factors for unsafe gun use, such as previous suicide attempt with a firearm or previous discharge of a weapon outside of military or law enforcement service. Veterans are asked to answer questions about firearm safety in a Yes-No format. The developers decided to extend the time-frame of measurement from four months in the HRBQ to one year in the Aggressive Behavior Questionnaire and six months in the

Firearm Safety Questionnaire in order to gain a more comprehensive picture of veteran engagement in aggressive acts and account for possible time spent in treatment. The measures are administered concurrently during Session 7: Aggressive Behavior/Gun Safety.

Alcohol Use Disorders Identification Test. The Alcohol Use Disorders Identification Test (AUDIT; Babor, de la Fuente, Saunders, & Grant, 1992) is a 10-question measure of alcohol use scored on a 5-point Likert scale. It was developed by the World Health Organization as a brief screening tool for excessive drinking. It is frequently used in the assessment of drinking behavior in research pertaining to veterans. The AUDIT provides an accurate risk assessment for hazardous or harmful alcohol use or alcohol dependence across cultures, gender, and age (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). Research has shown the AUDIT to have favorable sensitivity (.90) and lower but still acceptable specificity (.80) for current ICD-9 alcohol use disorders when using the cut-off score of 8 (Babor et al.), the cutoff score used in this assessment strategy. Research has also shown the AUDIT to have high internal consistency and high reliability ($r=.86$; Babor et al.).

The AUDIT was created for primary care workers to identify those who would benefit from reducing their level of alcohol consumption and to provide a framework for intervention among this population. These intentions are in line with the rationale for the current manual set targeting health risk behaviors and promoting motivation to change substance use habits. In the current group protocol, the AUDIT is administered during the Substance Use session to increase veteran's awareness of their current drinking habits.

Drug Use Questionnaire, Short Form. The Drug Use Questionnaire, Short Form (DAST-10; Skinner, 1982) is a 10-item self-report instrument designed for brief clinical screening and treatment evaluation research to determine psychoactive drug abuse (Gavin, Ross & Skinner, 1989). Veterans are asked to note “yes” or “no” to questions regarding their engagement in drug use over the past 12 months. Research studies have found that the DAST, the original 28-item version, has high levels of internal consistency reliability (0.92), a largely unidimensional scale, and concurrent validity with frequency of drug use in the last 12 months (Skinner, 1982). At a cut-off point between 5/6 and 9/10, the DAST shows sensitivity between 96% to 78% and specificity between 79% and 89% with overall accuracy of 85% (Gavin et al.). The DAST is also highly correlated with current ($r=0.75$) and lifetime ($r=0.74$) DSM-III drug diagnosis (Gavin et al.).

The DAST-10 is administered during the Substance Use session of the group intervention along with the AUDIT. The developers chose to administer the DAST-10, the short form of the DAST, rather than the DAST, a 28-item measure, to avoid fatiguing the group participants as multiple measures of behavioral frequency are administered during this session. In the current group protocol, the DAST-10 is administered with the intention of increasing veteran awareness of their level of drug use.

Fagerström Test for Nicotine Dependence. The Fagerström Test for Nicotine Dependence (FTND; Heatherton, Kozlowski, Frecker, & Fagerström, 1991) is a 6-item self-report instrument designed to assess for level of nicotine dependence. Specifically, it assesses smoking frequency and habits. The FTND has been tested for reliability and validity among a psychiatric population and a population of veterans with PTSD (Buckley et al., 2005). Among these populations, the FTND was found to be stable based

on test-retest reliability (0.82) and was correlated at statistically significant levels with biological and psychological measures of dependence (0.40; Buckley et al.).

The FTND is administered to the group participants during the Tobacco Use session. It is designed to assist veterans in acknowledging their level of nicotine dependence and to promote critical thinking about their tobacco use.

Stages of Change Measures

Developer-created stages of change measures are included in the assessment strategy. Stage of change is measured pre- and post- intervention as well as pre- and post-session. The developers performed a comprehensive review of existing stages of change measures including the University of Rhode Island Change Assessment Scale (DiClemente & Hughes, 1990), stages of change measures utilized in research studies, stages of change measures included in other group protocols, and stages of change measures for health risk behaviors from the Cancer Prevention Research Center. As the stages of change measures found did not meet the exact needs of the current group protocol, the developers created new measures informed by their research and containing the most salient aspects of measurement of stages of change found across measures.

Health Risk Stages of Change measure. The pre- and post- intervention Health Risk Stages of Change measure was designed to assess the group participants' current stage of change related to any behaviors in which they currently engage that may have a negative impact on their health. Although the group participants are encouraged to reflect upon those behaviors included in the group protocol, specific measures of stage of change for individual health risk behaviors are not included.

The measure assesses the group participants current stage of change by having the group participants first select one of six statements pertaining to their health related behaviors and then circle the stage of change the corresponds to the original statement selected. By separating the statement which best reflects their current health related behavior and the related stage of change, the developers hope to decrease judgment and promote honest disclosure of health risk behavior engagement.

The pre- and post- intervention Health Risk Stages of Change measure is designed to fulfill several functions. The pre- and post- intervention design offers a format for collecting empirical data about the efficacy of the group protocol to increase group participants' motivation to change health risk behaviors over the course of the intervention. It also offers the group participants objective data on changes in their own motivation for change before and following the intervention. In addition, the pre-intervention measure is placed within the first session of the group protocol and is used to educate the group participants about the transtheoretical model and to familiarize them with the type of measure they will be asked to complete each week.

Session specific stages of change measures. The group protocol includes seven session specific stages of change measures which are administered pre- and post- session. The group participant is asked to first select one of six statements pertaining to their session specific health related behaviors and then circle the stage of change that corresponds to the original statement selected. As with the pre- and post- intervention Health Risk Stages of Change measure, the session specific measures separate the statement which best reflects the group participant's current health related behavior and

the related stage of change to decrease judgment and promote honest disclosure of health risk behavior engagement.

The session specific stages of change measures are intended to perform multiple functions. First, they are designed to increase the group participants' awareness of their current level of motivation for change, promote critical thinking about their own motivations, and illuminate any changes in motivation following the group session. In addition, the pre- and post- session design allows for empirical evaluation of the efficacy of the individual group sessions to motivate change in health risk behaviors.

Facilitator's Adherence Checklist

Following each session, the facilitator will complete a session-specific Facilitator's Adherence Checklist. The Facilitator's Adherence Checklist was adapted from the Adherence Checklist (Romesser, 2005) found in the Trauma and Spirituality Group protocol (Leoni, 2005; Romesser, 2005; Sornborger, 2005). In the Facilitator's Adherence Checklist, the major components of each session are identified and the facilitator is asked to check off the completed components. Additional space is provided so the facilitator may note areas of difficulty, obstacles to completion, or issues of relevance for each session component. The Facilitator's Adherence Checklist allows for assessment of fidelity to the protocol. It also serves as a means of identifying problem areas, obstacles to successful session protocol completion, and areas for review when pilot testing the group intervention.

Discussion

Current Applications

Veterans diagnosed with chronic PTSD are more likely to die, and to die at an earlier age, from behavioral causes than the general population. Many of the common sequelae of PTSD, such as substance abuse, aggression, and related behaviors such as risky sexual practices, contribute to these increased mortality rates. In addition, new research demonstrates that veterans with PTSD also suffer from increased rates of behaviorally-related chronic diseases such as diabetes, heart disease, and obesity. The Live Long and Prosper group treatment is designed to meet the needs of this population by decreasing veteran engagement in behaviors that have negative health impacts and to promote positive health practices among veterans diagnosed with chronic PTSD. The developers hope that this may reduce the risk of early mortality due to behavioral causes among this population.

The majority of the research on which this group intervention is formulated is based on samples of older veterans, generally those who served during the Vietnam era. Among this group of veterans, health risk behaviors have often become chronic. For this older veteran population, the Live Long and Prosper group intervention offers the opportunity for older veterans to examine their level of their engagement in health risk behaviors, explore the reasoning behind their engagement in these behaviors, and begin to explore options for behavioral change. The intention of the intervention is to decrease veteran engagement in health risk behaviors and improve veteran quality of life.

This group can also be used for those groups of veterans among whom health risk behaviors have yet to become chronic. Statistics demonstrate that 10 to 18% of military personnel are returning from the current military engagements in Afghanistan and Iraq with probable diagnoses of PTSD (Litz & Schlenger, 2009). Among these new veterans,

the Live Long and Prosper group may be used preventatively. The group can be used to educate new veterans diagnosed with PTSD about the health risk behaviors associated with their mental disorder and mitigate their engagement in health risk behaviors prior to or at the early stages of their engagement in such behaviors. Early intervention may assist new veterans in maintaining positive health practices and increase their motivation to abstain from behaviors which may negatively impact their health and longevity.

The current manual set is based on the Live Long and Prosper group which originated at the Menlo Park VAMC residential PTSD treatment program. As the Veterans Administration is now servicing larger numbers of veterans through outpatient services, the current group is designed to be implemented in an outpatient setting. To foster greater flexibility in an outpatient treatment setting, the group protocol can be implemented using either a cohort or a rolling enrollment model, with the understanding that each veteran should participate in an initial orientation session prior to joining the ongoing group sessions. Despite being designed for an outpatient setting, the group can easily be implemented in a residential PTSD treatment program.

Clinical Implications

The Live Long and Prosper group treatment is designed as an intervention for male veterans diagnosed with PTSD; however, it may be an effective intervention for both male and female veterans. The number of women who are exposed to military or combat-related trauma is increasing and, as such, the rates of PTSD in the female veteran population will also increase. It is likely that female veterans diagnosed with PTSD will engage in behaviors that risk their health and would benefit from a health promotion group treatment. Further research into the specific health risk behaviors prevalent among

female veterans or female trauma survivors would be necessitated to ensure that health risk behaviors specific to women are adequately addressed in the group intervention and to determine the level of health risk to women of the behaviors already included in the Live Long and Prosper group.

Although this group intervention is specifically targeted at a veteran population, there may be other populations who have been exposed to high levels of trauma for which a manualized health promotion group intervention may be beneficial. Research among police officers in the United Kingdom found that prevalence rates of PTSD were six to seven times that of individuals in the community (Green, 2004). Also, a study of firefighters in Germany found high rates of PTSD among this population, with 18% of firefighters exhibiting PTSD symptoms (Wagner, Heinrichs, & Ehlert, 1998). Due to the high rates of PTSD found in these populations, it may be that a revised version of the Live Long and Prosper group treatment specifically focused on police officers or fire fighters would benefit these populations.

Limitations

Although this intervention has sought to be comprehensive, several limitations exist which may affect its implementation or the efficacy of the intervention. Due to the high levels of avoidance found among veterans with chronic PTSD, the developers decided to maintain the expectation of the original inpatient Live Long and Prosper group of mandatory attendance. In an outpatient setting, mandatory attendance at the group may be difficult to sustain or enforce, particularly for those sessions in which group participants do not believe they are at risk. It becomes the responsibility of the group facilitator to reinforce the importance of group attendance in building group cohesion and

reinforce that the insights and experiences of each veteran, no matter what their stage of change for a particular health risk behavior, are useful for the group as a whole. The intervention also requires two facilitators who have received training in the motivation interviewing model, eight ninety-minute sessions, and the use of many workbook exercises and assessment measures. Limited resources in any of these areas may make it difficult to effectively implement the group intervention.

The Live Long and Prosper group is designed to increase motivation for change and promote engagement in positive health practices among veterans diagnosed with PTSD. Although strategies for implementing behavioral change are discussed in each session and examples of ways to change behaviors are provided in the member workbook, the intervention does not include follow-up behavior modification for those veterans who would like to change their behaviors. It is recommended that the group facilitators assess the motivation for change of each veteran and refer them to appropriate groups, short-term psychotherapy, or other appropriate avenues following the group intervention that will assist the veterans in following through on their desires for behavioral change.

The assessment strategy for the Live Long and Prosper group treatment is comprised of pre-existing as well as developer-created assessment instruments. The lack of validation for the developer created instruments is a limitation of the current group treatment and may create difficulties when attempting to study the efficacy of the current protocol with the intended population. In addition, there is currently no scoring system in place for the HBFM, an integral component of any research into the validity of the intervention itself. Currently, only qualitative data can be gleaned from this instrument.

In addition, as of the publication of this dissertation, the intervention has not been validated with the population intended. Further validation of the instruments and pilot testing of the protocol itself are necessary to ensure its usability, user friendliness, and efficacy with the intended population.

Future Research

Psychological assessments are an integral component of this motivational interviewing group treatment. They foster awareness and promote further evaluation of health risk behavior engagement and motivation for change among the group participants, provide information necessary to develop discrepancy and identify commitment to change, assist the group facilitators in monitoring the efficacy of the intervention, and offer a comprehensive method of empirically evaluating the protocol. As such, an important area for future research is the validation of the developer-created assessment instruments. In addition, a comprehensive scoring system for the HBFM needs to be developed which would provide quantitative results of veteran engagement in health risk behaviors.

To determine the ease of usability of the intervention, identify problem areas for improvement, and evaluate the efficacy of the group treatment, pilot testing of the Live Long and Prosper group intervention with outpatient veterans diagnosed with PTSD needs to be undertaken. The results of such testing would assist the developers in further refining the group treatment and improving its usability with the veteran population. In addition, due to the increase in female veterans diagnosed with PTSD who receive treatment within the VA system, it is important that health risks relevant to female

veterans diagnosed with PTSD be researched and the manual set be adapted for use with female as well as male veterans.

The Live Long and Prosper Health Promotion group treatment provides a systematic means to promote positive health practices among veterans and integrate health promotion into the treatment of veterans diagnosed with PTSD. It is a unique manual set that uses motivational interviewing and the transtheoretical model, already common treatment paradigms among substance abuse treatment programs for veterans, to fill a very relevant need in the VA system. The developers hope this protocol will initiate change among veterans diagnosed with PTSD who have poor health practices and prevent the acquisition of new negative health practices. This may, in the long run, increase veteran health, decrease treatment utilization, and increase longevity and quality of life among veterans diagnosed with PTSD.

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APPENDIX A

Narrative of the Empirical Literature

Narrative of the Empirical Literature

A review of the literature was undertaken to establish a need-base for specific health risk behaviors to be included in the proposed “Live Long and Prosper” manualized group treatment for male combat veterans with PTSD. This review focused on sexually transmitted diseases, specifically Hepatitis C and Human Immunodeficiency Virus, substance use disorders, and sleep disturbances. Several computer databases were used to locate relevant literature (PsychINFO, ProQuest databases, PubMed, and Dissertation Abstracts) using specific search terms (Hepatitis C, HIV, combat veterans, PTSD, STDs, substance abuse, sleep disorders, high-risk behaviors) as well as their different variations (e.g. PTSD, posttraumatic stress disorder, alcohol abuse, SUD, sleep problems). Twenty-six empirical studies comprise the literature review for STDs, 20 for SUDs, and 16 for sleep disturbances. The selection criteria limited the articles to quantitative studies comprised of 30 or more male veterans with PTSD. However, the number of participants required for sleep laboratory and psychopharmacological studies was reduced to 15 as the nature of the research methodologies limits the number of potential participants. In addition, due to the paucity of research in the area of HCV in veterans with PTSD, the STD literature review was expanded to include all veterans. The literature supports the assertion that STDs, SUDs, and sleep disturbances pose substantial health-related risks for veterans.

Hepatitis C and Human Immunodeficiency Virus

The literature demonstrates significantly higher rates of sexually transmitted diseases among the veteran population than the normal population. Prevalence rates for HCV vary from 7% - 35% among outpatient veterans (Brau et al., 2005; Cheung, 2000;

Huckans, Blackwell, Harms, & Hauser, 2006; Roselle, Danko, Dralovic, Simbarti & Kizer, 2002) to 42% - 44% among homeless veterans (Cheung, Hanson, Maganti, Keeffe, & Matsui, 2002; Desai, Rosenheck, & Agnello, 2003). In a study of 168 Department of Veterans Affairs sites from 1991-1994, the rates of HCV-positivity increased 285% while the sites only experienced a 5% increase in patients during the same time period (Roselle, Mendenhall, & Danko, 1997). HCV prevalence rates among veterans are particularly striking when compared to rates of HCV in active duty military personnel, which are less than or equal to the prevalence rates for HCV found in the normal population (Hyams et al., 2001). Prevalence rates of HIV infection are also high with estimates of up to 37% among a national survey of veterans (Hoff, Beam-Goulet, & Rosenheck, 1997). These prevalence rates suggest that HCV and HIV are overrepresented in the veteran population.

A relationship between HCV and HIV was also demonstrated in the literature. When HCV/HIV co-morbidity was examined, 2% of HCV-positive veterans were also HIV-positive (Cheung et al., 2002) and 37% of HIV-positive veterans were also HCV-positive (Backus, Boothroyd, & Deyton, 2005). A study of homeless veterans (Cheung et al.) found that among those veterans who had multiple disease infections including HIV, Hepatitis B, and tuberculosis, HCV was found in each case.

Although the rates of HCV and HIV are high for the entire veteran population, they present with greater frequency in those veterans with mental illness (Backus et al., 2005; Nguyen et al., 2002; Yovtcheva, Rifai, Moles, & Van der Linden, 2001). In particular, veterans with PTSD are more likely to be HCV and HIV positive (Hoff et al., 1997; Lim, Cronkite, Goldstein, & Cheung, 2006). Studies have found rates of PTSD

ranging from 20 - 43% among HCV-positive veterans (El-Serag, Kunkik, Richardson, & Rabeneck, 2002; Lehman, & Cheung, 2002; Nguyen et al.). These findings correspond to the significant relationship found between service during the Vietnam era and HCV and HIV infection (Backus et al.; Bini et al., 2005; Desai et al., 2003; Nguyen et al.; Roselle et al., 2002; Seal et al., 2007), suggesting that Vietnam-era combat veterans are at particular risk of acquiring both HCV and HIV.

An examination of the risk factors for HCV and HIV acquisition in veterans suggests relationships between these STDs and specific health risk behaviors including intravenous drug use (IVDU) and alcohol abuse. Significant associations were found between HCV and HIV positivity and IVDU (Brau et al., 2002; Cheung, 2000; Cheung et al., 2002; Conigliaro, Gordon, McGinnis, Rabeneck, & Justice, 2003; Desai et al., 2003). Those veterans who were HCV-positive were more likely to report IVDU (Backus et al., 2005; Brau et al.; Cheung; Cheung et al.) and those with a lifetime history of drug use were 5-7 times more likely to be HCV-positive than those without such history (Desai et al.; El Serag et al., 2002). HCV-positive veterans were also more likely to report alcohol abuse (Backus et al.; Brau et al.) and current hazardous drinking was common among HIV-positive veterans (Conigliaro et al.). Rates of alcohol abuse and dependence range between 27% - 86% among HCV-positive veterans (Brau et al.; El-Serag et al.; Lehman et al., 2002; Lim et al., 2006; Nguyen et al., 2002; Yovtcheva et al., 2001) and up to 36% among HIV-positive veterans (Conigliaro et al.). Those veterans with substance use disorders were significantly more likely to test positive for HCV, HIV, and HCV/HIV (Backus et al.; Hoff et al., 1997; Huckans et al., 2006) and where PTSD and co-morbid

substance use disorders were found, veterans were 11.5 times more likely to be HIV positive (Hoff, 1997).

High-risk sexual behavior is also a risk factor for HCV and HIV infection (Cook et al., 2006; Seal et al., 2007). Alcohol and drug use were related to risky sex behavior in HIV-positive veterans, with intoxication before intercourse positively related to inconsistent condom use (Cook et al., 2006). Ganguly, Lenox, Quiroz, and Sinnott (2002) also found that a majority of veterans did not use condoms despite having sexual relationships with multiple partners. HIV transmission knowledge was also a concern as veterans with PTSD demonstrated inaccurate HIV transmission knowledge (Strauss, Bosworth, Stechuchak, Meador, & Butterfield, 2006).

Substance abuse is not only a risk factor for HCV and HIV disease acquisition, but it impacts HIV disease progression, medication compliance, HCV treatment candidacy and treatment completion, and mortality in veteran populations (Bini et al., 2005; Braithwaite et al., 2005; Conigliaro et al., 2003; Huckans et al., 2006; Johnson, Finney & Moss, 2005; Seal et al., 2007). Conigliaro et al. found that drinking may be associated with poor virologic control, hepatic co-morbidity, and anemia among HIV positive veterans. Decreased virologic control may be related to the temporal and dose response relationship of drinking behavior to poor medication adherence found among HIV positive veterans. Braithwaite et al. found that consumption of alcohol was related to decreased medication adherence for two days following drinking and was particularly poor when quantities of alcohol that met criteria for hazardous drinking were consumed.

Treatment candidacy and completion is also impacted by substance use among HCV and HIV positive veterans. Those veterans with substance use disorders were less

likely to be eligible for HCV treatment (Bini et al., 2005; Huckans et al., 2006) and experienced more adverse events resulting in discontinuation of therapy (Ho et al., 2001). Seal et al. (2007) found no association between IVDU and treatment candidacy, however their findings did support the inverse relationship between alcohol consumption and treatment candidacy and treatment completion found in other studies. Finally, HIV/AIDS status has been found to predict mortality in substance abusing veterans (Johnson et al., 2005).

In addition to those with substance use disorders, those with active psychiatric disorders were less likely to be eligible for HCV treatment (Bini et al., 2005; Huckans et al., 2006). The rates of active psychiatric disorders and/or recent substance use were between 33% - 73% among HCV positive veterans (Backus et al., 2005; El-Serag et al., 2002; Lehman et al., 2002), suggesting that a large portion of the infected veteran population, including those with chronic PTSD, may not be eligible for treatment for HCV infection.

