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The Rehabilitative Benefits of a Golf Clinic for Active Duty Military Personnel and Veterans with Disabilities: The Enhancement of Self-Efficacy and Health-Related Variables

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Abstract

Self-efficacy is associated with a person's level of confidence in adequately performing tasks, and has implications for health behaviors among persons with disabilities who are at higher risk for poor physical and mental health than the general population. Prospective research studies investigating the therapeutic benefits of sports for enhancing self-efficacy, particularly among persons with disabilities, are few. The following prospective study investigated the benefits of adaptive golf for increasing self-efficacy among active duty military personnel and veterans with disabilities, as well as its impact on their physical and mental health.

The study enrolled 41 participants of whom 13 completed an adaptive golf 8-week program. Participant mean age was 36.2 years, 78% were males, and 22% were females. Results indicated no statistically significant changes on self-efficacy measures after an 8-week golf clinic rehabilitation program. A trend, however, toward enhanced golf self-efficacy was observed at the conclusion of the golf clinic program. Also, at the end of the program, no statistically significant

changes were observed for self-reported levels of fatigue, pain intensity, pain frequency, anxiety, or depression. Even so, change in a therapeutic direction was observed for these health-related variables. The lack of statistically significant results may be attributed to a small sample size. Implications for further study were examined, and the potential factors underlying the low retention rate in the golf clinic program were explored.

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Chapter 1

Introduction

A sedentary lifestyle is a risk factor for a multitude of health problems including poor mental health, heart disease, stroke, cancer, and premature death. For this reason, the prevalence of physical inactivity among Americans and other peoples of industrialized nations is particularly alarming. (Taylor, Pietrobon, Pan, Huff, & Higgins, 2004; U.S. Department of Health and Human Services [USDHHS], 2008, 2010; World Health Organization [WHO], 2006). Research shows that persons with disabilities have less regular physical activity than persons without disabilities placing them at greater risk for poor health than the general population (Centers for Disease Control and Prevention, 2010). Similarly, persons with mental illness engage in less physical exercise than non-psychiatric populations (Chwastiak, Rosenheck, & Kazis, 2011; Osborn, Nazareth, & King, 2007; Patten, Williams, Lavorato, & Eliasziw, 2009). Therefore, it is not surprising that disabled veterans returning from Operation Iraqi Freedom (OIF), Operation Enduring Freedom (OEF), and Operation New Dawn (OND), are at higher risk for poor physical and psychological health (U.S. Department of Veterans Affairs (DVA), 2011).

As of April 25, 2014, 51,956 service members have been wounded in action in support of the Global War on Terror (GWOT) (U.S. Department of Defense, 2014). Although these numbers are high, they insufficiently capture the prevalence of service-connected health problems among GWOT Veterans (Mental Health Advisory Team 9, 2013). From 2000 to January of 2014, for example, the Defense and Veterans Brain Injury Center recorded 287,911

cases of traumatic brain injury (TBI) of which 30,543 cases were classified as moderate to severe TBIs (Fischer, 2014). Disability claims awarded by the Veterans Benefits Administration reveal 182,790 GWOT Veterans were classified as having a 60 to 100 percent disability as of 2011. Equally striking is the fact that of the 493,888 GWOT Veterans receiving service-connected disability benefits, a total of 115,108 received disability compensation for post-traumatic stress disorder (PTSD) as of 2011 (DVA, 2011). Clearly, the prevalence of physical disability and mental illness among GWOT Veterans is substantial and places them at higher risk of leading sedentary lives. For this reason, research focusing on effective rehabilitative interventions that promote physical and psychological health is imperative.

Studies have demonstrated that exercise can help reduce depression among clinically and non-clinically depressed persons (Dunn, Trivedi, Kampert, Clark, & Chambliss, 2005; Mather et al., 2002; Motl et al., 2005; Trivedi, Greer, Grannemann, Chambliss, & Jordan, 2006). For instance, using a randomized-controlled trial, Blumenthal et al. (2007) demonstrated that 30 minutes of supervised aerobic exercise three times a week for four months led to depression remission among 45% of persons diagnosed with major depressive disorder. Evidence also suggests that exercise promotes mental wellbeing among persons with a physical disability (Giacobbi et al., 2006; Ginis et al., 2003; USDHHS, 2008). Hicks et al. (2003) conducted a randomized-controlled trial where spinal cord injured participants engaged in bi-weekly resistance and aerobic exercise; they found improvements in stress and perceived quality of life at the end of nine months.

Although exercise has been identified as having antidepressant and anxiolytic effects (Rethorst, Wipfli, & Landers, 2009; Wipfli, Landers, Nagoshi, & Ringenbach, 2011), the mental

health benefits of participating in organized sports among adults have not been well studied; this is especially true for adults with disabilities. Several organizations such as the U.S. Department of Veterans Affairs, Disabled Sports USA, Wounded Warrior Project, and Paralyzed Veterans of America promote a variety of rehabilitative sports camps for wounded veterans. Although the personal testimonies of veterans' transformative rehabilitative experiences are highlighted to support these programs (DVA, 2012), quantitative research to better understand the rehabilitative and psychosocial benefits of sporting activities has been lacking.

Research on the psychosocial benefits of organized sports among adult populations has suffered from a variety of shortcomings. Some sports studies have included forms of physical activity that are not classified as a sport such as fitness training and walking, making it difficult to distinguish the benefits of organized sports compared to other modes of physical activity (Blinde & Taub, 1999; Kars, Hofman, Geertzen, Pepping, & Dekker, 2009; Tatar, 2010). Studies that have focused solely on organized sports have combined a variety of sports in their investigations, which disallows an understanding of the psychosocial benefits of specific sports activities (Eime, Harvey, Brown, & Payne, 2010; Hanson, Nabavi, & Yuen, 2001; Kennedy, Taylor, & Hindson, 2006; Kim, Choi, & Davis, 2010; McVeigh, Hitzig, & Craven, 2009; Sporner et al., 2009). As an example, Asztalos et al. (2009) investigated the differential affects of five types of physical activity, including sports participation, on perceived stress and psychological distress. Sports participation, conceptualized