The literature has shown alarmingly high rates of HCV and HIV infection among veterans, with veterans with PTSD at particular risk for infection. Substance abuse or dependence is the number one risk factor for HCV and HIV infection and also negatively impacts disease progression, treatment, and mortality among HCV and HIV positive veterans. HCV and HIV infection, as well as comorbid substance use, poses a substantial health risk for veterans with PTSD. These findings suggest that a treatment that focuses on HCV and HIV disease acquisition, as well as comorbid substance use, could impact the quality of life and longevity of veterans with PTSD.

Substance Use Disorders

Substance use disorders are the most frequent co-occurring diagnoses among veterans with PTSD (Faustman & White, 1989; Hryvniak, 1989; Sutker, Uddo, Brailey, Vasterling, & Errera, 1994). SUDs were found at a rate of 91% among inpatient veterans with PTSD (Boudewyns, Albrecht, Talbert, & Hyer, 1991; Boudewyns, Woods, Hyer, & Albrecht, 1991) and at a rate of 47-68% among treatment-seeking veterans with PTSD (Davidson, Kudler, Saunders, & Smith, 1990). In a representative national sample of veterans with PTSD, 75% had comorbid SUDs (Kulka, Schlenger, & Fairbank, 1990). When substance abusing or dependent veteran populations were examined, 46% of veterans with SUDs had a co-occurring diagnosis of PTSD (McFall, Mackay, & Donovan, 1991). In addition, substance-abusing veterans with PTSD had more severe drug and alcohol problems than substance abusing veterans without PTSD (McFall, Mackay, & Donovan, 1992).

When alcohol and drug use are examined separately, higher rates of alcohol abuse or dependence were found among veterans with PTSD than drug abuse or dependence (Hryvniak, 1989). Lifetime alcohol dependence rates among veterans with PTSD range from 31-85% (Eisen et al., 2004; Kulka et al., 1990; Rozell, McFall, & Malas, 1991; Sutker et al., 1994), which far exceeds lifetime prevalence rates for alcohol dependence in the general male population. Rates of current alcohol abuse or dependence among veterans with PTSD range from 4-68% (Eisen et al.; Kulka et al.; Rozell et al.; Sutker et al.). Although occurring with less frequency, rates of drug abuse or dependence among PTSD veterans remained high. Lifetime drug dependence rates among veterans with PTSD range from 4-60% (Eisen et al.; Kulka et al.; McFall et al., 1992; Rozell et al.;

Sutker et al.) and rates of current drug abuse or dependence range between 1-10% (Eisen et al.; McFall et al.; Rozell et al.; Sutker et al.). These studies demonstrate that both alcohol and drug abuse and dependence are found with distressing frequency among veterans with PTSD.

The high comorbidity rate of PTSD and SUDs among veterans led researchers to hypothesize about the etiological relationship between the two disorders in this population. The literature supports a functional relationship between substance use and PTSD. It suggests that veterans abuse alcohol and drugs to self-medicate against PTSD symptoms (Vaidya & Garfield, 2003). One study found that 37% of veterans with PTSD reported using alcohol or drugs to avoid dealing with trauma memories or feelings associated with the trauma (Roszell et al., 1991). Similarly, McFall et al. (1992) found a positive relationship between alcohol and drug abuse and the occurrence of ideational reexperiencing, physiological arousal, and avoidance/numbing among PTSD veterans. Veterans with PTSD have also reported that alcohol, heroin, benzodiazepines, and marijuana served as effective mediators of PTSD symptoms (Bremner, Southwick, Darnell, & Charney, 1996). Post-treatment studies also support the self-medication hypothesis. Steindl, Yound, Creamer, and Crompton (2003) found that drinking status was significantly associated with PTSD symptoms at follow-up, with unchanged hazardous drinkers experiencing more severe avoidance, numbing and arousal symptoms when compared to new low-risk drinkers. Increased psychiatric symptoms were also significantly greater prior to relapse among those with trauma histories (Norman, Tate, Anderson & Brown, 2007).

Substance abuse in veterans with PTSD has been linked to several health risk behaviors including violence, suicidality, and chronic health problems. In addition, substance use is linked to the acquisition of STDs in veterans and has negative implications for treatment and disease progression in HIV and HCV positive veterans (see *Hepatitis C and Human Immunodeficiency Virus* for review of the literature). Substance abuse was found to contribute significantly to the variance in violence levels among treatment seeking PTSD veterans (McFall, Fontana, Raskind, & Rosenheck, 1999). PTSD also contributed to the prediction of difficulty controlling violent tendencies in veterans seeking substance use treatment (McFall et al., 1991). Among substance using veterans, PTSD was found to contribute significantly to suicidal thoughts (McFall et al., 1991) and remission from suicidality occurred more slowly in veterans with comorbid PTSD and drug dependence (Prince, Risk, Haden, Lewis, & Spitznagel, 2004). Veterans with comorbid substance use disorders and PTSD were also found to have increased rates of chronic health problems, such as musculoskeletal problems (e.g. joint problems), gastrointestinal problems, and cardiovascular problems than those with substance use disorders only (Tate, Norman, McQuaid, & Brown, 2007).

The extraordinary prevalence rates of SUDs among veterans with PTSD and the health risk behaviors that are associated with this comorbid pattern support the need for a program to target substance use and its relationship to health risk behaviors in veterans with PTSD. Additional literature suggests that it may be important to offer treatment to non-combat veterans with PTSD as well. Mixed findings regarding the relationship between substance use disorders and combat experience suggest that both combat and noncombat veterans with PTSD may be susceptible to the development of SUDs. In a

study of non-combat Persian Gulf veterans exposed to trauma, Sutker et al. (1994) found that the first incidence of alcohol or drug dependence among recent war-zone returnees was 11%, compared with 0% in those who remained stateside. Also, postmilitary factors have been found to contribute significantly to the variance in alcohol and drug abuse disorders over and above premilitary and military factors in a population of male veterans with PTSD (Green, Grace, Lindy, Gleser, & Leonard, 1990). These findings suggest that a health promotion group that targets substance use may be useful for veterans with both combat-related and non-combat-related PTSD.

Sleep Disturbances

Sleep disturbances are found with high frequency among veterans with PTSD (Roszell, McFall, & Malas, 1991). Commonly experienced sleep problems include combat and non-combat related nightmares, insomnia, nonrestorative sleep, decreased sleep quantity, and startle or panic-like awakenings. Nightmares are the most prominent sleep disturbance found in veterans with PTSD and are reported with great frequency by this population (Neylan et al., 1998). Frequency rates of nightmares among combat veterans with PTSD range between 65-94% (Jukic, 1999; Leskin, Woodward, Yound, & Sheikh, 2002). Forty percent of veterans with PTSD report avoiding sleep because of the anticipation of troubling thoughts or dreams (Roszell et al.).

The prevalence rates of other sleep disorders in the PTSD veteran population are also high, with 80-100% of a national sample of PTSD veterans reporting insomnia and 61-88% reporting an exaggerated startle response, which may lead to startle or panic-like awakenings (Leskin et al., 2002). In addition, 59-73% of veterans with PTSD report nonrestorative sleep (Mellman, Kulick-bell, Ashlock, & Nolan, 1995). There is also a

higher frequency of body movement and periodic limb movement during sleep among veterans with PTSD when compared to veterans without PTSD (Husain, Miller, & Carwile, 2001; Mellman et al.).

Sleep laboratory studies have been able to provide objective information about sleep disturbances in veterans with PTSD. Sleep efficiency, or the proportion of actual sleep to potential sleep, has been shown to be significantly decreased in veterans with PTSD (Husain et al., 2001; Mellman et al., 1995; Mellman, 1997), confirming veteran self-report data. Veterans with PTSD appear to spend significantly more time awake during sleep and experience more microawakenings than healthy male controls (Mellman et al.). REM sleep is also affected in PTSD veterans, although the direction of the findings is mixed. Engdahl, Eberly, Hurwitz, Mahowald, and Blake (2001) found that PTSD veterans spent more time in REM sleep and had fewer arousals from nonREM sleep than veterans without PTSD. However, laboratory studies by Mellman (1995, 1997) found that PTSD veterans experienced decreased time in REM sleep and increased wake-during-sleep when compared with other clinical or non-clinical samples.

A large proportion of the research on sleep disorders relies on self-report findings. The nightmares reported by PTSD veterans are distinguished from those of veterans without PTSD by their fright content (Husain et al., 2001) and are highly associated with combat experience (Neylan et al., 1998). Veterans with PTSD often recall more dreams and have difficulty returning to sleep after having a nightmare (Inman, 1990). In addition to nightmares, insomnia in veterans with PTSD is characterized by high levels of anxiety, high levels of psychomotor activity, and fear (Inman). PTSD veterans report fear of going to sleep, returning to sleep, fear of the dark, and fear of thoughts of Vietnam (Inman).

Middle of the night awakening and subsequent decrease in hours of sleep are associated with combat nightmares, movement during sleep, and startle or panic-like awakenings (Mellman et al., 1995; Woodward, Arsenault, Murray, & Bliwise, 2000).

The nightmares, insomnia, and nonrestorative sleep that are associated with PTSD in veterans represent a risk to their global clinical status. This is demonstrated by the profusion of psychopharmacological studies aimed at reducing overall PTSD symptom presentation by decreasing the frequency of trauma-related nightmares and sleep latency, and increasing sleep efficiency (Aukst-Margetic, Margetic, Tomic, & Bilic-Prsic, 2004; David, De Faria, & Mellman, 2006; Raskind, Peskind, Hoff, & Hart, 2007; Stein, Kline, & Matloff, 2002). The pharmaceuticals Prazosin, Levomepraomazine, and Risperidone are reported to significantly decrease distressing dreams, increase sleep duration, and decrease nighttime awakenings in veterans with PTSD (Aukst-Margetic et al.; David et al.; Raskind et al.), while Olanzapine was not found to be superior to treatment with a placebo when clinical status was considered (Stein et al.).

Sleep disturbances are common among veterans with PTSD. Trauma-related nightmares are the most prominent sleep disturbance, however high rates of insomnia, nighttime awakenings, and nonrestorative sleep are also found. Sleep efficiency is significantly decreased in this population and is characterized by increased sleep latency and increased microawakenings. Many of these sleep disturbances are characterized by fear related to high levels of anxiety. Current research is focused on psychopharmacological interventions to decrease sleep disturbances in this population.

Conclusion

A comprehensive review of the literature focusing on sexually transmitted diseases, substance abuse disorders, and sleep disturbances among veterans and veterans with PTSD has shown that these problems represent significant health risks for veterans with PTSD. Not only do they occur with high frequency, but they impact multiple areas of life including disease progression, treatment, health, aggression, and suicidality. A treatment protocol designed to decrease incidence of these health risk behaviors in veterans with PTSD may serve to increase longevity and quality of life in this veteran population.

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APPENDIX B

Tables of the Empirical Literature

Table A1

Summary of Articles in Literature Review (N = 62)

Sample Characteristics	Sexually Transmitted Diseases n=26	Substance Abuse n=20	Sleep Disorders n=16	General Outcomes
<p><i>Size:</i></p> <p>(10) 0-50 (11) 51-100 (19) 101-500 (7) 501-1000 (6) 1001-5000 (2) 5001-10,000 (4) 10,001-30,000 (2) 30,000+ (1) 168 sites</p> <p><i>Participants:</i></p> <p>(9) Vietnam Vets (1) Non-Tx Seeking Vets (13) Tx Seeking Vets (2) Homeless Tx Seeking Vets (9) Tx Seeking Vets w/HCV (3) Tx Seeking Vets Tested for HCV (4) Tx Seeking Vets w/SUD (20) Tx Seeking Vets w/PTSD (1) Vets with SUD (1) Vets with Substance Use (1) Vets with PTSD (1) Vets w/Severe Mental Illness (5) Vets Aging Cohorts Study (1) National Survey of Vets (1) Former POWs (1) Refugees with PTSD (2) Civilian Control</p>	<p><i>Type of Study:</i></p> <p>(13) Retrospective Chart Review (6) Prevalence</p> <p><i>Variables:</i></p> <p>(3) HIV and HCV (6) HIV and Alcohol Use (3) HIV and Psychiatric Comorbidity (5) HIV and Risk Factors (2) HCV and IVDU (8) HCV and Psychiatric Comorbidity (8) HCV and Risk Factors</p> <p><i>Analyses:</i></p> <p>(16) Regression Analyses (9) Nonparametric (6) Descriptive</p> <p>(3) T-tests (2) Correlation</p> <p><i>Other Variables:</i></p> <p>(19) Demographics (8) Treatment Considerations (6) Age (5) Virologic Response (3) War Era (2) HIV Knowledge (1) Mortality (1) QOL (1) Social Support</p>	<p><i>Type of Study:</i></p> <p>(2) Retrospective Chart Review (2) Prevalence (2) Longitudinal (5) Review of the Literature</p> <p><i>Variables:</i></p> <p>(10) PTSD and Psychiatric Comorbidity (9) PTSD and Substance Use (1) PTSD and Risk Factors (2) PTSD, SUD, and Psychiatric Comorbidity (2) PTSD, SUD, and Suicidality (1) PTSD, SUD, Violence (1) PTSD, SUD, Personality (1) PTSD, SUD, Health</p> <p><i>Analyses:</i></p> <p>(10) Nonparametric (9) Regression Analyses (6) ANOVA/MANOVA (6) Descriptive (3) Correlation (1) Odds Ratio</p> <p><i>Other Variables:</i></p> <p>(7) Combat Status (7) Demographics (5) Treatment (1) Mortality (1) Relapse (1) War Era</p>	<p><i>Type of Study:</i></p> <p>(4) Pharmacological (4) Sleep Laboratory (2) Retrospective Chart Review (2) Prevalence (1) Cross-sectional</p> <p><i>Variables:</i></p> <p>(10) PTSD and Sleep Disruption (5) PTSD and Nightmares (2) PTSD and REM (1) PTSD and Insomnia (1) PTSD and Major Depression (1) PTSD and RSD</p> <p><i>Analyses:</i></p> <p>(4) T-tests (3) Nonparametric (3) ANOVA/MANOVA (3) Correlation (2) Regression Analyses (1) ANCOVA (1) Descriptive Statistics</p> <p><i>Other Variables:</i></p> <p>(3) Level of Trauma (2) Demographics (2) Drug Efficacy (2) Treatment (1) Age (1) Substance Abuse</p>	<p>Rates of HCV and HIV infection are significantly higher among veterans than the normal population and occur with greater frequency among veterans with PTSD.</p> <p>SUDs are a risk factor for HCV and HIV acquisition and effect disease course.</p> <p>SUDs are the most frequently occurring disorders among veterans with PTSD.</p> <p>Substance abuse in veterans is linked with violence, suicidality, and chronic health problems.</p> <p>Sleep disturbances are found at high frequencies among veterans with PTSD.</p> <p>Common forms of sleep disturbances are nightmares, decreased sleep efficiency, insomnia, and increased sleep latency.</p>

Sexually Transmitted Diseases Literature Table *n*=26

AUTHORS	TITLE	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Backus, L. L., Boothroyd, D., & Deyton, L. R. 2005	HIV, Hepatitis C, and HIV/Hepatitis C Virus Co-infection in Vulnerable Populations	<i>n</i> =18,349 veterans in the VA Immunology Case Registry who received care in the VA in 2002 who had an interpretable HCV result	Enzyme immunoassay antibody test results	Retrospective review. ICD-9 codes used to determine psychiatric diagnoses. Medical diagnoses also discerned by prescribed medication. Analyses: Pearson chi-square test, Wilcoxon rank-sum test	<ul style="list-style-type: none"> • 37% HCV seropositive • HCV seropositive veterans were more likely to report IVDU, alcohol abuse, substance abuse, and to have been diagnosed with mental illness. • Rate of mental health illness was very high in both groups (63.1% HIV, 76.1% HIV/HCV). • Those with HIV/HCV were less likely to develop AIDS but more likely to die.
Bini, E. J., Brau, N., Currie, S., Shen, H., Anand, B. S., Hu, K., et al. 2005	Prospective Multicenter Study of Eligibility for Antiviral Therapy Among 4,804 US Veterans with Chronic Hepatitis C Virus Infection	<i>n</i> =4,084 treatment-seeking veterans who had a positive HCV antibody test at 24 VA Medical Centers	COBAS Amplicor HCV Monitor Test version 2.0 or the COBAS Amplicor HCV Test version 2.0 to test HCV RNA	Interviewed to obtain demographic, clinical and risk factor information. Evaluated for HCV therapy using standardized criteria. Eligible veterans were treated with Rebetron for up to 24 or 48 weeks. Analyses: t-tests or Wilcoxon, chi-square test, regression models, odds ratios	<ul style="list-style-type: none"> • 32.2% of candidates were eligible for HCV treatment. The most common reasons for exclusion were on-going or recent substance abuse, active psychiatric disease, and comorbid medical disease. • Of those eligible for treatment, 76.2% agreed to receive treatment. • Factors associated with increased odds of declining therapy: 50 years of age or older, having more than 50 lifetime sexual partners.
Braithwaite, R. S., McGinnis, K. A., Conigliaro, J., Maisto, S. A., Crystal, S., Day, N., et al. 2005	A Temporal and Dose-Response Association Between Alcohol Consumption and Medication Adherence Among Veterans in Care	<i>n</i> =2,352 HIV+ and matched HIV- veterans participating in the Veterans Aging Cohort Study; <i>n</i> =99 veterans who reported widely varying levels of alcohol consumption during the 30-day period for dose-response analyses selected out from larger sample for analyses	Alcohol Timeline Follow Back; Timeline Follow Back Modified for Adherence; PHQ-9 for depression	Cross-sectional study. Telephone surveyed for demographics, drug use, and homelessness. Analyses: regression analyses	<ul style="list-style-type: none"> • A strong temporal and dose-response association was found between alcohol consumption and poor adherence and dose-response. • Consumption on a particular day was associated with decreased adherence to medication on that day and for two days immediately following that day. • A relationship between poor adherence and quantity of alcohol consumed was found, with particularly poor adherence when quantities of alcohol were consumed that met the criteria for hazardous drinking.

AUTHORS	TITLE	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Brau, N., Bini, E. J., Shahidi, A., Aytaman, A. I., Xiao, P., Stancic, S., et al. 2002	Prevalence of Hepatitis C and Coinfection With HIV Among United States Veterans in the New York/New Jersey Veterans Integrated Service Network	n=1,098 patients undergoing phlebotomy at six Veterans Affairs Medical Centers in the NYC metropolitan area	Third generation enzyme immunoassay; HCV RNA and HCV recombinant immunoblot assay antibody testing; HCV viral load, HCV genotype, HIV antibodies testing; Study-generated questionnaire for demographics and HCV risk factors	1-day cross-sectional survey. All veterans having blood drawn on a particular day were asked to complete the questionnaire and have blood additionally analyzed for HCV. Analyses: Student's t test, chi-square, regression analyses	<ul style="list-style-type: none"> • 10.6% HCV positivity • Independent risk factors for HCV infection: injection drug use, blood exposure during combat, alcohol abuse, and service during Vietnam. • 53.4% reported alcohol abuse. • 24.8% HCV/HIV co-infection • Independent risk factor for HIV coinfection: age (<50 years). • Rates of anti-HCV positive were significantly higher than that of the general population. • 56% of HCV-positive patients were unaware of their diagnosis.
Cheung, R. C. 2000	Epidemiology of Hepatitis C Virus Infection in American Veterans	n=8,558 veterans who were tested for anti-HCV serology	Anti-HCV serology - second generation ELISA; Commercial immunoassays for Hepatitis B surface antigen; Beckman or Hitachi automated chemistry analyzers; Author-generated self-report questionnaire completed by primary or referring physician	Risk factors for HCV were reported by primary or referring physician. Analyses: descriptive statistics	<ul style="list-style-type: none"> • 35% HCV prevalence • Authors estimate a true prevalence rate of 7-35% . • More than 80% of those HCV positive were between the ages of 41 and 60 with only 0.2% between the ages of 21 and 3. • IVDU was the most common risk factor (81%).
Cheung, R. C., Hanson, A. K., Maganti, K., Keefe, E. B., & Matsui, S. M. 2002	Viral Hepatitis and Other Infectious Diseases in a Homeless Population	n=597 homeless veterans admitted to inpatient treatment	Author-generated self-report questionnaire; Tuberculin skin test and chest radiograph if determined necessary; Enzyme-linked immunosorbent assay using commercial kits for antibody to HCV; Hepatitis B surface antigen for chronic HBV infection; Hepatitis B surface antigen for past HBV infection; Antibody to HIV 1/2.	Interview conducted by experienced interviewers and adapted from an established instrument to confirm self-report measures. Analyses: regression analyses	<ul style="list-style-type: none"> • Prevalence rates: HCV (41.7%), PPD (20.6%), HIV (1.8%), HBsAg (1.2%) • 52.6% tested positive for one of four diseases with majority presenting with only one disease. • In cases with multiple disease presentations, HCV was found in each case. • IVDU was significantly associated with HCV infection, past HBV infection and positive PPD. • HCV was an independent risk factor for HBV infection. • Anti-HBV positivity and IVDU were independent risk factors for anti-HCV positivity.

AUTHORS	TITLE	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Conigliaro, J., Gordon, A. J., McGinnis, K. A., Rabeneck, L., & Justice, A., 2003	How Harmful Is Hazardous Alcohol Use and Abuse in HIV Infection: Do Health Care Providers Know Who Is at Risk	<i>n</i> =881 treatment-seeking veterans with HIV infection from the Veterans Aging Cohort 3-Site Study	AUDIT	Retrospective chart review and longitudinal study. ICD-9 codes for diagnoses of alcohol abuse of dependence and laboratory variables collected from VA electronic medical records. Surveyed clients at baseline and 12-month follow up. Health care providers were surveyed for their perception of veteran alcohol use. Analyses: chi-square, t-tests, regression analyses	<ul style="list-style-type: none"> • 36% of HIV+ veterans reported current hazardous drinking (AUDIT score of ≥ 8 or binge drinking in the past 12 months) . • Hazardous drinking was associated with younger age and current drug use. • 27% had at least 1 ICD-9 alcohol-related diagnosis in the last 5 years. • ICD-9 alcohol-related diagnosis was associated with higher transaminase levels, anemia and elevated mean corpuscular volume. • Health care providers' report of current drinking and current hazardous drinking were poor.
Cook, R. L., McGinnis, K. A., Kraemer, K. L., Gordon, A. J., Conigliaro, J. Maisto, S. A., et al. 2006	Intoxication Before Intercourse and Risky Sexual Behavior in Male Veterans With and Without Human Immunodeficiency Virus Infection	<i>n</i> =1,719 veterans enrolled in the Veterans Aging Cohort 5-Site Feasibility Study (<i>n</i> =1009 HIV+, <i>n</i> =710 HIV-)	Study-generated survey for demographics, current depression, sexual behaviors, drug and alcohol use; AUDIT; DAST	Cross-sectional study. Open-ended questions assessing sexual behaviors and condom use. Analyses: chi square, regression analyses	<ul style="list-style-type: none"> • 1 in 10 veterans regardless of HIV status reported 2 or more sexual partners with inconsistent condom use in the past year. • Intoxication before intercourse was significantly associated with inconsistent condom use, 2 or more sexual partners and inconsistent condom use, and having 5 or more sexual partners in the last year among HIV+ veterans.
Desai, R. A., Rosenheck, R. A., & Agnello, V. 2003	Prevalence of Hepatitis C Virus Infection in a Sample of Homeless Veterans	<i>n</i> =418 treatment-seeking homeless veterans	Abbott HCV EIA 2.0 test for HCV antibodies; PCR assay test for HCV infection in sera; Self-report data forms collected on admission	Compared profile to that of patients enrolled in other DCHV programs throughout the country. Analyses: regression analyses	<ul style="list-style-type: none"> • 44.02% HCV positive prevalence rate with significant association to age (40-50) and to service era (51.35 Vietnam era, 42.21 post-Vietnam era). • Homeless population was 10 times more likely to have HCV positivity than the US population of same age group. • Those veterans who served during the Vietnam era were 4.66 times more likely to be HCV positive. • Those veterans with a lifetime history of drug abuse were 6.86 times more likely to be HCV positive.

AUTHORS	TITLE	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
El-Serag, H. B., Kunik, M., Richardson, P., & Rabeneck, L. 2002	Psychiatric Disorders Among Veterans with Hepatitis C Infection	<i>n</i> =33, 824 hospitalized HCV-infected veterans; <i>n</i> =22,342 HCV-infected Vietnam veterans compared with <i>n</i> =43, 267 non-HCV-infected Vietnam veterans	Data collection from chart including ICD-9 codes and demographics	Retrospective chart review. Analyses: univariate analyses, chi square, t tests, regression analyses	<ul style="list-style-type: none"> 85% of HCV+ veterans had at least one past or present psychiatric, drug-use, or alcohol-use disorder diagnosis. 1/3 of HCV+ veterans had active psychiatric or drug-use disorders. Only 6.5% had a psychiatric disorder without a drug or an alcohol use disorder. 42.8 % prevalence of PTSD among HCV+ veterans. Among Vietnam-era veterans, there was a 4 fold increase in alcohol use, 5 fold increase in drug use, and 2 fold increase in suicide attempts when comparing HCV+ and HCV- veterans.
Ganguly, R., Lenox, B., Quiroz, E., & Sinnott, J. 2002	HIV Infection, Risk Factors, and Testing in a Veteran Population	<i>n</i> =152 treatment-seeking veterans	34-item survey questionnaire instrument generated for the study	Cross-sectional survey study. Self-report measures administered onsite with a 45% return rate. Analyses: frequency analysis, cross-tabulations and chi square analysis, correlational analyses, regression analyses	<ul style="list-style-type: none"> 53.3% of veterans sampled had high-risk factors. More younger veterans (age<50) had risk factors than older veterans. Most of veterans believed that condom use prevented HIV transmission, but 65.8% of veterans did not use condoms. Resistance to condom use was related to age, with those <50 years old more willing to use condoms. None of the veterans reporting multiple sexual partners in the last six months used a condom consistently.
Ho, S. B., Nguyen, H., Tetrick, L. L., Opitz, G. A., Basara, M. L., & Dieperink, E. 2001	Influence of Psychiatric Diagnoses on Interferon- Treatment for Chronic Hepatitis C in a Veteran Population	<i>n</i> =35 veterans with chronic HCV who were eligible for IFN treatment	Complete medical and psychiatric history at beginning of protocol; HCV RNA testing throughout treatment protocol	Retrospective review of medical records for psychiatric diagnoses. Participants were enrolled in a high dose IFN- treatment protocol. All those on anti- depressant or anti-psychotic medications during therapy were followed by psychiatric service during treatment. Analyses: contingency table and chi square analysis	<ul style="list-style-type: none"> HCV+ veterans with an established diagnoses of psychiatric conditions prior to treatment experienced a >2 fold frequency of major adverse events resulting in discontinuation of therapy or interventions when compared with patients without these diagnoses. Four of the five HCV+ veterans diagnosed with PTSD experienced a major adverse event; however, the <i>n</i> is too small to make definitive conclusion.

AUTHORS	TITLE	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Hoff, R. A., Beam-Goulet, J., & Rosenheck, R. A. 1997	Mental Disorder as a Risk Factor for Human Immunodeficiency Virus Infection in a Sample of Veterans	<i>n</i> =11,645 veterans from the National Survey of Veterans	Study-generated telephone interview	Random digit dialing of US and Puerto Rican numbers to a random sample of veterans from the VA Compensation and Pension Files, VA patient treatment files, and outpatient VA clinic files. Analyses: regression analyses	<ul style="list-style-type: none"> • 37% of sample were HIV+ • 1.44% of those with a diagnosis of drug or alcohol abuse were HIV+. • 1.03% of those with PTSD were HIV+ • 26% of those with PTSD had co- morbid drug or alcohol abuse. • 40.52% of those with PTSD had a co- morbid mental disorder other than substance abuse. • Those with substance use were 4.9 times more likely to be HIV+ and those with PTSD were 3.17 times more likely to be HIV+. • Those with PTSD alone were not at increased risk but those with substance abuse were 2.43 times more likely to be HIV+ and those with both were 11.50 times more likely to be HIV+.
Huckans, M. S., Blackwell, A. D., Harms, T. A., & Hauser, P. 2006	Management of Hepatitis C Disease Among VA Patients With Schizophrenia and Substance Use Disorders	<i>n</i> =293,445 treatment- seeking veterans	Used database to collect demographic data, psychiatric diagnoses, HCV laboratory results, and prescriptions.	Retrospective data base study. Analyses: descriptive statistics, odds ratios	<ul style="list-style-type: none"> • 11.4% veterans tested HCV+ • High risk groups were significantly more likely to test HCV antibody positive. • Veterans in high-risk groups were less likely to receive IFN therapy if they were in the substance disorders or co- occurring disorders groups.
Hyams, K. C., Riddle, J., Rubertone, M., Trump, D., Alter, M. J., Cruess, D. F., et al. 2001.	Prevalence and Incidence of Hepatitis C Virus Infection in the US Military: A Seroepidemiologic Survey of 21,000 troops.	<i>n</i> =21,000 military personnel (<i>n</i> =10,000 active duty, <i>n</i> =2,000 active duty inducted in 2007, <i>n</i> =2000 reservists, <i>n</i> =1000 active duty who served in Vietnam, <i>n</i> = 2000 active duty who retired in 1997 after 20+ years of service, <i>n</i> =2000 women on active duty, <i>n</i> =1000 non-white/non- African American active duty, <i>n</i> =1000 active duty personnel with health care job classification)	Second generation enzyme immunoassay and recombinant immunoblot assay (RIBA) to determine HCV-positivity; HCV RNA testing	Proportion of each group was chosen in proportion to number of individuals from each branch of the military. Serum samples from the Department of Defense Serum Repository were used for HCV analyses. Analyses: chi square, t-tests, regression analyses	<ul style="list-style-type: none"> • HCV prevalence rates were substantially lower than those of the civilian population less than 40 years of age (0.1% among those >35 years; 1.1% among those 35-39 years). • Prevalence rates of older personnel were comparable to the civilian population (3.0% among those 40+ years). • Potentially high risk groups such as health care personnel and Vietnam era veterans did not have an increased risk of infection.

AUTHORS	TITLE	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Johnson, J. E., Finney, J. W., & Moss, R. H. 2005	Predictors of 5-year Mortality Following Inpatient/Residential Group Treatment for Substance Use Disorders	<i>n</i> =3,698 male SUD treatment inpatient veterans	Intake Information Form (<i>n</i> =3698); Discharge Information Form (<i>n</i> =3331); Follow-up Information Form (<i>n</i> =3018)	Administered questionnaires at intake, discharge, and 12- months post-discharge. Used VA Beneficiary Identification and Record Locator System database to verify and ascertain death status for those who could not be reached for follow-up. Analyses: regression analyses	<ul style="list-style-type: none"> HIV/AIDS status was the strongest predictor of mortality in the sample. Those who were HIV-, who consumed less than 3oz of ethanol on non-drinking days, who were employed, and who were partnered 1 year after discharge had a dramatically decreased risk of death within the next 5 years (5%) than those who were not (56%).
Justice, A. C., McGinnis, K. A., Atkinson, J. H., Heaton, R. K., Young, C., Sadek, J., et al. 2004	Psychiatric Neurocognitive Disorders Among HIV-positive and Negative Veterans in Care: Veterans Aging Cohort Five-Site Study	<i>n</i> =50 veterans (convenience sample) who were part of the Veterans Aging Cohort 5-site Study who consented to participate in formal NCP testing; (<i>n</i> =28 HIV+, <i>n</i> =22 HIV-)	Composite International Diagnostic Interview; WRAT-3; WAIS III (Digit Symbol, Symbol Search, Letter-Number Sequencing); Trail Making Test Part A & B; Paced Auditory Serial Addition Task; Controlled Oral Word Association; Hopkins Verbal Learning Test - Revised (Total Trials 1-3 & Delayed Recall); Brief Visuospatial Memory Test- Revised (Total Trials 1-3 & Delayed Recall); Wisconsin Card Sorting Test; Grooved Pegboard (Dominant and Non-Dominant Hand); Patient Health Questionnaire; AUDIT, DAST	Alcohol and drug use confounds were determined by interviewer based on interview, ICD-9 diagnoses, and self-report screening measures. Blind clinical rating to characterize the presence of global NCP impairments. Analyses: kappa statistics, chi square tests, regression analyses	<ul style="list-style-type: none"> Older HIV+ veterans demonstrate higher rates of depressive symptoms, alcohol abuse or dependence, and drug abuse or dependence than age-stratified HIV- veterans.

AUTHORS	TITLE	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Lehman, C. L., & Cheung, R. C. 2002	Depression, Anxiety, Post-Traumatic Stress, and Alcohol-Related Problems Among Veterans With Chronic Hepatitis C	<i>n</i> =120 veterans with HCV referred for evaluation and treatment	Beck Depression Inventory; Anxiety Sensitivity Index; Post-Traumatic Stress Disorder Checklist; AUDIT	<p>Veterans underwent a physical exam, psychiatric interview, and self-report medical history was collected. Retrospective medical chart review for preexisting psychiatric diagnosis. The Post-Traumatic Stress Disorder Check List was only administered to those who reported history of significant trauma. The AUDIT was only administered to those who admitted alcohol use in the last 12 months.</p> <p>Analyses: independent t tests, Pearson R correlations</p>	<ul style="list-style-type: none"> • 49.4% of HCV+ veterans had a history of non-substance abuse psychiatric disorders and 81% had a history of an alcohol use disorder. • Clinically significant levels of PTSD (20.8%) and alcohol-related problems (26.7%) were observed. • Positive correlations were found between PTSD symptoms and alcohol use problems. • Coexisting unstable psychiatric disorders and/or recent substance use was found in 73.4% of the veterans.
Lim, J. K., Cronkite, R., Goldstein, M. K., & Cheung, R. C. 2006	The Impact of Chronic Hepatitis C and Comorbid Psychiatric Illness on Health-related Quality of Life	<i>n</i> =864 veterans who participated in the 1999 Large Health Survey and had been tested for anti-HCV	SF-36V (a self-administered HRQoL questionnaire)	<p>ICD-9CM psychiatric diagnoses were determined from VHA administrative databases.</p> <p>Analyses: chi square tests, t tests, regression analyses</p>	<ul style="list-style-type: none"> • Anti-HCV+ veterans were more likely to be younger, male, nonwhite, and unmarried. • Anti-HCV+ veterans were more likely to have at least 1 of 6 psychiatric diagnoses, including PTSD (27.9%), or alcohol dependence (43.8%). • Health related quality of life was significantly lower for anti-HCV+ veterans on role emotional, mental health, general health, and social functioning. Those with PTSD experienced additional impairments.

AUTHORS	TITLE	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Nguyen, H. A., Miller, A. I., Dieperink, E., Willenbring, M. L., Tetrick, L. L., et al. 2002	Spectrum of Disease in U.S. Veteran Patients with Hepatitis C	<i>n</i> =206 veterans with HCV who met eligibility criteria for interferon a -2b therapy	Qualitative polymerase chain reaction assays (PCR) for HCV; Liver biopsies;	Review of medical records for ICD-9 codes and treatment for alcohol use history and psychiatric diagnoses. Treatment included Interferon a-2b monotherapy or a combination therapy of interferon and ribavirin. PCR performed before treatment initiation, at 3-6 months, at the end of 6-12 months, and 6 months after the end of treatment. Analyses: contingency tables, chi square analyses	<ul style="list-style-type: none"> • Psychiatric illnesses were present in 60% of patients, with the most common diagnosis being depression or PTSD. • A history of alcohol use or dependence was found in 80% and a history of IVDU or cocaine use in 78% of veterans sampled. • A majority of HCV+ veterans sampled (77%) served during the Vietnam era and 66% had a history of IVDU. • Significant liver fibrosis is common in the patients with psychiatric diagnoses when they are initially evaluated for treatment. . The rates of liver fibrosis seen are higher than those in the general population.
Roselle, G. A., Danko, L. H., Kralovic, S. M., Simbarti, L. A., & Kizer, K. W. 2002	National Hepatitis C Surveillance Day in the Veterans Health Administration of the Department of Veterans Affairs	<i>n</i> =26,102 treatment seeking veterans from 138 of 142 reporting sites	Diversity of serologic methods for HCV- antibodies	VHA patients having lab studies performed were asked to undergo HCVAb testing at 142 VHA sites. Data were collected at each site and extracted from VHA electronic surveillance systems and sent to the Austin Automation Center. Analyses: t-tests, odds ratios, regression analyses	<ul style="list-style-type: none"> • HCVAb prevalence rates of 6.6% were found. • Those who were HCVAb seropositive were likely to be Vietnam era veterans.
Roselle, G. A., Mendenhall, C. L., & Danko, L. H. 1997	A Four-Year Review of Patients with Hepatitis C Antibody in Department of Veterans Affairs Facilities	<i>n</i> =168 Department of Veterans Affairs sites	Census instrument asking for the number of patients who tested positive in the designated fiscal year (from 1991- 1994), also included common causes of infectious hepatitis as well as emerging pathogens	Data reviewed and analyzed using Quatro Pro for Windows. Analyses: correlational statistics	<ul style="list-style-type: none"> • Increase of 285% in positive tests for HCV antibody from 1991-1994 among client population that only increased 4.87% over the four years.

AUTHORS	TITLE	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Seal, K. H., Currie, S. L., Shen, H., Anand, B. S., Bini, E. J., Brau, N., et al. 2007	Hepatitis C Treatment Candidacy and Outcomes Among 4318 US Veterans with Chronic Hepatitis C Virus Infection	n=4,462 treatment-seeking veterans from 24 VA medical centers	Study-generated questionnaire including sociodemographics and drug and sexual risk behavior	Clinical assessments including detailed medical and mental health history and laboratory tests were done to determine treatment candidacy using VA HCV Treatment Recommendations. Treatment with Rebetron for up to 24-28 weeks. Veterans returned for follow-up at week 1, 2 and months 1, 3, 6, 9, and 12 to monitor treatment compliance, physical and psychiatric side effects, and viral response. Analyses: regression analyses	<ul style="list-style-type: none"> 61% of those evaluated for HCV treatment reported a history of IVDU and were significantly more likely to be Vietnam-era veterans who drink more than 3 alcoholic drinks a day in the last year, engage in high risk sexual behavior, and are HIV seropositive. IVDU was not significantly associated with HCV treatment candidacy, treatment acceptance, early discontinuation of therapy, or treatment response.
Srauss, J. L., Bosworth, H. B., Stechuchak, K. M., Meador, K. M., & Butterfield, M. I. 2006	Knowledge and Risks of Human Immunodeficiency Virus Transmission among Veterans with Severe Mental Illness	n=353 psychiatric inpatient veterans (45% Schizophrenia, 16% Bipolar I, 39% PTSD)	Standardized semi-structured assessment interview; select items from AIDS Risk Inventory; Dartmouth Assessment of Lifestyle Instrument	Interview conducted by experienced interviewers and adapted from an established instrument. Review of medical records and psychiatric records and current admission records for diagnoses. Analyses: regression analyses	<ul style="list-style-type: none"> More than 40% of participants answered at least one AIDS related knowledge question incorrectly. Most common incorrect answers were: "Most people become sick quickly after getting the AIDS virus" (31.4%) and "People who can give you the AIDS virus always look sick" (15.9%). Inaccurate HIV knowledge was not associated with clinical diagnosis.
Szerlip, M. A., Desalvo, K. B., & Szerlip, H. M. 2005	Predictors of HIV- Infection in Older Adults	n=53 HIV+ veterans and n=106 HIV- matched controls	Retrospective chart review	Retrospective chart review for potential HIV predictors HIV risk behaviors, history of diseases associated with HIV risk or infection and routine laboratory values, non-HIV related comorbid diseases requiring chronic care, and substance abuse history. Analyses: chi-square analyses	<ul style="list-style-type: none"> HIV+ veterans exhibited significantly more alcohol abuse than HIV- veterans. HIV+ veterans were more likely to have a history of sexually transmitted diseases such as syphilis, gonorrhea, Chlamydia or herpes and were more likely to test VDRL positive, have previous HBV exposure, and have a history of alcohol abuse.

AUTHORS	TITLE	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Yovtcheva, S. P., Rifai, M. A., Moles, J. K., & Van der Linden, B. J. 2001	Psychiatric Comorbidity Among Hepatitis C- Positive Patients	<i>n</i> =306 HCV+ veterans	Retrospective chart review	Retrospective chart review for demographics and psychiatric disorders. Symptoms in medical records compared with DSM-IV criteria to confirm diagnoses. Analyses: descriptive statistics	<ul style="list-style-type: none"> • Prevalence rates of a variety of psychiatric disorders were higher in HCV+ veterans than the general population. • Alcohol use disorders were the most common (86%) followed by polysubstance use (60%) and IVDU (28%). PTSD was found in 19% of the sample.

Substance Use Disorders Literature Table n=20

AUTHORS	STUDY	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Boudewyns, P. A., Albrecht, J. W., Talbert, F. S., & Hyer, L. A. 1991	Comorbidity and Treatment Outcome of Inpatients with Chronic Combat-related PTSD	n=102 inpatient male Vietnam combat veterans with PTSD	Diagnostic Interview Schedule (computerized version)	Psychiatric rehospitalization data collected from record review. Analyses: chi square analyses	<ul style="list-style-type: none"> All participants exhibited the presence or history of one co-morbid Axis I disorder. 91% exhibited lifetime history of alcohol, drug, or mixed alcohol and drug abuse or dependence.
Boudewyns, P. A., Woods, M. G., Hyer, L., & Albrecht, J. W. 1991	Chronic Combat-related PTSD and Concurrent Substance Abuse: Implications for Treatment of this Frequent 'Dual Diagnosis'	n=102 inpatient male Vietnam combat veterans with PTSD	Diagnostic Interview Schedule (computerized version)	PTSD was determined by a Diagnostic Interview Schedule and independent diagnosis by the unit staff. Analyses: chi square analyses	<ul style="list-style-type: none"> 91.2% of veterans had at least a lifetime diagnosis of some form of substance abuse/dependence. 32% admitted to drug/alcohol use in the last 6 months. A strong connection between substance abuse/use and stress was noted. Those veterans with a diagnosis of alcohol abuse/dependence in last year were less likely to complete the PTSD treatment program.
Bremner, J. D., Southwick, S. M., Darnell, A., & Charney, D. S. 1996	Chronic PTSD in Vietnam Combat Veterans: Course of Illness and Substance Abuse	n=61 treatment-seeking combat veterans with combat-related PTSD	Mississippi Scale for Combat-Related Posttraumatic Stress Disorder; Combat Exposure Scale; Longitudinal History for Vietnam Veterans Interview; Structured Clinical Interview for PTSD from DSM-III-R; Addiction Severity Index Interview; Author-generated assessment for stressful life events	Record review for history of PTSD treatment and hospitalizations. Analyses: ANOVA, correlations, t tests	<ul style="list-style-type: none"> PTSD symptoms were noted to plateau, become chronic, and gradually increase within a few years of the war. The course of alcohol and substance abuse followed a pattern similar to that of PTSD in the period during and immediately following the war. Veterans reported that alcohol, heroin, marijuana, opiates, and benzodiazepines were beneficial in mitigating their symptoms of PTSD.
Davidson, J, Kudler, H., Saunders, W., & Smith, R. 1990	Symptom and Comorbidity Patterns in World War II and Vietnam Veterans with Posttraumatic Stress Disorder	n=44 treatment-seeking male veterans with PTSD (19 WWII, 25 Vietnam)	Hamilton Depression and Anxiety Scale; Newcastle Index; Clinical Global Impression of Severity of Illness; Impact of Events Scale; Symptom Checklist-90; SI-PTSD; Schedule for Affective Disorders and Schizophrenia	Patients were assessed at baseline by a physician. Baseline ratings were taken after the patients had been free of medication for at least 10 days. Analyses: chi-square tests	<ul style="list-style-type: none"> Vietnam veterans appeared more symptomatic and more severely affected with respect to observed depression and PTSD symptomatology. Assessment showed a high frequency of alcoholism (47% WWII, 68% VN). Alcoholism preceded or occurred at the same time as PTSD in Vietnam veterans but followed PTSD symptoms in WWII veterans.

AUTHORS	STUDY	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Eisen, S. A., Griffith, K. H., Xian, H., Scherrer, J. F., Fischer, I. D., Chantarujikapong, S. et al. 2004	Lifetime and 12-month Prevalence of Psychiatric Disorders in 8169 Male Vietnam War Era Veterans	<i>n</i> =8,169 male Vietnam era veterans	National Institute of Mental Health Diagnostic Interview Schedule	Instrument administered by telephone using a computerized version of the DIS-III-R. Analyses: odds ratios, descriptive statistics	<ul style="list-style-type: none"> 55% exhibited a lifetime prevalence and 17% had a 12-month history of alcohol abuse and /or depression. 10.2% exhibited a lifetime history and 1.3% had a 12-month history of illicit drug abuse and/or dependence.
Faustman, W. O., & White, P. A. 1989	Diagnostic and Psychopharmacological Treatment Characteristics of 536 Inpatients with Posttraumatic Stress Disorder	<i>n</i> =536 male veterans with PTSD or provisional diagnosis of PTSD (<i>n</i> =139 from Psychiatric Ward [PW] and <i>n</i> =397 Stress Disorder Program [SDP])	Discharge Summaries	Retrospective chart review; 8000 records from inpatient psychiatric services were reviewed and 536 veterans with PTSD or provisional PTSD were identified. The 536 PTSD veterans were rated based on demographics, discharge diagnosis, alcohol and/or substance abuse, and psychotropic medications. Analyses: Descriptive statistics; separate data analyses were performed for the PW and SDP groups.	<ul style="list-style-type: none"> Alcohol abuse (23.3%) and alcohol dependence (13.1%) were the most frequent concomitant diagnoses found with PTSD. 18% of the veterans were found to have an alcohol abuse history that was not represented by an Axis I diagnosis in their charts. 56% of the SDP and 36% of the PW chart summaries noted current and/or remote history of maladaptive alcohol use or drug use.
Green, B. L., Grace, M. C., Lindy, J. D., Gleser, G. C., & Leonard, A. L. 1990	Risk factors for PTSD and Other Diagnoses in a General Sample of Vietnam Veterans	<i>n</i> =200 male veterans (1/3 from clinical sources and 2/3 non-treatment seeking)	Schedule of Affective Disorders and Schizophrenia Lifetime Version; 6-point scale of Psychosocial Adjustment in Adolescence; SADS:L; Wilson and Krauss Combat Experience and Specific Stressor Questionnaires (modified); 6-item questionnaire assessing help-seeking behavior; Author-generated PTSD Scale	3 1/2 hour interviews Analyses: regression analyses	<ul style="list-style-type: none"> Premilitary factors contributed 9% to the prediction of PTSD; however military factors played a larger role, accounting for 19% of the variance over and above premilitary factors. Post-military factors accounted for an additional 12% of the variance over and above both premilitary and military factors and explained significant variance in the diagnosis of alcohol and drug abuse. The strongest predictor of PTSD was exposure to grotesque death.

AUTHORS	STUDY	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Hryvniak, M. R. 1989	Concurrent Psychiatric Illness in Inpatients with Post-traumatic Stress Disorder	<i>n</i> =374 inpatient veterans in general psychiatry ward	Diagnostic Interview	Diagnoses made using DSM-III and DSM-III-R criteria, by ongoing observation, and appropriate review of hospital records, collaboration from family members, consultation with previous treating physicians, and assessment with psychological testing. Analyses: chi-square	<ul style="list-style-type: none"> • Mean number of diagnoses for the PTSD group was 2.9, compared with 1.4 in non-PTSD group. • Concurrent diagnoses most often associated with PTSD were alcohol abuse (42.9%), substance use and depression (36.5%). • Alcohol abuse occurred significantly more frequently among the PTSD group.
Johnson, D. R., Fontana, A., Lubin, H., Corn, B., & Rosenheck, R. 2004	Long-term Course of Treatment Seeking Vietnam Veterans with Posttraumatic Stress Disorder: Mortality, Clinical Condition, and Life Satisfaction	<i>n</i> =51 inpatient treatment-seeking male veterans with PTSD	Mississippi PTSD Scale; War Stress Interview Follow-up Version; Clinician Administered PTSD Scale; Combat Exposure Scale;	6-year longitudinal study with assessment at admission, 18 months, and 6 years. Combat experience was confirmed by review of military files. Veterans were questioned about experience with and frequency of 11 categories of stressful life events at 6 year follow-up, were asked to rate 10 dimensions of functioning at 3 time periods, and were asked to rate the degree of impact of treatment program on same 10 dimensions. Analyses: ANOVA, regression analyses, t-tests	<ul style="list-style-type: none"> • There was a 17% mortality rate over 6 years. This rate is 5 times higher than the expected rate among American men in this age range. • More convictions, more medical problems, greater need for help with drug abuse, and fewer employers since military discharge were significantly associated with veteran death. • Most of causes of death appear to be associated with either self-destructive or high-risk behavior.
Kulka, R. A., Schlenger, W. E., & Fairbank, J. A. 1990	Trauma and the Vietnam War Generation: Report of Findings from the National Vietnam Veterans Readjustment Study	<i>n</i> =1200 male Vietnam theatre veterans, <i>n</i> =412 male Vietnam era veterans, <i>n</i> =450 male civilian comparison subjects from the NVVRS	Mississippi Combat-Related PTSD Scale; MMPI; Structured Clinical Interview for the DSM-III	Connected to veterans via telephone. Analyses: unable to determine.	<ul style="list-style-type: none"> • Male Vietnam theatre veterans had high levels of lifetime alcohol dependence or abuse (40%) when compared with civilian males (25%). • 6% lifetime drug abuse rates for male Vietnam theatre veterans. • Almost three-fourths of veterans with PTSD had a lifetime alcohol abuse or dependence disorder, and 22% had those disorders currently.

AUTHORS	STUDY	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
McFall, M. E., Mackay, P. A., & Donovan, D. M. 1992	Combat-related PTSD and Severity of Substance Abuse in Vietnam Veterans	<i>n</i> =108 treatment-seeking Vietnam-theatre veterans and <i>n</i> =151 treatment-seeking Vietnam-era veterans	Revised Combat Exposure Scale; Mississippi Scale for Combat-Related PTSD; Michigan Alcohol Screening Test; DAST	3-hour orientation at intake to Addictions Treatment Center during which time the battery of assessments was administered. Demographic data, including military history variables, were obtained from the self-report version of the Addiction Severity Index. Analyses: t-tests, chi-square, correlations, regression analyses	<ul style="list-style-type: none"> 92% of total veterans presented with alcohol-abuse disorder, 60% with a drug-abuse disorder, and 53% with both alcohol and drug abuse disorders. Combat-exposed veterans with PTSD have more severe alcohol and drug-abuse problems than theatre veterans without PTSD. PTSD veterans were at greater risk for concurrent dependence on both alcohol and drugs than non -PTSD theatre veterans. Overall severity of PTSD was more strongly associated with drug abuse than alcohol abuse. Physiological arousal and ideational reexperiencing were significantly correlated with MAST scores while the DAST was positively related to avoidance/numbing.
McFall, M. E., Mackay, P. W., & Donovan, D. M. 1991	Combat-related PTSD and Psychosocial Adjustment Problems Among Substance Abusing Veterans	<i>n</i> =489 treatment-seeking male veterans with substance abuse disorders	Modified Addiction Severity Index; Revised Combat Scale; Mississippi Scale for Combat-related PTSD	3 hour orientation session with a clinical interview and administration of the psychometric instruments. Analyses: t-tests, regression analyses, chi-square	<ul style="list-style-type: none"> 46% of Vietnam theatre veterans presented with clinically significant PTSD symptoms. PTSD contributed to the prediction of history of psychiatric hospitalizations, lifetime trouble with thoughts of suicide, and lifetime trouble controlling violent tendencies/behavior.
McFall, M., Fontana, A., Raskind, M., & Rosenheck, R. 1999	Analysis of Violent Behavior in Vietnam Combat Veteran Psychiatric Inpatients with Posttraumatic Stress Disorder	<i>n</i> =228 treatment-seeking male Vietnam combat veterans , <i>n</i> =64 male veteran psychiatric inpatients with no history of combat exposure or PTSD, <i>n</i> = 273 male Vietnam veterans with PTSD who had never been hospitalized on a VA inpatient psychiatry unit from NVVRS data set	Revised Combat Exposure Scale (to <i>n</i> =58); Mississippi Scale for Combat-Related PTSD (brief version); National Comorbidity Survey (comparison group); PTSD Screening Form; War Stress Interview - Admissions Supplement; 10-item RCES; War Stress Intake Questionnaire; PTSD Discharge Process Form	Standard clinical interview to determine PTSD diagnosis (DSM-III-R); Self-report of violent acts for inpatient groups similar to items on the NVVRS, also derived by direct interview and review of medical records; Violent acts by community residents assessed by adaptation of the Conflict Tactics Scale Analyses: odds ratios, chi-square tests, regression analyses	<ul style="list-style-type: none"> Among the inpatient PTSD group, 54% had alcohol abuse-dependence and 32% had drug abuse-dependence PTSD inpatients were significantly more likely than psychiatric inpatients without PTSD to have engaged in one or more violent acts during the 4 months prior to hospitalization and were significantly more violent than the NVVRS sample. PTSD, atrocities, and substance use contribute to the variation in violence. A significant proportion of PTSD inpatients were classified as highly violent when compared with the non-PTSD inpatients and community PTSD groups.

AUTHORS	STUDY	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Norman, S. B., Tate, S. R., Anderson, K. G., & Brown, S. A. 2007	Do Trauma History and PTSD Symptoms Influence Addiction Relapse Context?	<i>n</i> =134 treatment-seeking male veterans (<i>n</i> = 68 SUD-only, <i>n</i> =34 SUD-Trauma, and <i>n</i> =32 SUD-PTSD)	Semi-Structured Assessment for the Genetics of Alcoholism, Lifetime Version; Brief Symptom Inventory; Timeline FollowBack for Substance Use; Tox screen (20% of participants); Contextual Cue Assessment	Diagnostic interviews conducted to assess lifetime and current PTSD; Charts screened for potential participants; Structured interviews 2 weeks after abstinence; Telephone contacts at 4 post-treatment time periods and in-person interviews at 4 post-treatment time periods; Interview of collateral contact person quarterly Analyses: regression analyses	<ul style="list-style-type: none"> SUD-PTSD and SUD-Trauma groups did not have worse post-treatment outcomes than SUD-only group Those with trauma histories reported significantly higher psychiatric symptom scores than the SUD-only group prior to relapse. SUD-PTSD patients had significantly more anxiety and total symptoms than SUD-Trauma. Higher levels of anxiety and PTSD symptoms predicted an increased likelihood of relapse in negative interpersonal contexts and negative physiological contexts, but a reduced likelihood of drinking in the context of social pressure
Price, R. K., Risk, N. K., Haden, A. H., Lewis, C. E., & Spitznagel, E. L. 2004	Post-traumatic Stress Disorder, Drug Dependence, and Suicidality among Male Vietnam Veterans with a History of Heavy Drug Use	<i>n</i> =641 Vietnam veterans who were in the original VES cohort	VES Survey	Death certificates were used to identify those who committed suicide with external causes of death qualifying for suicide coded by an expert cause-of-death coder. Non-fatal suicidality was determined by answers to questions about frequent thoughts of suicide, making a suicide plan or attempted suicide. Analyses: descriptive statistics, t-tests, ANOVAs	<ul style="list-style-type: none"> Remission from suicidality occurred more slowly for veterans with concurrent PTSD or with concurrent drug dependence. Drug dependence had the second largest effect, following depression, on suicidal timing.
Roszell, D. K., McFall, M. E., & Malas, K. L. 1991	Frequency of Symptoms and Concurrent Psychiatric Disorder in Vietnam Veterans with Chronic PTSD	<i>n</i> =116 male Vietnam veterans referred for PTSD evaluation	SCID-P	<i>n</i> =48 had 4-6 hours of clinical interviewing to assess for military history and DSM-III-R Axis I mental disorders using SCID-P; <i>n</i> =68 only administered the PTSD portion of the SCID-P Analyses: correlations	<ul style="list-style-type: none"> 36.8% of veterans reported alcohol or nonprescription substance use to avoid dealing with memories or feelings associated with the trauma. Alcohol abuse diagnosed in 4.2%, alcohol dependence 33.3%, drug abuse 4.2%, drug dependence 10.4%. Symptoms of reexperiencing were significantly related to symptoms of avoidance or numbing and physiological arousal. Avoidance or numbing symptoms were significantly correlated with physiological arousal.

AUTHORS	STUDY	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Steindl, S. R., Yound, R. M., Creamer, M. Crompton, D. 2003	Hazardous Alcohol Use and Treatment Outcome in Male Combat Veterans with Posttraumatic Stress Disorder	<i>n</i> =608 Australian war veterans	Clinician Administered PTSD Scale; Posttraumatic Stress Disorder Checklist; AUDIT; The Combat Exposure Scale; Demographic Information	CAPS used to confirm diagnosis. AUDIT, PCL and demographic information collected at intake. Measures were given at intake and 9- month follow-up. Analyses: MANOVA, t-tests, ANOVA, regression analyses	<ul style="list-style-type: none"> 68% of veterans were classified as hazardous drinkers at intake. Drinking status was significantly associated with PTSD symptoms at follow-up. Unchanged hazardous drinkers experienced more severe avoidance, numbing, and arousal symptom when compared to new low-risk drinkers at 9-month follow-up. Unchanged hazardous drinkers had more severe arousal symptoms when compared to unchanged low-risk drinkers.
Sutker, P. B., Uddo, M., Brailey, K., Vasterling, J. J., & Errera, P. 1994	Psychopathology in War-zone Deployed and Nondeployed Operation Desert Storm Troops Assigned Graves Registration Duties	<i>n</i> =60 US Army Reservists (<i>n</i> =40 deployed to the Persian Gulf and <i>n</i> =20 stateside)	Demographic Questionnaire; Shipley Institute of Living Scale; Graves Registration Duty Scale; SCID-P for Axis I Disorders; State-Trait Anxiety Inventory; State- Trait Anger Scale; Beck Depression Inventory; 20-Item Physical Symptom Checklist	Assessment and debriefing conducted approximately 12- months after termination of duties. Self-report instruments were administered as well as individually-administered structured clinical interviews, and small-group debriefing sessions. War-zone stress exposure was characterized by a count of total days of war-zone exposure as well as standardized instruments. Analyses: ANOVA, chi- square	<ul style="list-style-type: none"> A significantly greater number of deployed troops had a diagnosis of PTSD than those who were remained stateside (48% vs. 0% current PTSD; 65% vs. 0% lifetime PTSD). PTSD diagnoses were frequently associated with alcohol dependence (21% current diagnosis; 31% lifetime diagnosis) and substance dependence (5% current diagnosis; 4% lifetime diagnosis)
Tate, S. R., Norman, S. B., McQuaid, J. R., & Brown, S.A. 2007	Health Problems of Substance-Dependant Veterans with and without Trauma History	<i>n</i> =121 treatment-seeking male veterans (<i>n</i> =55 SUD-only, <i>n</i> =34 SUD- Trauma, and <i>n</i> =32 SUD- PTSD groups)	Brief Symptom Inventory (at intake and each follow-up); Modified Psychiatric Epidemiology Research Interview and structured interview for more detail; Semi- Structured Assessment for the Genetics of Alcoholism, Lifetime Version; Timeline FollowBack for Substance Use; Tox screen for 15% of participants	Assessments and interviews completed after admission and 2 weeks of abstinence, and quarterly for a year thereafter. Self-ratings of current health status, tobacco use, and number of medical treatment contacts made for physical health in prior three months. Self-report of number of professionally led addiction, dual-diagnosis, mental health and 12-step groups attended in each quarter. Analyses: chi-square, ANOVA, regression analyses	<ul style="list-style-type: none"> Veterans with SUD and PTSD exhibited the highest rates of chronic health problems; however, no significant difference was found between the SUD-Trauma group and SUD-PTSD group. SUD-PTSD and SUD-Trauma patients rated their health as worse and had a greater utilization of medical services.

AUTHORS	STUDY	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Vaidya, N. A., & Garfield, D. A. S. 2003	A Comparison of Personality Characteristics of Patients with Posttraumatic Stress Disorders and Substance Dependence: Preliminary Findings	<i>n</i> =31 treatment-seeking male veterans with substance abuse diagnosis only and <i>n</i> =30 treatment-seeking male PTSD veterans	TCI	Retrospective chart review. PTSD patients were given the TCI as a part of their clinical assessment. PTSD was determined by a researcher using DSM-IV criteria. Analyses: t-tests	<ul style="list-style-type: none"> • Scores differed between PTSD veterans and SUD veterans on the TCI. • PTSD veterans reported average novelty seeking, high harm avoidance, and low reward dependence while substance abuse patients had high novelty seeking, average harm avoidance, and average reward dependence. • Authors suggest that the findings may support the hypothesis that PTSD patients use substances to mitigate PTSD symptoms.

Sleep Disturbances Literature Table *n*=15

AUTHORS	STUDY	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
<p>Aukst-Margetic, B., Margetic, B., Tomic, G., & Bilic-Prcic, A. 2004</p>	<p>Levomepromazine Helps to Reduce Sleep Problems in Patients with PTSD</p>	<p><i>n</i>=21 in- and outpatient veterans with severe PTSD and persistent trauma nightmares</p>	<p>Clinician Administered PTSD Scale</p>	<p>Prospective Study. Participants had not used alcohol or other substances for 6 months. Participants were medicated for trauma nightmares. These ongoing medications were discontinued and Levomepromazine was added. Results were evaluated in week 4.</p> <p>Analyses: t-test</p>	<ul style="list-style-type: none"> • Veterans experienced a significant decrease in CAPS recurrent distressing dream items, as well as prolonged sleep and less subjective sleepiness after waking. • Examined sleep latency, total hours of sleep, and recurrent distressing dreams.
<p>David, D., De Faria, L., & Mellman, T. 2006</p>	<p>Adjunctive Risperidone Treatment and Sleep Symptoms in Combat Veterans with Chronic PTSD</p>	<p><i>n</i>=20 male combat veterans</p>	<p>Mini-International Neuropsychiatric Interview; Clinician-Administered PTSD Scale; Pittsburgh Sleep Quality Index; Sleep Diaries</p>	<p>Open-label, flexible-dose trial. Risperidone was started with 1mg and titrated up until subjects reported improvement in target symptoms and/or developed mild and tolerable side effects.</p> <p>Analyses: t-test</p>	<ul style="list-style-type: none"> • Total CAPS score and specific items identifying recurrent distressing dreams and difficulty falling or staying asleep were improved at 6 weeks. • Sleep logs showed nighttime awakenings had decreased and there was a reduction in the proportion of diaries documenting trauma dreams at 6 weeks. • Examined nightmares, sleep disruption, PTSD.
<p>Engdahl, B., Eberly, R., Hurwitz, T., Mahowald, M., & Blake, J. 2000</p>	<p>Sleep in a Community Sample of Elderly War Veterans with and without Posttraumatic Stress Disorder</p>	<p><i>n</i>=59 elderly male war veterans exposed to war trauma (<i>n</i>= 30 with PTSD diagnosis)</p>	<p>Structured Clinical Interview for DSM-III-R PTSD module; SCID Non-Patient Edition; Combat Exposure Scale; Urine Toxicology Screen, Polysomnography</p>	<p>Sleep lab study. Three successive nights of polysomnography with urine toxicology screen done prior to each night. Subjects retired at normal bedtime and awoke spontaneously. Subjects rated their sleep quality and quantity after each awakening. A multiple sleep latency test was performed during the day following the second all-night study.</p> <p>Analyses: MANOVA, ANOVA</p>	<ul style="list-style-type: none"> • Veterans with PTSD had a higher percentage of REM sleep and exhibited fewer arousals from NREM sleep. • Veterans with PTSD reported more sleep complaints.

AUTHORS	STUDY	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Husain, A., Miller, P. & Carwile, S. 2001	REM Sleep Behavior Disorder: Potential Relationship to Post-traumatic Stress Disorder	<i>n</i> =53 veterans (34 veterans with REM Sleep Behavior Disorder (RSB) and PTSD, 12 veterans with RSB only, and 7 veterans with PTSD only)	Polysomnography	Sleep lab study and retrospective chart review. Charts reviewed for validation of RBD diagnosis. PTSD diagnosis based on DSM-IV criteria and established through psychiatric interview. PTSD patients screened for drug use. Analyses: students t-test, Mann Whitney U test	<ul style="list-style-type: none"> • RSB/PTSD and PTSD groups reported frightening content of dreams. • Dreams/Nightmares were related to past trauma in all RSB/PTSD and PTSD patients but only in 42% of RSB patients. • Sleep efficiency was significantly less in PTSD group when compared to PTSD/RSB group. • Periodic movements of sleep were significantly elevated in PTSD group when compared to other groups. • REM latency and arousal index were not significantly different between groups.
Inman, D. 1990	Sleep Disturbance in Post-Traumatic Stress Disorder: A Comparison with Non-PTSD	<i>n</i> =35 Vietnam combat veterans in PTSD treatment and <i>n</i> =37 treatment-seeking subjects with insomnia	Structured Clinical Interview for DSM-III-R PTSD module; MMPI; Sleep Disturbance Inventory	PTSD diagnosis determined by SCID and MMPI. Subjects participated in a 1/2 hour structured interview. Analyses: t-test	<ul style="list-style-type: none"> • No difference in the severity of insomnia reported by PTSD patients and by those with general insomnia was found. • Insomnia associated with PTSD was characterized by greater anxiety, higher levels of psychomotor activity, and leaving the sleep environment. • Fears concerning falling asleep, fear of the dark, intrusive thoughts of Vietnam, and other anxiety thoughts are present among veterans with PTSD. • Veterans with PTSD recalled more dreams than did non-PTSD insomniacs and reported more repetitive dreams if the content is Vietnam-related. • PTSD veterans often had difficulty returning to sleep after having a nightmare.
Jukic, V. 1999	Sleep Disturbances and Nightmares as Symptoms of Posttraumatic Stress Disorder	<i>n</i> =150 Croatian male former prisoners of war with PTSD, <i>n</i> =150 Croatian male combat veterans with PTSD, and <i>n</i> = Croatian female refugees with PTSD	Questionnaire created for the study (included demographics, trauma experience, duration of psychiatric treatment and sick-leave, appearance, frequency and intensity of sleep disturbances and nightmares)	All PTSD diagnoses were reexamined using the DSM-IV diagnostic criteria. Questionnaire filled out by an examiner after a detailed psychiatric interview. Analyses: descriptive statistics, chi-square	<ul style="list-style-type: none"> • High frequency of nightmares and other sleep disturbances (87.2%) in war victims with PTSD with no statistically significant differences between groups. • Nightmares were most frequent in prisoners of war (82%) while their frequency was significantly lower in the groups of combat veterans (64.7%) and female refugees (56%).

AUTHORS	STUDY	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Leskin, G. A., Woodward, S. H., Young, H. E., & Sheikh, J. I. 2002	Effects of Comorbid Diagnoses on Sleep Disturbances in PTSD	<i>n</i> =591 men (52%) and women (48%) diagnosed with PTSD separated into PTSD/Panic Disorder (<i>n</i> =25), PTSD/MDD (<i>n</i> =85), PTSD/GAD (<i>n</i> =36), PTSD/ETOH (<i>n</i> =186), PTSD (<i>n</i> =281)	National Comorbidity Survey	Retrospective chart review. Reviewed data collected in the National Comorbidity Survey, looking at individuals with PTSD and PTSD with comorbid disorders. Examined the proportion of patients complaining of nightmares and difficulties initiating or maintaining sleep for each of these diagnostic groups. Analyses: chi-square analyses	<ul style="list-style-type: none"> High frequencies of nightmares, insomnia, and exaggerated startle response were reported in all PTSD and PTSD/comorbid disorder participants. Frequencies ranged from 71-94% nightmares, 80-100% insomnia, and 61-88% exaggerated startle response.
Mellman, T. 1997	A Polysomnographic Comparison of Veterans with Combat-Related PTSD, Depressed Men, and Non-ill Controls	<i>n</i> =25 male Vietnam combat veterans with PTSD, <i>n</i> =16 male patients with Major Depressive Disorder, and <i>n</i> =10 male control subjects (Medical Center employees)	Structured Clinical Interview from DSM-III-R; Mississippi Scale for Combat-Related PTSD; Hamilton Depression and Anxiety Scales; Urine drug screen; Polysomnography	Sleep lab study. PTSD and MD groups were tapered off medications for at least two weeks prior to study. Urine drug screens were given within two weeks of sleep recording. All participants were habituated to conventional sleep-wake schedules. Participants spent 2 nights in the laboratory with measurements done on the second night of sleep. Patients were monitored with EEG, EMG, EOG, EKG, and oximetry and respiratory-strain gauge monitors. Analyses: t-tests, ANOVA, ANCOVA, Pearson correlations	<ul style="list-style-type: none"> Veterans with chronic PTSD showed impairment in maintaining sleep when compared to clinical and non-clinical samples. Percentages of REM and slow-wave sleep do not appear to be compensatorily increased.
Mellman, T., Kulick-Bell, R., Ashlock, L., & Nolan, B. 1995	Sleep Events Among Veterans with Combat-related Posttraumatic Stress Disorder (Sleep Survey)	<i>n</i> =58 male Vietnam combat veterans (<i>n</i> =37 with PTSD) not in treatment	Mississippi Scale for Combat-Related Posttraumatic Stress Disorder; Researcher-developed survey (sleep disruption and adaptation during combat tours, current sleep habits and symptoms)	Veterans recruited from two outpatient settings and one community setting. Veterans screened for combat exposure by review of military discharge forms and interview (outpatient veterans only). Analyses: Chi-square	<ul style="list-style-type: none"> Combat veterans with PTSD reported significantly fewer hours of sleep than combat veterans without PTSD. Insomnia and nonrestorative sleep were endorsed as significant problems by 59-73% of PTSD group compared with 19-38% of non-PTSD group. Awakening in the middle of the night was most commonly endorsed by PTSD veterans with noncombat nightmares, combat nightmares, thrashing movements during sleep, and startle or panic-like awakenings.

AUTHORS	STUDY	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Mellman, T., Kulick-Bell, R., Ashlock, L., & Nolan, B. 1995	Sleep Events Among Veterans with Combat-related Posttraumatic Stress Disorder (Sleep Diary)	<i>n</i> =52 male Vietnam combat veterans in inpatient PTSD treatment	Structured Clinical Interview for DSM-III PTSD Section; Mississippi Scale for Combat-Related Posttraumatic Stress Disorder	Veterans completed sleep diaries on three consecutive mornings regarding the previous night's sleep during the 3rd or 4th week of a planned 3-month hospital stay. Analyses: Pearson correlations	<ul style="list-style-type: none"> PTSD symptom severity and average nightly frequency of types of awakening were not associated. Veterans documented an average of 2.5 awakenings per night characterized by nightmares related to combat themes, dreams with other distressing content, startle or fear awakening with no dream recall, and panic awakenings.
Mellman, T., Kulich-Bell, R., Ashlock, L., & Nolan, B. 1995	Sleep Events Among Veterans with Combat-related Posttraumatic Stress Disorder (Sleep Laboratory)	<i>n</i> =21 male Vietnam combat veterans with PTSD and <i>n</i> =8 healthy male comparison subjects not exposed to combat	EEG, EGG, EGG leads, goniometry and respiratory strain gauge monitors; electro-oculograph	Veterans spent 2 consecutive nights in the sleep laboratory with data taken the second night. Veterans filled out a sleep diary following the sleep monitoring. Analyses: MANOVA, t-tests	<ul style="list-style-type: none"> Among veterans with PTSD, there was significantly less sleep efficiency, significantly greater amount of time awake during sleep, and significantly more micro-awakenings. 28.6% of PTSD vs. 0% of controls had body movement and 33.3% of PTSD vs. 0% of controls had periodic limb movement.
Neylan, T. C., Marmar, C. R., Metzler, T. J., Weiss, D. S., Zatzick, D. F., Delucchi, K. L., Wu, R. M., & Schoenfeld, F. B. 1998	Sleep Disturbance in the Vietnam Generation: Findings from a Nationally Representative Sample of Male Vietnam Veterans	<i>n</i> =1200 male Vietnam theatre veterans, <i>n</i> =412 male Vietnam era veterans, <i>n</i> =450 male civilian comparison subjects	Mississippi Scale for Combat-Related Posttraumatic Stress Disorder (military and civilian version); DIS; medical condition questions taken from the National Survey of the Vietnam Generation	Correlational study and retrospective review of the data from the National Vietnam Veterans Readjustment Study. Sleep items derived from the Mississippi Scale for Combat-Related PTSD. Analyses: Pearson correlation	<ul style="list-style-type: none"> Frequent nightmares were unique to veterans diagnosed with PTSD. Combat exposure was highly associated with nightmares, moderately associated with sleep onset insomnia, and only weakly associated with sleep maintenance insomnia. A strong relationship was noted between frequency of nightmares and level of exposure to war zone trauma.

AUTHORS	STUDY	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Raskind, M. A., Peskind, E. R., Hoff, D. J., & Hart, K. L. 2007	A Parallel Group Placebo Controlled Study of Prazosin for Trauma Nightmares and Sleep Disturbance in Combat Veterans with Post-traumatic Stress Disorder	<i>n</i> =40 veterans who have frequent and severe nightmares and disturbed sleep	CAPS; Nightmare Frequency Questionnaire Revised; Hamilton Depression Rating Scale; Clinical Global Impression of Change; Pittsburgh Sleep Quality Index	Diagnosis of PTSD based on the results of CAPS score. Prazosin or placebo capsules were administered using a stratified permuted block randomization procedure and titrated upward by the prescriber based on clinical response. Goal was complete absence of trauma nightmares. Systolic and diastolic blood pressure were measured at baseline, each titration visit and at maintenance dose weeks 4 and 8. Adverse events were monitored at baseline and at each subsequent visit. Analyses: Odds ratio, confidence intervals, regression analyses.	<ul style="list-style-type: none"> Prazosin produced significantly greater improvement than placebo in addressing frequency and intensity of trauma-related nightmares, sleep quality, and global clinical status by the 8 week follow up. Prazosin reduced military trauma-related nightmares compared to nightmares of any kind and shifted dream characteristics from those typical of trauma nightmares toward those of typical normal dreams. Looked at distressing dreams, sleep quality, and dream characteristics.
Roszell, D. K., McFall, M. E., & Malas, K. L. 1991	Frequency of Symptoms and Concurrent Psychiatric Disorder in Vietnam Veterans with Chronic PTSD	<i>n</i> =116 male Vietnam veterans referred for PTSD evaluation	SCID-P	<i>n</i> =48 had 4-6 hours of clinical interviewing to assess for military history and DSM-III-R Axis I mental disorders using SCID-P. <i>n</i> =68 only administered the PTSD portion of the SCID-P Analyses: correlations	<ul style="list-style-type: none"> 39.2% of veterans avoided sleep because they anticipated troubling thoughts or dreams. Mean number of hours of sleep per night was 4.4 +_1.3. Symptoms of reexperiencing were significantly related to symptoms of avoidance or numbing and physiological arousal. Sleep difficulties were diagnosed in 90.5% of veterans.
Stein, M. B., Kline, N. A., & Matloff, J. L. 2002	Adjunctive Olanzapine for SSRI-Resistant Combat-Related PTSD: A Double-Blind, Placebo-Controlled Study	<i>n</i> =19 treatment-seeking veterans with PTSD	Clinician Administered PTSD Scale; Center for Epidemiological Studies Depression Scale; Pittsburgh Sleep Quality Index	Psychopharmaceutical study. Veterans continued taking a stable dose of SSRIs throughout the study. Veterans were assigned to Olanzapine or placebo group for 12 weeks. Analyses: t-test	<ul style="list-style-type: none"> Olanzapine was associated with significantly greater reduction than placebo in sleep disturbance. Change in sleep disturbance was moderately correlated with change in PTSD symptoms, suggesting that enhanced sleep accounts for much of the reported improvement in PTSD symptoms.

AUTHORS	STUDY	PARTICIPANTS	INSTRUMENTS	METHODS	RESULTS
Woodward, S. H., Arsenault, N. J, Murray, C., & Bliwise, D. L. 2000	Laboratory Sleep Correlates of Nightmare Complaint in PTSD Inpatients	<i>n</i> =63 inpatient veterans with PTSD	Clinician-Administered PTSD Scale (<i>n</i> =58); Structured Clinical Interview for the DSM- III-R (<i>n</i> =5); Electro- Oculography; Electroencephalography; Electromyograms; Electrocardiograms	Sleep laboratory study. CAPS and SCID were administered to determine PTSD diagnosis. Veterans spent 3 or 4 nights in the sleep laboratory and made entries into sleep diaries before and after sleep as well as upon awakening during the night. Analyses: ANOVA, MANOVA, chi-square tests	<ul style="list-style-type: none"> • Trauma-related nightmares were associated with increased wake-after-sleep-onset, whereas non-trauma related nightmares were not.

APPENDIX C

Live Long and Prosper: Assessment Strategy

Live Long and Prosper:
A Health Promotion Treatment for Reducing
Health Risk Behaviors in Veterans Diagnosed
with PTSD
Assessment Strategy

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Introduction

Current research has demonstrated that mortality rates due to preventable behavioral causes are significantly higher among veterans diagnosed with posttraumatic stress disorder (PTSD) than in the general population. In particular, veterans diagnosed with chronic PTSD die more frequently from conditions related to substance abuse, such as Hepatitis C, blood diseases, violence, aggression, and suicide (Drescher, Rosen, Burling, & Foy, 2003; Schafer, 2008). In addition, rates of behaviorally-related diseases such as obesity, diabetes, and heart disease are high among veterans diagnosed with chronic PTSD (David, 2004; Kubzansky, Koenen, Spiro, Vokonas, & Sparrow, 2007). These findings highlight a need to promote healthy behavioral practices among veterans diagnosed with PTSD. In light of this need, the developers created a manualized group treatment designed to decrease health risk behaviors and promote positive health practices among veterans diagnosed with PTSD.

Research has shown that motivational interviewing is effective at reducing alcohol use, drug use, cigarette smoking, and risky sexual practices among adult populations (Ball et al., 2006; Bellack, Bennett, Gearon, Brown, & Yang, 2006; Butler et al., 1999; Carroll et al., 2005). Although the research is limited among veteran populations, studies examining the efficacy of motivational interviewing in various behavioral domains suggest its efficacy extends to the veteran population (Davis, Baer, Saxon, & Kivlahan, 2003; Project MATCH Research Group, 1997). In light of the success of motivational interviewing in promoting behavioral change, this intervention incorporates motivational interviewing strategies to increase veterans' awareness of engagement in health risk behaviors and increase their motivation to change. To the developer's knowledge, there is currently no standardized, motivational interviewing treatment protocol that focuses on addressing health risk behaviors in veterans diagnosed with PTSD.

The Live Long and Prosper group treatment is comprised of a three-piece manual set that includes a Facilitator's Guide, Member Workbook, and Assessment Strategy. The Assessment Strategy is an integral component of the motivational interviewing protocol and is designed to offer a means to comprehensively and systematically assess veteran engagement in health risk behaviors as well as assess veteran motivation for change. Motivational interviewing exercises included in the Live Long and Prosper group protocol foster consideration of personal values and goals and promote exploration of the dissonance between these values and goals and the group participant's current behavior. Assessment instruments strategically placed within the intervention offer objective data to the group participants which can be used for further reflection and exploration of their current level of engagement in health risk behaviors, current motivation to change, and how these correspond with their personal values, interests, and goals.

The integrated assessments also provide useful information to the group facilitators about the needs of the group members as well as the efficacy of the intervention. Furthermore, the assessment strategy provides a comprehensive blueprint for empirical validation of the group treatment. Pre- and post-intervention measures are included which allow for comparison of behavioral engagement and motivation for change before and following the intervention. In addition, pre- and post-session measures of motivation for change are included, which allow for validation of the efficacy of the intervention for each session. Included within the assessment strategy is a schedule for test administration to facilitate ease of evaluation and promote consistency among research studies. Alternative test administration schedules are also included for those facilities unable to administer all measures or those not involved in empirical evaluation.

The assessment strategy includes assessments in five domains: (a) frequency of veteran engagement in health risk behaviors pre- and post- intervention, (b) veteran readiness to change pre- and post- intervention, (c) veteran engagement in session specific health risk behaviors, (d) veteran readiness to change health risk behaviors pre- and post- session, and (e) facilitator adherence to the treatment protocol. During the initial group session, all group participants are administered a comprehensive self-report measure assessing the frequency of their engagement in all relevant health risk behaviors and a readiness to change measure assessing their current stage of change for health related behaviors, attitudes, and practices. These measures will be re-administered at completion of the treatment to monitor changes in these domains. Each session, veterans will complete pre- and post-session readiness to change measures specifically related to the session content and session specific measures of behavioral frequency. Facilitators will complete assessments following each session that are designed to enhance facilitator adherence to the group treatment.

Development of Assessment Measures

The development of the assessment measures was informed by research and existing assessment instruments. Initially, assessment measures utilized in existing group treatments were reviewed. Of particular note were assessments included in Trauma Focus Group Therapy (Foy, Ruzek, Glynn, Riney, & Gusman, 2002), Trauma and Spirituality Group (Leoni, 2005; Romesser, 2005; Sornborger, 2005), Group Treatment for Substance Abuse: A Stages-of-Change Therapy Manual (Velasquez, Maurer, Crouch, & DiClemente, 2001), and Curriculum-Based Motivation Group: A Five Session Motivational Interviewing Group Intervention (Fields, 2004). In addition, behavioral frequency and stages of change measures available on the internet for diet, exercise, and sleep difficulties were reviewed. The content and assessment measures from

numerous websites, specifically the National Institute of Health, Centers for Disease Control and Prevention, US Department of Health and Human Services, American College of Sports Medicine, National Institute on Aging, United States Department of Agriculture, and the Cancer Prevention Research Center informed the assessment measures created by the developers. In addition, components of the High-Risk Behavior Questionnaire (Ruzek et al., 2000) were adapted to inform session specific measures of behavioral frequency and motivation to change. Research was also undertaken to determine the most common measures of behavioral frequency used to assess substance use and smoking in research done within the veteran population. Those measures that appeared with the most frequency in the literature were identified, their ease of usability was ensured, and they were integrated into the assessment strategy. In addition, the Facilitator's Adherence Checklist was adapted from the Trauma and Spirituality group protocol (Romesser, 2005) to meet the needs of the current intervention.

Live Long and Prosper Assessment Measures

Measures of Behavioral Frequency

Pre-existing measures of the frequency of engagement in health risk behaviors as well as developer-created measures of behavioral engagement are included in the assessment strategy. Behavioral frequency measures are administered at the commencement of the group intervention, at completion of the group intervention, and during each session.

Health Behavior Frequency Measure. The Health Behavior Frequency Measure (HBFM) is a developer-created self-report instrument that examines the frequency of engagement in health risk behaviors. This measure is administered to the group participants at the beginning of the first session of the health promotion group intervention and at the completion of the intervention. The HBFM assesses each domain of health risk behaviors that are a part of the

group protocol; specifically, diet, exercise, sleep difficulties, risky sex behavior, aggressive acts, substance use, and tobacco use. The measure incorporates questions regarding aggressive acts, gun ownership, smoking, and risky sex behavior from the High-Risk Behavior Questionnaire (Ruzek et al., 2000), an unpublished measure used in the original Live Long and Prosper group. In addition, questions regarding substance use were informed by the structure of questions from the High-Risk Behavior Questionnaire, Alcohol Use Disorders Identification Test (Babor, de la Fuente, Saunders, & Grant, 1992) and the Drug Use Questionnaire (Skinner, 1982), pre-existing measures incorporated into the substance use session. Assessment questions pertaining to diet, exercise, and sleep difficulties were informed by reviews of research in these areas.

The HBFM is a 21-question scale, with answers provided in a Yes-No format or on a Likert scale. The measure allows for the qualitative analysis of veteran's engagement in a variety of health risk behaviors that are found with great frequency among veterans diagnosed with PTSD and lead to increased mortality in this population. This measure is designed to provide information to the group facilitator about the frequency of veteran engagement in each behavioral domain at the onset of the group, which allows for the facilitator to address the needs of individual veterans, as well as illuminate changes in frequency of engagement in risky behaviors when administered post-intervention. As the measure is administered pre- and post-intervention, it allows for empirical validation of the intervention based on changes noted in veteran engagement in health risk behaviors.

Developer-created session specific measures of behavioral frequency. Session-specific measures of behavioral frequency are administered during each session. These self-report instruments provide veterans with objective information about their level of engagement in

health risk behaviors. These measures promote veteran awareness of their current level of behavioral engagement and provide information integral to the motivational interviewing exercises included in the group protocol.

Following an extensive review of measures assessing diet, heart disease, exercise, sleep, and safe sex behavior, the developers determined that the intervention would be best served by the creation of new measures specifically designed for the group intervention. The developers created five behavioral frequency measures designed to assess eating habits, risk for heart disease, exercise, sleep, and safe sex behavior. Each assessment measure was informed by the research and follows the recommendations of relevant groups dedicated to prevention of disease/health risk in these areas; specifically, the National Institute of Health, Centers for Disease Control and Prevention, United States Department of Agriculture, United States Department of Health and Human Services, American College of Sports Medicine, and the National Institute on Aging.

The self-report measures of behavioral frequency are presented in a variety of formats. Veterans are asked to respond using a Yes-No format, Likert scale, or by checking off individual boxes. Scoring is included for each measure and is designed to be user friendly. It provides pertinent information that can be easily disseminated to the veterans orally by the group facilitators. The information provided in the scoring components is designed to elicit consideration by the veterans of their current level of engagement in health risk behaviors and offers suggestions for behavioral change.

Aggressive Behavior Questionnaire and Firearm Safety Questionnaire. The Aggressive Behavior Questionnaire and the Firearm Safety Questionnaire were created from the High-Risk Behavior Questionnaire (Ruzek et al., 2000). The developers extracted and combined the

questions measuring veteran engagement in aggressive behaviors and firearm safety to create comprehensive measures.

The Aggressive Behavior Questionnaire is an 8-item self-report measure of aggressive behavior. Specifically, the measure assesses engagement in verbal threats, assault, property damage, and aggressive driving within the last year. Veterans are also asked to rate their frequency of engagement in any aggressive behavior in the last year on a Likert scale. The Firearm Safety Questionnaire is a 7-item self-report measure. It assesses whether firearms are kept according to National Rifle Association safety guidelines and personal risks factors for unsafe gun use, such as previous suicide attempt with a firearm or previous discharge of a weapon outside of military or law enforcement service. Veterans are asked to answer questions about firearm safety in a Yes-No format. The measures are administered concurrently during Session 7: Aggressive Behavior/Gun Safety.

Alcohol Use Disorders Identification Test (Babor, de la Fuente, Saunders, & Grant, 1992).

The Alcohol Use Disorder Identification Test (AUDIT) is a 10-question measure of alcohol use scored on a 5-point Likert scale. It was developed by the World Health Organization as a brief screening tool for excessive drinking. It is frequently used in the assessment of drinking behavior in research pertaining to veterans. The AUDIT provides an accurate risk assessment for hazardous or harmful alcohol use or alcohol dependence across cultures, gender, and age (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). Research has shown the AUDIT to have favorable sensitivity (.90) and lower but still acceptable specificity (.80) for current ICD-9 alcohol use disorders when using the cut-off score of 8 (Babor et al.), the cutoff score used in this assessment strategy. Research has also shown the AUDIT to have high internal consistency and high reliability ($r=.86$) (Babor et al.).

The AUDIT was created for primary care workers to identify those who would benefit from reducing their level of alcohol consumption and to provide a framework for intervention among this population. These intentions are in line with the rationale for the current manual set targeting health risk behaviors and promoting motivation to change substance use habits. In the current group protocol, the AUDIT is administered during the Substance Use session to increase veteran's awareness of their current drinking habits.

Drug Use Questionnaire, Short Form (Skinner, 1982). The Drug Use Questionnaire, Short Form (DAST-10) is a 10-item self-report instrument designed for brief clinical screening and treatment evaluation research to determine psychoactive drug abuse (Gavin, Ross, & Skinner, 1989). Veterans are asked to note "yes" or "no" to questions regarding their engagement in drug use over the past 12 months. Research studies have found that the DAST has high levels of internal consistency reliability (0.92), a largely unidimensional scale, and concurrent validity with frequency of drug use in the last 12 months (Skinner, 1982). At a cut-off point between 5/6 and 9/10, the DAST shows sensitivity between 96% to 78% and specificity between 79% and 89% with overall accuracy of 85% (Gavin, Ross, & Skinner). The DAST is also highly correlated with current ($r=0.75$) and lifetime ($r=0.74$) DSM-III drug diagnosis (Gavin, Ross, & Skinner).

The DAST-10 is administered during the Substance Use session of the group intervention along with the AUDIT. The developers chose to administer the DAST-10, the short form of the DAST, rather than the DAST to avoid fatiguing the group participants as multiple measures of behavioral frequency are administered during this session. In the current group protocol, the DAST-10 is administered during the Substance Use session to increase veteran's awareness of their level of drug use.

Fagerström Test for Nicotine Dependence. (Heatherton, Kozlowski, Frecker, & Fagerström, 1991). The Fagerström Test for Nicotine Dependence (FTND) is a 6-item self-report instrument designed to assess for level of nicotine dependence. Specifically, it assesses smoking frequency and habits. The FTND has been tested for reliability and validity among a psychiatric population and a population of veterans with PTSD (Buckley et al., 2005). Among these populations, the FTND was found to be stable based on test-retest reliability (0.82) and was correlated at statistically significant levels with biological and psychological measures of dependence (0.40) (Buckley et al.).

The FTND is administered to the group participants during the Tobacco Use session. It is designed to assist veterans in acknowledging their level of nicotine dependence and to promote critical thinking about their tobacco use.

Stages of Change Measures

Developer-created stages of change measures are included in the assessment strategy. Stage of change is measured pre- and post- intervention as well as pre- and post- session. The developers performed a comprehensive review of existing stages of change measures including the University of Rhode Island Change Assessment Scale (DiClemente & Hughes, 1990), stages of change measures utilized in research studies, stages of change measures included in other group protocols, and stages of change measures for health risk behaviors from the Cancer Prevention Research Center. As the stages of change measures found did not meet the exact needs of the current group protocol, the developers created new measures informed by their research and containing the most salient aspects of measurement of stages of change found across measures.

Health Risk Stages of Change Measure. The pre- and post- intervention Health Risk Stages of Change measure was designed to assess the group participants' current stage of change related to any behaviors in which they currently engage that may have a negative impact on their health. Although the group participants are encouraged to reflect upon those behaviors included in the group protocol, specific measures of stage of change for individual health risk behaviors are not included.

The measure assesses the group participants current stage of change by having the group participants first select one of six statements pertaining to their health related behaviors and then circling the stage of change that corresponds to the original statement selected. By separating the statement which best reflects their current health related behavior and the related stage of change, the developers hope to decrease judgment and promote honest disclosure of health risk behavior engagement.

The pre- and post- intervention Health Risk Stages of Change Measure is designed to fulfill several functions. The pre- and post- intervention design offers a format for collecting empirical data about the efficacy of the group protocol to increase group participants' motivation to change health risk behaviors over the course of the intervention. It also offers the group participants objective data on changes in their own motivation for change before and following the intervention. In addition, the pre-intervention measure is placed within the first session of the group protocol and is used to educate the group participants about the transtheoretical model and to familiarize them with the type of measure they will be asked to complete each week.

Session specific stages of change measures. The group protocol includes seven session specific stages of change measures which are administered pre- and post- session. The group

participant is asked to first select one of six statements pertaining to their session specific health related behaviors and then circle the stage of change the corresponds to the original statement selected. As with the pre- and post- intervention Health Risk Stages of Change Measure, the session specific measures separate the statement which best reflects the group participant's current health related behavior and the related stage of change to decrease judgment and promote honest disclosure of health risk behavior engagement.

The session specific stages of change measures are intended to perform multiple functions. First, they are designed to increase the group participants' awareness of their current level of motivation for change, promote critical thinking about their own motivations, and illuminate any changes in motivation following the group session. In addition, the pre- and post-session design allows for empirical evaluation of the efficacy of the individual group sessions to motivate change in health risk behaviors.

Facilitator's Adherence Checklist

Following each session, the facilitators will complete a session-specific Facilitator's Adherence Checklist. The Facilitator's Adherence Checklist was adapted from the Adherence Checklist (Romesser, 2005) found in the Trauma and Spirituality Group (Romesser, 2005; Sornborger, 2005; Leoni, 2005). In the Facilitator's Adherence Checklist, the major components of each session are identified and the facilitators are asked to check off the completed components. Additional space is provided so the facilitators may note areas of difficulty, obstacles to completion, or issues of relevance for each session component. The Facilitator's Adherence Checklist allows for assessment of fidelity to the protocol. It also serves as a means of identifying problem areas, obstacles to successful session protocol completion, and areas for review when pilot testing the group intervention.

Administration Schedule

This schedule provides a list of the assessment measures and the session in which they are administered to the group participants. For appropriate placement of the measures in each session, please refer to the Live Long and Prosper Facilitator's Manual.

Session 1: Group Orientation

_____ Health Risk Stages of Change Measure

_____ Health Behavior Frequency Measure

_____ Facilitator's Adherence Checklist

Session 2: Cardiovascular Disease/Physical Activity

_____ Physical Activity Stages of Change Measure

_____ Heart Disease and Exercise Questionnaire

_____ Facilitator's Adherence Checklist

Session 3: Obesity/Diabetes/Diet

_____ Healthy Diet Stages of Change Measure

_____ Eating Habits Questionnaire

_____ Facilitator's Adherence Checklist

Session 4: Sexually Transmitted Diseases

_____ Safe Sex Practices Stages of Change Measure

_____ Safe Sex Behavior Questionnaire

_____ Facilitator's Adherence Checklist

Session 5: Substance Abuse

_____ Alcohol Abuse Stages of Change Measure

_____ Drug Abuse Stages of Change Measure

_____ Alcohol Use Disorders Identification Test

_____ Drug Use Questionnaire, Short Form

_____ Facilitator's Adherence Checklist

Session 6: Tobacco Use

_____ Tobacco Use Stages of Change Measure

_____ Fagerström Test for Nicotine Dependence

_____ Facilitator's Adherence Checklist

Session 7: Aggressive Behavior/Gun Safety

_____ Aggression Stages of Change Measure

_____ Gun Safety Stages of Change Measure

_____ Aggressive Behavior Questionnaire

_____ Firearm Safety Questionnaire

_____ Facilitator's Adherence Checklist

Session 8: Sleep Hygiene

_____ Sleep Hygiene Stages of Change Measure

_____ Sleep Questionnaire

_____ Health Risk Stages of Change Measure

_____ Health Behavior Frequency Measure

_____ Facilitator's Adherence Checklist

Abridged Administration Schedule

The abridged assessment schedule offers alternative options for administering assessment measures during the group intervention. These alternatives are designed for those facilities that do not have the resources to administer all assessment measures or are not gathering data for empirical investigation.

Option 1:

The group facilitators may administer the assessment measures as indicated, leaving out the second administration of the session specific Stages of Change measures. This option maintains the integrity of the intervention, capitalizing on the information gleaned from the session specific Stages of Change measures administered at the beginning of each session during the MI exercises while saving time and decreasing the likelihood group participant burnout on assessment measures. All measures of health risk behavior frequency should be administered as outlined on the Assessment Schedule. In addition, the facilitators should complete the session specific Facilitators Adherence Checklist to ensure fidelity to the treatment protocol and identify any obstacles and areas of strength or weakness.

Option 2:

The group facilitators may omit all session specific Stages of Change measures in sessions 2-8; however, the administration of the Health Risk Stages of Change measure in Session 1 and 8 should be maintained. The administration of this measure will allow the group facilitators and participants to reflect on any changes in participant motivation to change health risk behaviors from the beginning to the end of the intervention. Rather than completing the session-specific stages of change measures, the group participants should be asked to reflect on their current stage of change related to each session-specific health risk behavior during the MI exercises. The group facilitators may wish to provide a generic Stages of Change model graph (e.g. an image of a staircase with the lowest step labeled precontemplation and the highest step labeled maintenance) on posterboard or on a whiteboard to which group participants can refer throughout the session. All measures of health risk behavior frequency should be administered as outlined on the assessment schedule. In addition, the facilitators should complete the session specific Facilitators Adherence Checklist to ensure fidelity to the treatment protocol and identify any obstacles and areas of strength or weakness.

Session 1: Group Orientation

Measures included:

Health Risk Stages of Change Measure

Health Behavior Frequency Measure

Facilitator's Adherence Checklist

Health Risk Stages of Change Measure

This group seeks to inform you about behaviors that can negatively impact your long term health and longevity. It will increase your knowledge in these areas, increase your awareness of the frequency of your own participation in these behaviors, and perhaps motivate you to take steps towards changing some of these behaviors.

This measure is designed to help you and your group facilitators assess your current thoughts about changing health-risk behaviors. You will complete a similar measure during each session in reference to the specific session topic.

Please take a moment to consider any current behavior in which you engage that may have a negative impact on your health. In particular, take time to reflect on the following: your diet, level of engagement in exercise, sleep problems, substance use, smoking, unsafe sex practices, level of aggression, and gun safety.

Please circle the number that best fits your current health related behavior:

1. I have been engaging in behavior that has positive health impacts regularly for over 6 months.
 2. I have been engaging in behavior that has positive health impacts for less than 6 months.
 3. I plan to begin to engage in behavior that has positive health impacts in the next 30 days.
 4. I plan to begin to engage in behavior that has positive health impacts in the next 6 months.
 5. I have no plans to begin engaging in behaviors that have positive health impacts.
 6. I have always engaged in behavior that has positive health impacts.
-

Please circle your current stage of change that corresponds to the the number circled above.

1. I have been engaging in behavior that has positive health impacts regularly for a long time. I am using strategies to continue this behavior. I am in the **MAINTENANCE** stage.
2. I have been engaging in behavior that has positive health impacts. I am taking steps to avoid pitfalls or obstacles to my engagement in these positive behaviors. I am in the **ACTION** stage.
3. I am seriously considering beginning to engage in behavior that has positive health impacts. I can see the benefits these behaviors and have a plan to start. I am in the **PREPARATION** stage.
4. I am considering the possibility of engaging in behaviors that have positive health impacts, but remain unsure. I may be trying small changes. I am in the **CONTEMPLATION** stage.
5. I do not want to change my behavior to engage in those with positive health impacts. I am in the **PRECONTEMPLATION** stage.
6. I have always engaged in behavior that has positive health impacts. The stages of change model is not applicable to me.

Health Behavior Frequency Measure

This measure is designed to help determine your current engagement in a variety of different behaviors that can impact on your health. Please circle the response that best fits your current level of engagement in these behaviors. Please be as honest as possible.

- 1) How often do you incorporate these foods into your diet? Please circle the response that best describes your diet.

Fruits	Never/Rarely	Sometimes	Daily
Vegetables	Never/Rarely	Sometimes	Daily
Low-fat or Fat-free Dairy Products	Never/Rarely	Sometimes	Daily
Lean Meats (e.g. chicken or fish rather than steak)	Never/Rarely	Sometimes	Daily
Whole Grains (e.g. brown rice, whole grain bread)	Never/Rarely	Sometimes	Daily

- 2) How often do you engage in:

- a) Light intensity activities (e.g. casual walking, taking out the trash) per week?

Never 1 time 2 times 3 times 4 times 5 or more

- b) Moderate intensity activities (e.g. brisk walking) per week?

Never 1 time 2 times 3 times 4 times 5 or more

- c) Vigorous intensity activities (e.g. jogging, swimming laps) per week?

Never 1 time 2 times 3 times 4 times 5 or more

- d) Strengthening activities (e.g. sit-ups, weight lifting) per week?

Never 1 time 2 times 3 times 4 times 5 or more

3) Do you have difficulty falling or staying asleep?

Yes

No

4) On average, how many hours of sleep do you get each night? _____

5) Have you ever been tested for HIV or Hepatitis C?

Yes

No

6) Have you engaged in unprotected sex (i.e. oral, anal, or vaginal sex without a condom)?

Yes

No

7) If so, how frequently do you engage in unprotected sex?

Almost Never

Sometimes

Almost Always

Every time

8) Have you made verbal threats to others?

Yes

No

If so, how often?

Rarely

Sometimes

Very Regularly

9) Have you assaulted others?

Yes

No

If so, how often?

Rarely

Sometimes

Very Regularly

10) Have you intentionally damaged property?

Yes

No

If so, how often?

Rarely

Sometimes

Very Regularly

11) Have you engaged in aggressive driving (e.g. verbal outbursts, angry hand gestures, tailgating, driving under the influence, intentionally driving your vehicle into another object?)

Yes

No

If so, how often?

Rarely

Sometimes

Very Regularly

12) Do you own firearms?

Yes

No

13) If you own a firearm, do you keep all of your firearms in a safe manner (e.g. unloaded, in a locked area with protected locks and the bullets separate from the firearms)?

Yes

No

14) Do you drink alcohol?

Yes

No

15) If you drink alcohol, how often do you have a drink?

Monthly or less 2-4 times a month 2-3 times a week 4 or more times a week

16) On a typical day, how many drinks do you have?

1 or 2

3 or 4

5 or 6

7 to 9

10 or more

17) How often do you have 6 or more drinks on one occasion?

Never

Less than monthly

Monthly

Weekly

Daily or almost daily

18) Have you used drugs other than those required for medical reasons (e.g. abuse of prescription medication or illegal drugs)?

Yes

No

19) If you use drugs, how often do you use them?

Monthly or less 2-4 times a month 2-3 times a week 4 or more times a week

20) Do you smoke cigarettes?

Yes

No

21) How many cigarettes do you smoke per day?

10 or less

11-20

21-30

31 or more

Thank you for completing this measure. Please return it to your group facilitator.

Facilitator's Adherence Checklist: Group Orientation

Please check off the following items that were covered in the session. Please note any items of relevance for each session component. In particular, if there were barriers to the completion of certain items, please note in the space provided the obstacles that presented a problem.

- Administration of Health Behavior Frequency Measure

- Introduction to the group

- Review group rules

- Psychoeducation on PTSD and health risk behavior/conditions

- Introduction of member workbook and overview of session topics

- Introduction of stages of change model

- Administration of Health Risk Stages of Change Measure

Personal values exercise

Elicit reactions to the session

From *"An Assessment Strategy for a Spirituality Group Intervention"* by Romesser, J. M., 2005, Psy.D. dissertation, Pepperdine University, United States -- California. Retrieved June 16, 2008, from Dissertations & Theses @ Pepperdine University - SCELIC database. (Publication No. AAT 3204843). Copyright 2006 by ProQuest Information and Learning Company. Adapted with permission from the author.

Session 2:

Cardiovascular Disease/Physical Activity

Measures included:

Physical Activity Stages of Change Measure

Heart Disease and Exercise Questionnaire

Facilitator's Adherence Checklist

Physical Activity Stages of Change Measure

For the purpose of this measure, **REGULAR EXERCISE** is defined as 30 minutes of moderate physical activity at least five days per week. Examples of moderate physical activity include walking briskly, mowing the lawn, dancing, swimming or bicycling.

Please check the box that best fits your current exercise behavior:

1. I have been exercising regularly for over 6 months.
2. I have been exercising regularly for less than 6 months.
3. I plan to begin to exercise regularly in the next 30 days.
4. I plan to begin to exercise regularly in the next 6 months.
5. I have no plans to begin exercising regularly.
6. I have always exercised regularly.

Please circle your current stage of change corresponding to the number circled above.

1. I have been exercising regularly for a long time. I am using strategies to continue this behavior. I am in the **MAINTENANCE** stage.
2. I have been exercising regularly. I am taking steps to avoid pitfalls or obstacles to exercise. I am in the **ACTION** stage.
3. I am seriously considering beginning to exercise regularly. I can see the benefits of exercise and have a plan to start. I am in the **PREPARATION** stage.
4. I am considering the possibility of exercising regularly, but remain unsure. I may be trying small changes. I am in the **CONTEMPLATION** stage.
5. I do not want to exercise regularly. I am in the **PRECONTEMPLATION** stage.
6. I have always exercised regularly. The stages of change model is not applicable to me.

Heart Disease and Exercise Questionnaire

1) Please check those items which pertain to your current health status:

- High Cholesterol Diabetes Obesity
 High blood pressure Smoking Family History of Heart Disease

2) How often do you engage in light intensity (e.g. casual walking, taking out the trash) physical activity each week?

Never 1 time 2 times 3 times 4 times 5 or more times
 a week a week a week a week a week

In general, how many minutes do you spend doing these activities on each occasion? _____

3) How often do you engage in moderate intensity (e.g. brisk walking, activities that cause you to break a sweat) physical activity each week?

Never 1 time 2 times 3 times 4 times 5 or more times
 a week a week a week a week a week

In general, how many minutes do you spend doing these activities on each occasion? _____

4) How often do you engage in vigorous intensity (e.g. jogging, swimming laps, heavy gardening) physical activity each week?

Never 1 time 2 times 3 times 4 times 5 or more times
 a week a week a week a week a week

In general, how many minutes do you spend doing these activities on each occasion? _____

5) How often do you do muscle strengthening exercises (e.g. lifting weights, doing sit-ups, shoveling) each week?

Never 1 time 2 times 3 times 4 times 5 or more times
 a week a week a week a week a week

In general, how many repetitions of these exercises do you do? _____

In general, what muscle groups are involved in these exercises? (check all that apply)

- Legs Abdomen Hips Back
 Chest Shoulders Arms

Heart Disease and Exercise Questionnaire Scoring

Heart Disease

Look at Question 1. If any box is checked, you are at risk for developing heart disease. The more boxes checked, the higher the risk.

Exercise

If you circled any engagement in exercise on Questions 2-5, CONGRATULATIONS! You are already engaging in physical activity. However, you may need to increase your level of physical activity to include moderate and vigorous activities, strength exercises, or increase exercise duration in order to reap the most benefits for your health. Look at the chart below to see how you measure up.

The amount of physical activity recommended by the NIH, AHA, and the ACSM to receive health benefits is:

30 minutes of moderate intensity exercise 5 times a week
OR
20 minutes of vigorous exercise 3 times a week
AND
8-12 repetitions of a muscle strengthening exercise 2 times a week Involving all major muscle groups

Exercise duration can be broken up into 10 minute periods throughout the day.

Look at your questionnaire and determine if you are currently meeting these guidelines.

Facilitator's Adherence Checklist: Cardiovascular/Exercise Session

Please check off the following items that were covered in the session. Please note any items of relevance for each session component. In particular, if there were barriers to the completion of certain items, please note in the space provided the obstacles that presented a problem.

- Administration of Stages of Change measures pre- and post- intervention

- Review of group rules

- Discussion of reactions from previous session

- Introduction of session topic

- Administration/Discussion of Heart Disease and Exercise Questionnaire

- Psychoeducation about heart disease and exercise

- Decisional Balance exercise

- Looking Forward exercise

- Discussion/Ratings of Commitment/Confidence

- Developing behavioral strategies

- Elicit reactions to the session

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Session 3: Obesity/Diabetes/Diet

Measures Included:

Healthy Diet Stages of Change Measure

Eating Habits Questionnaire

Facilitator's Adherence Checklist

Healthy Diet Stages of Change Measure

For the purpose of this measure, **A HEALTHY DIET** is defined as incorporating fruits, vegetables, low-fat dairy products, lean meats, and whole grains into your daily diet and/or abiding by physician recommended dietary restrictions.

Please check the box that best fits your current eating habits:

1. I have been eating a healthy diet for over 6 months.
2. I have been eating a healthy diet for less than 6 months.
3. I plan to begin to eat a healthy diet in the next 30 days.
4. I plan to begin to eat a healthy diet in the next 6 months.
5. I have no plans to begin to eat a healthy diet.
6. I have always eaten a healthy diet.

Please circle your current stage of change corresponding to the number circled above.

1. I have been eating a healthy diet for a long time. I am using strategies to continue this behavior. I am in the **MAINTENANCE** stage.
2. I have been eating a healthy diet. I am taking steps to avoid pitfalls or obstacles to healthy eating. I am in the **ACTION** stage.
3. I am seriously considering a change to a healthy diet. I can see the benefits of healthy eating and have a plan to start. I am in the **PREPARATION** stage.
4. I am considering the possibility of changing to a healthy diet, but remain unsure. I may be trying small changes. I am in the **CONTEMPLATION** stage.
5. I do not want to eat a healthy diet. I am in the **PRECONTEMPLATION** stage.
6. I have always eaten a healthy diet. The stages of change model is not applicable to me.

Eating Habits Questionnaire

Please circle the answer which best describes your eating habits.

1) Have you been diagnosed with diabetes?

Yes

No

2) If you have physician recommended dietary restrictions, do you follow these restrictions?

Never/Rarely

Sometimes

Daily

3) How often do you incorporate these foods into your diet? Please circle the response that best describes your diet.

Fruits	Never/Rarely	Sometimes	Daily
Vegetables	Never/Rarely	Sometimes	Daily
Low-fat or Fat-free Dairy Products	Never/Rarely	Sometimes	Daily
Lean Meats (e.g. chicken or fish rather than steak)	Never/Rarely	Sometimes	Daily
Whole Grains (e.g. brown rice, whole grain bread)	Never/Rarely	Sometimes	Daily

4) How often do you eat fried food?

Never/Rarely

Sometimes

Daily

5) How often do you eat at a fast-food restaurant?

Never/Rarely

Sometimes

Daily

6) In which of these behaviors do you regularly engage?

Eating while watching television

Eating quickly

Eating while standing up

Overeating

Emotional eating

Giving into food cravings

Eating Habits Questionnaire Scoring

Question 1:

If you have been diagnosed with **DIABETES**, the type of foods that you incorporate into your diet may differ from those which are recommended in Question 3. Please refer to the dietary guidelines that have been provided by your physician to distinguish if you are following your recommended food guidelines.

Question 2:

If you are following your physician recommended dietary restrictions **DAILY**, CONGRATULATIONS! You are taking huge steps to benefit your health.

If you are following your physician recommended dietary restrictions **SOMETIMES**, CONGRATULATIONS! You are attempting to have an impact on your health. However, you may need to increase your adherence to these restrictions to achieve the most benefit and avoid negative health impacts.

If you are following your physician recommended dietary restrictions **NEVER/RARELY**, you need to consider the negative impact that your eating habits have on your health and explore the obstacles that keep you from changing your habits.

Question 3:

Although the recommended daily intake of food groups is different based on your age, gender, and activity level, the USDA recommends **DAILY** intake of: fruits, vegetables, fat-free or low-fat milk group foods (e.g. cheese, yogurt, milk), lean or low-fat meat, poultry, or fish, and whole grains.

Look at your questionnaire and determine if you are currently meeting these guidelines.

Question 4 & 5:

The USDA recommends that most of your sources of fat come from fish, nuts, and vegetable oils. Most Americans get enough of the oil they need from the foods they eat, such as nuts, fish, cooking oil, and salad dressing. As such, your intake of fried and fast food should be limited.

Fried food, particularly those with a batter coating, and fast-food has been shown to be high in fat content and can add unnecessary fat to your diet. Too much fat in your diet can lead to numerous negative health consequences such as obesity, high blood pressure, high blood cholesterol, coronary heart disease, diabetes and some cancers.

Questions 6:

Each of the behaviors listed increases the likelihood that you are eating food that is unhealthy, that you are eating more food than necessary, and/or that you are eating without thinking, or really savoring, the food that you are eating. If you have checked one or more of these behaviors, you may want to consider changing these behaviors in order to promote positive eating habits and optimal physical health.

Facilitator's Adherence Checklist: Obesity/Diabetes/Diet Session

Please check off the following items that were covered in the session. Please note any items of relevance for each session component. In particular, if there were barriers to the completion of certain items, please note in the space provided the obstacles that presented a problem.

- Administration of Stages of Change measures pre- and post- intervention

- Review of group rules

- Discussion of reactions from previous session

- Introduction of session topic

- Administration/Discussion of Eating Habits Questionnaire

- Psychoeducation about obesity, diabetes, and diet

- Decisional Balance exercise

Looking Forward exercise

Discussion/Ratings of Commitment/Confidence

Developing behavioral strategies

Elicit reactions to the session

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Session 4: Sexually Transmitted Diseases

Measures included:

Safe Sex Practices Stages of Change Measure

Safe Sex Behavior Questionnaire

Facilitator's Adherence Checklist

Safe Sex Practices Stages of Change Measure

For the purpose of this measure, **SAFE SEX PRACTICES** are defined as the use of a condom each time you engage in sexual activities and having only one sex partner at a time.

Please check the box that best fits your current sexual behavior:

1. I have been engaging in safe sex practices for over 6 months.
2. I have been engaging in safe sex practices for less than 6 months.
3. I plan to begin engaging in safe sex practices in the next 30 days.
4. I plan to begin to engage in safe sex practices in the next 6 months.
5. I have no plans to begin practicing safe sex.
6. I am not sexually active.

Please circle your current stage of change corresponding to the number circled above.

1. I have not had unsafe sex in a long time. I am using strategies to prevent unsafe sex. I am in the **MAINTENANCE** stage.
2. I have stopped having unsafe sex. I am in the **ACTION** stage.
3. I am seriously considering implementing safe sex behaviors. I can see the benefits of safe sex. I am in the **PREPARATION** stage.
4. I am considering the possibility of changing my unsafe sex practices, but remain unsure. I may be trying small changes. I am in the **CONTEMPLATION** stage.
5. I do not think my unsafe sex practices are a problem. I am not thinking of changing my unsafe sex practices. I am in the **PRECONTEMPLATION** stage.
6. I have never had unsafe sex. The stages of change model is not applicable to me.

Safe Sex Behavior Questionnaire

For the purposes of this measure, **UNPROTECTED SEX** is defined as engaging in sexual activities (oral, anal, vaginal) without the use of a condom.

Please circle that answer that best reflects your sexual practices. Please be as honest as possible.

- 1) I have never been tested for HIV or Hepatitis C.
Yes No

- 2) Have you engaged in unprotected sex?
Yes No

- 3) When you have/had sex, how often do/did you use condoms?
Every time Sometimes Never

- 4) Have you/Are you engaged in sex practices with multiple partners?
Yes No

- 5) Have you used intravenous drugs?
Yes No

- 6) Do you know the HIV and Hepatitis C status of your sex partner(s)?
Yes No

- 7) Have you had unprotected sex with a prostitute?
Yes No

- 8) Do you engage in sexual practices while under the influence of alcohol or illegal drugs?
Yes No

- 9) Is your sex partner(s) at risk for having HIV or Hepatitis C? For example: Has he/she engaged in unsafe sex practices, used intravenous drugs, or had sex for drugs or money?
Yes No

Safe Sex Behavior Questionnaire Scoring

Question 1:

If you answered YES to Question 1, CONGRATULATIONS! You have made a big step toward practicing safe and responsible sex and you have shown concern for the health of yourself and your sexual partner(s).

If you answered NO to Question 1, you may want to consider the reasons that have kept you from being tested for HIV and Hepatitis C as well as the negative outcomes that may come from not finding out your disease status. Both HIV and Hepatitis C are found at higher rates among veterans with PTSD than among veterans without PTSD or the general public. By finding out your disease status, you can be treated, if necessary, which increases positive outcomes for your health and longevity. In addition, by finding out your disease status, you will be able to practice safe and responsible sex with your partner(s).

Question 2 & 3:

If you answered NO to Question 2 and EVERYTIME to Question 3, CONGRATULATIONS! You are practicing safe sex and are protecting yourself and your partner(s) from HIV, Hepatitis C, and other sexually transmitted diseases.

If you answered SOMETIMES to Question 3, CONGRATULATIONS! You are trying to practice safe sex; however, without consistent use of condoms you cannot be protected against HIV and Hepatitis C. You may need to evaluate the situations in which you practice unsafe sex and consider ways to change your unsafe behavior.

If you answered NEVER to Question 3, you are not engaging in safe sex practices. You may be compromising your health and that of your partner(s) and are at greater risk of acquiring HIV and Hepatitis C. You may want to consider the reasons that you choose to practice unsafe sex and weigh the potential outcomes of these unsafe practices against your reasons for practicing unsafe sex.

Question 4-9:

If you answered YES to any of these questions, you are at an increased risk of acquiring and/or having HIV, Hepatitis C, or other sexually transmitted diseases.

Facilitator's Adherence Checklist: STDs Session

Please check off the following items that were covered in the session. Please note any items of relevance for each session component. In particular, if there were barriers to the completion of certain items, please note in the space provided the obstacles that presented a problem.

- Administration of Stages of Change measures pre- and post- intervention

- Review of group rules

- Discussion of reactions from previous session

- Introduction of session topic

- Administration/Discussion of Safe Sex Behavior Questionnaire

- Psychoeducation about safe sex

- Decisional Balance exercise

Looking Forward exercise

Discussion/Ratings of Commitment/Confidence

Developing behavioral strategies

Elicit reactions to the session

From "An Assessment Strategy for a Spirituality Group Intervention" by Romesser, J. M., 2005, Psy.D. dissertation, Pepperdine University, United States -- California. Retrieved June 16, 2008, from Dissertations & Theses @ Pepperdine University - SCELIC database. (Publication No. AAT 3204843). Copyright 2006 by ProQuest Information and Learning Company. Adapted with permission from the author.

Session 5: Substance Abuse

Measures included:

Alcohol Abuse Stages of Change Measure

Drug Abuse Stages of Change Measure

Alcohol Use Disorders Identification Test

Drug Use Questionnaire, Short Form

Facilitator's Adherence Checklist

Alcohol Abuse Stages of Change Measure

For the purpose of this measure, **ALCOHOL ABUSE** is defined as having three drinks in a row.

Please circle the number of the statement that best fits your current drinking behavior:

1. I have not abused alcohol for over 6 months.
2. I have not abused alcohol within the last 6 months.
3. I plan to stop abusing alcohol in the next 30 days.
4. I plan to stop abusing alcohol in the next 6 months.
5. I have no plans to stop abusing alcohol.
6. I have never abused alcohol.

Please circle your current stage of change corresponding to the number circled above.

1. I have not abused alcohol in a long time. I am using strategies to prevent relapse. I am in the **MAINTENANCE** stage.
2. I have quit abusing alcohol. I am taking steps to avoid triggers and seek help from others. I am in the **ACTION** stage.
3. I am seriously considering no longer abusing alcohol. I can see the benefits of quitting and have a plan to quit. I am in the **PREPARATION** stage.
4. I am considering the possibility of changing my alcohol abuse, but remain unsure. I may be trying small changes. I am in the **CONTEMPLATION** stage.
5. I do not think my alcohol abuse is a problem. I am not thinking of quitting abusing alcohol. I am in the **PRECONTEMPLATION** stage.
6. I have never abused alcohol. The stages of change model is not applicable to me.

Drug Abuse Stages of Change Measure

For the purpose of this measure, **DRUG ABUSE** is defined as any use of illegal drugs (for example: marijuana, heroin, methamphetamines) or any use of prescription drugs other than as prescribed.

Please circle the number of the statement that best fits your current drug use:

1. I have not abused drugs for over 6 months.
 2. I have stopped abusing drugs within the last 6 months.
 3. I am planning to stop abusing drugs in the next 30 days.
 4. I am thinking about stopping my drug abuse in the next 6 months.
 5. I have no plans to stop abusing drugs.
 6. I have never abused drugs.
-

Please circle your current stage of change corresponding to the number circled above.

1. I have not abused drugs in a long time. I am using strategies to prevent relapse. I am in the **MAINTENANCE** stage.
2. I have stopped abusing drugs. I am taking steps to avoid triggers and seek help from others. I am in the **ACTION** stage.
3. I am seriously considering no longer abusing drugs. I can see the benefits of quitting and have a plan to quit. I am in the **PREPARATION** stage.
4. I am considering the possibility of changing my drug abuse, but remain unsure. I may be trying small changes. I am in the **CONTEMPLATION** stage.
5. I do not think my drug abuse is a problem. I am not thinking of quitting abusing drugs. I am in the **PRECONTEMPLATION** stage.
6. I have never abused drugs. The stages of change model is not applicable to me.

Alcohol Use Disorders Identification Test (AUDIT)

Place an X in the one box that best describes your answer to each question. (One drink is equal to one can, glass, or bottle of beer, one shot of liquor or one mixed drink, or one glass of wine.)

Questions	0	1	2	3	4	
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week	
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year	
					TOTAL	

Each response is scored using the numbers at the top of each column. After completing the questionnaire, please write the number that corresponds to the box in which you have placed an X in the empty column to the right. Then, add the numbers and write the total in TOTAL box.

From "AUDIT: The alcohol use disorders identification test: Guidelines for use in primary care, second edition" by Babor, T. F., Higgins-Biddle, J. C., Saunders, J. B., & Monteiro, M. G., 2001, Geneva, Switzerland, *The World Health Organization*. Copyright 2001 by the World Health Organization. Reproduced with permission.

AUDIT Scoring

Scores between 1 and 7:

Your drinking has not reached a dangerous level. You may have a few drinks each week, and drinking may not have begun to cause trouble with other people in your life. If you have a score toward the high end of this range, you might want to start paying more attention to how much you are drinking, and how this may be affecting other people in your life.

Scores between 8 and 20:

You may be drinking every day, having blackouts, and feeling guilt or remorse after drinking. Once you start drinking, it may be difficult for you to stop, and you may be having trouble following through on your responsibilities because of your drinking. You may have even hurt someone in your life as a result of your drinking.

Scores between 21 and 40:

Your drinking has now reached a very dangerous level. Almost all the questions on the measure probably sound very familiar to you. There may be days when you cannot even get out of bed because of your drinking, and you may have trouble thinking about anything else. You may be experiencing many physical problems as a result of your heavy drinking.

Drug Use Questionnaire

In the statements below, the term **DRUG ABUSE** refers to the use of drugs not including alcohol during the past 12 months. Carefully read each question and determine if your answer is YES or NO, then circle the appropriate response.

- | | | | |
|--|-----|----|-------|
| 1) Have you used drugs other than those required for medical reasons? | Yes | No | |
| | 1 | 0 | _____ |
| 2) Do you abuse more than one drug at a time? | Yes | No | |
| | 1 | 0 | _____ |
| 3) Are you always able to stop using drugs when you want to? | Yes | No | |
| | 0 | 1 | _____ |
| 4) Have you had "blackouts" or "flashbacks" as a result of drug use? | Yes | No | |
| | 1 | 0 | _____ |
| 5) Do you ever feel bad or guilty about your drug use? | Yes | No | |
| | 1 | 0 | _____ |
| 6) Does your spouse (or parents) ever complain about your involvement with drugs? | Yes | No | |
| | 1 | 0 | _____ |
| 7) Have you neglected your family because of your use of drugs? | Yes | No | |
| | 1 | 0 | _____ |
| 8) Have you engage in illegal activities in order to obtain drugs? | Yes | No | |
| | 1 | 0 | _____ |
| 9) Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs? | Yes | No | |
| | 1 | 0 | _____ |
| 10) Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding, etc.)? | Yes | No | |
| | 1 | 0 | _____ |

After completing the questionnaire, for each answer circled, write the corresponding number in the space provided next to the question. Then, add the number and write your total in the Total space.

TOTAL _____

Drug Use Questionnaire Scoring

If you scored 0:

You reported no drug related problems.

If you scored 1-2:

You have reported a low incidence of drug related problems; however, this does not necessarily mean that you are free of drug related problems. Consider the questions on which you endorsed drug related problems to determine what areas of your life are being affected by your drug use.

If you scored 3-5:

You have reported a moderate number of drug related problems. Your drug use is affecting several areas of your life. You will likely meet diagnostic criteria for a diagnosis of drug abuse. You may want to consider seeking treatment for your drug abuse.

If you scored 6-8:

You have reported a substantial number of drug related problems. You may want to consider seeking intensive treatment in order to change your current level of drug abuse.

If you scored 9-10:

You have reported a severe level of drug related problems that are likely impacting you in every area of your life. You may want to consider seeking intensive treatment in order to change your current level of drug abuse.

Facilitator's Adherence Checklist: Substance Abuse Session

Please check off the following items that were covered in the session. Please note any items of relevance for each session component. In particular, if there were barriers to the completion of certain items, please note in the space provided the obstacles that presented a problem.

- Administration of Stages of Change measures pre- and post- intervention

- Review of group rules

- Discussion of reactions from previous session

- Introduction of session topic

- Administration/Discussion of AUDIT and DAST-10

- Psychoeducation about substance abuse

- Decisional Balance exercise

Looking Forward exercise

Discussion/Ratings of Commitment/Confidence

Developing behavioral strategies

Elicit reactions to the session

From "An Assessment Strategy for a Spirituality Group Intervention" by Romesser, J. M., 2005, Psy.D. dissertation, Pepperdine University, United States -- California. Retrieved June 16, 2008, from Dissertations & Theses @ Pepperdine University - SCEL C database. (Publication No. AAT 3204843). Copyright 2006 by ProQuest Information and Learning Company. Adapted with permission from the author.

Session 6: Tobacco Use

Measures included:

Tobacco Use Stages of Change Measure
Fagerström Test for Nicotine Dependence
Facilitator's Adherence Checklist

Tobacco Use Stages of Change Measure

For the purpose of this measure, **TOBACCO USE** is defined as smoking cigars, cigarettes, and the use of smokeless tobacco.

Please check the box that best fits your current tobacco use:

1. I have not used tobacco for over 6 months.
2. I have not used tobacco for less than 6 months.
3. I am planning to quit using tobacco in the next 30 days.
4. I am thinking about quitting using tobacco in the next 6 months.
5. I am not thinking about quitting using tobacco.
6. I have never used tobacco.

Please circle your current stage of change corresponding to the number circled above.

1. I have not used tobacco in a long time. I am using strategies to prevent relapse. I am in the **MAINTENANCE** stage.
2. I have quit using tobacco. I am taking steps to avoid triggers and seek help from others. I am in the **ACTION** stage.
3. I am seriously considering quitting using tobacco. I can see the benefits of quitting and have a plan to quit. I am in the **PREPARATION** stage.
4. I am considering the possibility of quitting using tobacco, but remain unsure. I may be trying small changes. I am in the **CONTEMPLATION** stage.
5. I do not think my tobacco use is a problem. I am not thinking of quitting tobacco use. I am in the **PRECONTEMPLATION** stage.
6. I have never used tobacco. The stages of change model is not applicable to me.

Fagerström Test for Nicotine Dependence

Please circle the answer which best fits your current smoking habits.

1. How soon after you wake up do you smoke your first cigarette?
 a) After 60 minutes (0)
 b) 31-60 minutes (1)
 c) 6-30 minutes (2)
 d) Within 5 minutes (3) _____

2. Do you find it difficult to refrain from smoking in places where it is forbidden?
 No (0) Yes (1) _____

3. Which cigarette would you hate most to give up?
 a) The first in the morning (1)
 b) Any other (0) _____

4. How many cigarettes per day do you smoke?
 a) 10 or less (0)
 b) 11-20 (1)
 c) 21-30 (2)
 d) 31 or more (3) _____

5. Do you smoke more frequently during the first hours after awakening than during the rest of the day?
 No (0) Yes (1) _____

6. Do you smoke even if you are so ill that you are in bed most of the day?
 No (0) Yes (1) _____

After completing the questionnaire, for each answer circled write the corresponding number in the space provided next to the question. Then add the numbers and write your total in the Total space below.

TOTAL _____

Fagerström Test for Nicotine Dependence Scoring

Score	Level of Dependence
0-2	Very low dependence
3-4	Low dependence
5	Medium dependence
6-7	High dependence
8-10	Very high dependence

Scores under 5:

Your level of nicotine dependence is still low. If desired, you should act now to change your smoking habits before your level of dependence increases.

Scores of 5:

Your level of nicotine dependence is moderate. If you don't quit soon, your level of dependence on nicotine will increase until you may be seriously addicted.

Scores over 7:

Your level of dependence is high. You aren't in control of your smoking – it is in control of you. When you make the decision to quit, you may want to talk with your doctor about nicotine replacement therapy or other medications to help you break your addiction.

From "The Fagerström test for nicotine dependence: A revision of the Fagerström Tolerance Questionnaire" by Heatherton, T. F., Kozlowski, L. T., Frecker, R. C., & Fagerström, K. O., 1991, *British Journal of Addiction*, 86(9), 1119–1127. Copied with permission from the author.

Facilitator's Adherence Checklist: Tobacco Use Session

Please check off the following items that were covered in the session. Please note any items of relevance for each session component. In particular, if there were barriers to the completion of certain items, please note in the space provided the obstacles that presented a problem.

- Administration of Stages of Change measures pre- and post- intervention

- Review of group rules

- Discussion of reactions from previous session

- Introduction of session topic

- Administration/Discussion of Fagerström Test for Nicotine Dependence

- Psychoeducation about smoking

- Decisional Balance exercise

Looking Forward exercise

Discussion/Ratings of Commitment/Confidence

Developing behavioral strategies

Elicit reactions to the session

From "An Assessment Strategy for a Spirituality Group Intervention" by Romesser, J. M., 2005, Psy.D. dissertation, Pepperdine University, United States -- California. Retrieved June 16, 2008, from Dissertations & Theses @ Pepperdine University - SCEL C database. (Publication No. AAT 3204843). Copyright 2006 by ProQuest Information and Learning Company. Adapted with permission from the author.

Session 7: Aggressive Behavior/Gun Safety

Measures included:

Aggression Stages of Change Measure

Gun Safety Stages of Change Measure

Aggressive Behavior Questionnaire

Firearm Safety Questionnaire

Facilitator's Adherence Checklist

Aggression Stages of Change Measure

For the purpose of this measure, **AGGRESSIVE DRIVING** is defined as verbal outbursts or physical gestures while driving; tailgating, cutting off, or chasing other drivers; driving under the influence; or intentionally driving your vehicle into another object.

Please check the box that best fits your current driving behavior:

1. I have not driven aggressively for over 6 months.
2. I have not driven aggressively for less than 6 months.
3. I plan stop driving aggressively in the next 30 days.
4. I plan to stop driving aggressively in the next 6 months.
5. I don't think my aggressive driving is a problem.
6. I do not drive.

Please circle your current stage of change corresponding to the number circled above.

1. I have not driven aggressively in a long time. I am in the **MAINTENANCE** stage.
 2. I have stopped driving aggressively. I am in the **ACTION** stage.
 3. I am seriously considering stopping driving aggressively. I can see the benefits of stopping and have a plan to stop. I am in the **PREPARATION** stage.
 4. I am considering the possibility of changing my aggressive driving, but remain unsure. I may be trying small changes. I am in the **CONTEMPLATION** stage.
 5. I do not think my aggressive driving is a problem. I am not thinking of stopping. I am in the **PRECONTEMPLATION** stage.
 6. I have never driven aggressively. The stages of change model is not applicable to me.
-

For the purpose of this measure, **AGGRESSIVE BEHAVIOR** is defined as making verbal threats to others, assaulting others, engaging in acts of domestic violence, or intentionally damaging property.

Please check the box that best fits your current aggressive behavior:

1. I have not been behaving aggressively for over 6 months.
2. I have not been behaving aggressively for less than 6 months.
3. I plan to stop behaving aggressively in the next 30 days.
4. I plan to stop behaving aggressively in the next 6 months.
5. I don't think my aggressive behavior is a problem.
6. I have never behaved aggressively.

Please circle your current stage of change corresponding to the number circled above.

1. I have not been aggressive in a long time. I am using strategies to prevent aggression. I am in the **MAINTENANCE** stage.
2. I have stopped being aggressive. I am taking steps to avoid triggers and seek help from others. I am in the **ACTION** stage.
3. I am seriously considering changing my aggressive behavior. I can see the benefits of stopping and have a plan to stop. I am in the **PREPARATION** stage.
4. I am considering the possibility of changing my aggressive behavior, but remain unsure. I may be trying small changes. I am in the **CONTEMPLATION** stage.
5. I do not think my aggressive behavior is a problem. I am not thinking of changing. I am in the **PRECONTEMPLATION** stage.
6. I have never behaved aggressively. The stages of change model is not applicable to me.

Gun Safety Stages of Change Measure

For the purpose of this measure, **GUN SAFETY** is defined as always keeping your gun in a gun safe, lock box, or locked cabinet or drawer, always keeping your gun unloaded until it is ready to use, and always storing the bullets in a separate locked area.

Please check the box that best fits your current gun safety behavior:

1. I have implemented gun safety measures for over 6 months.
 2. I have implemented gun safety measures for less than 6 months.
 3. I plan to begin to implement gun safety measures in the next 30 days.
 4. I plan to begin to implement gun safety measures in the next 6 months.
 5. I don't plan to begin to implement gun safety measures.
 6. I do not own a gun.
-

Please circle your current stage of change corresponding to the number circled above.

1. I have implemented gun safety measures for a long time. I am in the **MAINTENANCE** stage.
2. I have implemented gun safety measures. I am in the **ACTION** stage.
3. I am seriously considering implementing gun safety measures. I can see the benefits of gun safety and have a plan to store my weapon/s safely. I am in the **PREPARATION** stage.
4. I am considering the possibility of changing my gun safety behavior, but remain unsure. I may be trying small changes. I am in the **CONTEMPLATION** stage.
5. I do not think my gun safety behavior is a problem. I am not thinking of changing. I am in the **PRECONTEMPLATION** stage.
6. I do not own a gun. The stages of change model is not applicable to me.

Aggressive Behavior Questionnaire

For the purposes of this assessment measure, **AGGRESSIVE BEHAVIOR** is defined as: 1) making verbal threats to others, 2) assaulting others, 3) damaging property, and 4) aggressive driving.

- 1) Have you made verbal threats to others?
 - a. Yes, in the last year.
 - b. Yes, but over one year ago.
 - c. No, I have never done so.
- 2) Have you assaulted others?
 - a. Yes, in the last year.
 - b. Yes, but over one year ago.
 - c. No, I have never done so.
- 3) Have you intentionally damaged property?
 - a. Yes, in the last year.
 - b. Yes, but over one year ago.
 - c. No, I have never done so.
- 4) Have you engaged in verbal outbursts or made angry hand gestures while driving?
 - a. Yes, in the last year.
 - b. Yes, but over one year ago.
 - c. No, I have never done so.
- 5) Have you tailgated, intentionally cut-off, or chased other drivers?
 - a. Yes, in the last year.
 - b. Yes, but over one year ago.
 - c. No, I have never done so.
- 6) Have you driven after drinking or taking psychoactive drugs?
 - a. Yes, in the last year.
 - b. Yes, but over one year ago.
 - c. No, I have never done so.
- 7) Have you intentionally driven your vehicle into another object (e.g. another car, tree, etc.)?
 - a. Yes, in the last year.
 - b. Yes, but over one year ago.
 - c. No, I have never done so.
- 8) In the past year, how frequently have you behaved in an aggressive manner (as defined above)?

Never

Sometimes

Very Regularly

0

1

2

3

4

5

6

Aggressive Behavior Questionnaire Scoring

Question 1-3:

Questions 1-3 refer to aggressive behavior including verbal threats, assault, and intentional damage of property. These questions seek to look at the severity of aggressive acts as reflected by their recent occurrence.

For those questions to which you chose to answer C, you do not appear to have difficulty with aggression in these areas.

For those questions to which you answered B, you have had difficulty controlling your aggression in these areas in the past, but have taken steps to control your aggression and have not acted aggressively in a long time.

For those questions to which you answered C, you have difficulty with aggression in these areas. At times your aggression is not under your control. You may need to seek help in order to learn to control your aggression.

Question 4-7:

Questions 4-7 refer to aggressive driving behavior. These questions increase in the severity of their level of aggression. Question 4 refers to the least aggressive driving behavior on this measure. The level of severity increases to Question 7, which reflects the most severe aggressive driving behavior measured here. Please look at your answers at Questions 4-7 and note which behaviors you answered with A or B.

For those questions to which you answered C, you have not been engaging in this type of aggressive driving.

For those questions to which you answered B, you have been engaging in aggressive driving; however, you have been taking steps to curb your aggressive driving and have not engaged in aggressive driving for a long time.

For those questions to which you answered C, you have been engaging in aggressive driving. At times, your aggressive driving is not under control. You may need to seek help to learn to control your aggression.

Question 8:

Veterans with PTSD are much more likely to engage in aggressive acts than veterans without PTSD or the general population. Please note how often you have behaved in an aggressive manner in the last year. The more frequently you have engaged in aggressive acts, the more severe your difficulty managing your aggression and the more risk you pose to yourself and others.

Firearm Safety Questionnaire

For the purposes of this questionnaire, **FIREARM SAFETY** is defined as: 1) keeping your firearm(s) unloaded, 2) keeping your firearm(s) in a locked safe, cabinet, or case, 3) keeping your firearm(s) protected with trigger, action or magazine locks, and 4) keeping bullets in a locked place, separate from the firearm(s).

- 1) Do you keep all of your firearms in a safe manner (as defined above) whenever they are not actively in use? (active use does not include having the gun out “for protection”)

Yes

No

- 2) Have you kept all of your firearms in a safe manner when they are not in use for the past 6 months?

Yes

No

- 3) Have your friends, family members, or mental health professional ever asked you to get rid of any or all of your firearms?

Yes

No

- 4) In the past, have you ever considered suicide with a firearm?

Yes

No

- 5) In the past, have you ever attempted suicide with a firearm?

Yes

No

- 6) In the past, have you ever considered using a firearm to harm someone (not including during a military or law enforcement job)?

Yes

No

- 7) In the past, have you ever fired a firearm at someone (not including during a military or law enforcement job)?

Yes

No

Firearm Safety Questionnaire Scoring

Question 1 & 2:

If you answered YES to these questions, CONGRATULATIONS! You are keeping your guns in a safe manner and have been doing so for some time. You are promoting safe handling of weapons and decreasing the likelihood of a gun-related accident.

If you answered NO to these questions, you may want to reevaluate your gun safety behaviors. Safe gun safety practices are recommended by the NRA as well as many other organizations to avoid unwanted injuries, damage, or death. In some states, improper gun safety may even be considered a crime.

Question 3-7:

Veterans with PTSD have been shown to be more likely to be aggressive and use substances, both situations in which the likelihood of a gun related accident are increased.

Veterans with PTSD have also been shown to have high rates of depression. A serious symptom of depression may be suicidal thoughts. Most completed suicides happen among men with firearms. When coupled with substance use, the risk of a completed suicide is even higher.

Questions 3 through 7 refer to situations in which you may be at a higher risk of harming yourself or someone else with your firearm. If you checked YES to any of these questions, it may be essential that you maintain good firearm safety practices or that you consider asking someone else to hold your weapons for you.

Facilitator's Adherence Checklist: Aggression and Gun Safety Session

Please check off the following items that were covered in the session. Please note any items of relevance for each session component. In particular, if there were barriers to the completion of certain items, please note in the space provided the obstacles that presented a problem.

- Administration of Stages of Change measures pre- and post- intervention

- Review of group rules

- Discussion of reactions from previous session

- Introduction of session topic

- Administration/Discussion of Aggression and Gun Safety Behavior Questionnaires

- Psychoeducation about aggression, aggressive driving, and gun safety

- Decisional Balance exercise

Looking Forward exercise

Discussion/Ratings of Commitment/Confidence

Developing behavioral strategies

Elicit reactions to the session

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Session 8: Sleep Hygiene

Measures included:

Sleep Hygiene Stages of Change Measure

Sleep Questionnaire

Health Risk Stages of Change Measure

Health Behavior Frequency Measure

Facilitator's Adherence Checklist

Sleep Hygiene Stages of Change Measure

For the purpose of this measure, **SLEEP HYGIENE** is defined as 1) establishing a sleep schedule, 2) avoiding caffeine, alcohol, and cigarettes before bedtime, 3) establishing an appropriate setting in which to sleep, and 4) using the bed and bedroom only for sleep and sex.

Please check the box that best fits your current sleep hygiene:

1. I have been practicing good sleep hygiene for over 6 months.
2. I have been practicing good sleep hygiene for less than 6 months.
3. I plan to begin to practice good sleep hygiene in the next 30 days.
4. I plan to begin to practice good sleep hygiene in the next 6 months.
5. I have no plans to practice good sleep hygiene.
6. I do not have sleep difficulties.

Please circle your current stage of change corresponding to the number circled above.

1. I have been practicing good sleep hygiene for a long time. I am using strategies to continue this behavior. I am in the **MAINTENANCE** stage.
2. I have been practicing good sleep hygiene. I am taking steps to avoid pitfalls or obstacles to poor sleep hygiene. I am in the **ACTION** stage.
3. I am seriously considering changing my sleep behavior. I can see the benefits of good sleep hygiene and have a plan to start. I am in the **PREPARATION** stage.
4. I am considering the possibility of changing my sleep behavior, but remain unsure. I may be trying small changes. I am in the **CONTEMPLATION** stage.
5. I do not want to change my sleep behavior. I am in the **PRECONTEMPLATION** stage.
6. I do not have sleep difficulties. The stages of change model is not applicable to me.

Sleep Questionnaire

1) Do you have difficulty sleeping? Please check all boxes that apply.

- | | |
|---|--|
| <input type="checkbox"/> Difficulty falling asleep | <input type="checkbox"/> Frequent nighttime awakenings |
| <input type="checkbox"/> Inadequate amount of sleep | <input type="checkbox"/> Poor sleep quality |

2) Do you experience excessive daytime sleepiness?

Yes

No

3) How often do you experience sleep difficulties? (e.g. every night, once a month) _____

4) Do you experience:

- | | |
|--|---|
| <input type="checkbox"/> Frequent nightmares | <input type="checkbox"/> Frequent body or limb movement during sleep |
| <input type="checkbox"/> Panic-like awakenings | <input type="checkbox"/> Fears related to sleep (e.g. nightmares, dark) |

5) Please check all that apply: Within 4 hours of bedtime, I...

- | | |
|--|--------------------------------|
| <input type="checkbox"/> Drink beverages containing alcohol | <input type="checkbox"/> Eat |
| <input type="checkbox"/> Drink beverages containing caffeine | <input type="checkbox"/> Smoke |
| <input type="checkbox"/> Use stimulant drugs | |

6) Please check all that apply: In general, I...

- | | |
|--|--|
| <input type="checkbox"/> Get limited exercise | <input type="checkbox"/> Watch television or work in bed |
| <input type="checkbox"/> Find my mind races or worries in bed | <input type="checkbox"/> Take frequent daytime naps |
| <input type="checkbox"/> Have an inconsistent wake and/or sleep schedule | |

Sleep Questionnaire Scoring

Question 1-3:

If you experience any of these symptoms on a regular basis, have done so for at least one month, and if they impact your daily functioning, you may be experiencing sleep disturbances. Sleep disturbances can be caused by a variety of different things such as a problem with your sleep-wake cycle, a general medical condition, anxiety or depression, or substance use. If you are experiencing sleep difficulties, you may want to have a thorough sleep evaluation.

Question 4:

These sleep disturbances are commonly experienced by veterans with PTSD and have been shown to be related to the PTSD diagnosis. If you checked any of these boxes, your sleep disturbance may be related to your trauma experience.

Question 5 & 6:

Many sleep difficulties can be remedied by practicing good sleep hygiene. If you checked any of these boxes, your sleep habits may be contributing to your difficulty sleeping. You may want to consider changing your sleep related behavior in order to create an environment that supports healthy sleep. You may want to consider seeing a psychologist who can help you create a behavioral plan to assist with these changes.

Health Risk Stages of Change Measure

You have successfully completed the Live Long and Prosper group. You have learned about health risk behaviors that are particularly relevant to veterans with PTSD, increased your awareness of your own engagement in health-risk behaviors, and reflected on your own willingness or need to change you behavior.

Please take a moment to consider any current behavior in which you engage that may have a negative impact on your health. In particular, take time to reflect on the following: your diet, level of engagement in exercise, sleep problems, substance use, smoking, unsafe sex practices, level of aggression, and gun safety.

Please circle the number that best fits your current health related behavior:

1. I have been engaging in behavior that has positive health impacts regularly for over 6 months.
 2. I have been engaging in behavior that has positive health impacts for less than 6 months.
 3. I plan to begin to engage in behavior that has positive health impacts in the next 30 days.
 4. I plan to begin to engage in behavior that has positive health impacts in the next 6 months.
 5. I have no plans to begin engaging in behaviors that have positive health impacts.
 6. I have always engaged in behavior that has positive health impacts.
-

Please circle your current stage of change that corresponds to the the number circled above.

1. I have been engaging in behavior that has positive health impacts regularly for a long time. I am using strategies to continue this behavior. I am in the **MAINTENANCE** stage.
2. I have been engaging in behavior that has positive health impacts. I am taking steps to avoid pitfalls or obstacles to my engagement in these positive behaviors. I am in the **ACTION** stage.
3. I am seriously considering beginning to engage in behavior that has positive health impacts. I can see the benefits these behaviors and have a plan to start. I am in the **PREPARATION** stage.
4. I am considering the possibility of engaging in behaviors that have positive health impacts, but remain unsure. I may be trying small changes. I am in the **CONTEMPLATION** stage.
5. I do not want to change my behavior to engage in those with positive health impacts. I am in the **PRECONTEMPLATION** stage.
6. I have always engaged in behavior that has positive health impacts. The stages of change model is not applicable to me.

Health Behavior Frequency Measure

This measure is designed to help determine your current engagement in a variety of different behaviors that can impact on your health. Please circle the response that best fits your current level of engagement in these behaviors. Please be as honest as possible.

- 1) How often do you incorporate these foods into your diet? Please circle the response that best describes your diet.

Fruits	Never/Rarely	Sometimes	Daily
Vegetables	Never/Rarely	Sometimes	Daily
Low-fat or Fat-free Dairy Products	Never/Rarely	Sometimes	Daily
Lean Meats (e.g. chicken or fish rather than steak)	Never/Rarely	Sometimes	Daily
Whole Grains (e.g. brown rice, whole grain bread)	Never/Rarely	Sometimes	Daily

- 2) How often do you engage in:

- a) Light intensity activities (e.g. casual walking, taking out the trash) per week?

Never 1 time 2 times 3 times 4 times 5 or more

- b) Moderate intensity activities (e.g. brisk walking) per week?

Never 1 time 2 times 3 times 4 times 5 or more

- c) Vigorous intensity activities (e.g. jogging, swimming laps) per week?

Never 1 time 2 times 3 times 4 times 5 or more

- d) Strengthening activities (e.g. sit-ups, weight lifting) per week?

Never 1 time 2 times 3 times 4 times 5 or more

3) Do you have difficulty falling or staying asleep?

Yes

No

4) On average, how many hours of sleep do you get each night? _____

5) Have you ever been tested for HIV or Hepatitis C?

Yes

No

6) Have you engaged in unprotected sex (i.e. oral, anal, or vaginal sex without a condom)?

Yes

No

7) If so, how frequently do you engage in unprotected sex?

Almost Never

Sometimes

Almost Always

Every time

8) Have you made verbal threats to others?

Yes

No

If so, how often?

Rarely

Sometimes

Very Regularly

9) Have you assaulted others?

Yes

No

If so, how often?

Rarely

Sometimes

Very Regularly

10) Have you intentionally damaged property?

Yes

No

If so, how often?

Rarely

Sometimes

Very Regularly

11) Have you engaged in aggressive driving (e.g. verbal outbursts, angry hand gestures, tailgating, driving under the influence, intentionally driving your vehicle into another object?)

Yes

No

If so, how often?

Rarely

Sometimes

Very Regularly

12) Do you own firearms?

Yes

No

13) If you own a firearm, do you keep all of your firearms in a safe manner (e.g. unloaded, in a locked area with protected locks and the bullets separate from the firearms)?

Yes

No

14) Do you drink alcohol?

Yes

No

15) If you drink alcohol, how often do you have a drink?

Monthly or less 2-4 times a month 2-3 times a week 4 or more times a week

16) On a typical day, how many drinks do you have?

1 or 2

3 or 4

5 or 6

7 to 9

10 or more

17) How often do you have 6 or more drinks on one occasion?

Never

Less than monthly

Monthly

Weekly

Daily or almost daily

18) Have you used drugs other than those required for medical reasons (e.g. abuse of prescription medication or illegal drugs)?

Yes

No

19) If you use drugs, how often do you use them?

Monthly or less 2-4 times a month 2-3 times a week 4 or more times a week

20) Do you smoke cigarettes?

Yes

No

21) How many cigarettes do you smoke per day?

10 or less

11-20

21-30

31 or more

Thank you for completing this measure. Please return it to your group facilitator.

Facilitator's Adherence Checklist: Sleep Session

Please check off the following items that were covered in the session. Please note any items of relevance for each session component. In particular, if there were barriers to the completion of certain items, please note in the space provided the obstacles that presented a problem.

- Administration of Stages of Change measures pre- and post- intervention

- Review of group rules

- Discussion of reactions from previous session

- Introduction of session topic

- Administration/Discussion of Sleep Hygiene Questionnaire

- Psychoeducation about sleep problems and sleep hygiene

- Decisional Balance exercise

Looking Forward exercise

Discussion/Ratings of Commitment/Confidence

Developing behavioral strategies

Administration of Health Risk Stages of Change and Health Risk Behavior Measures

Elicit reactions to the session/intervention

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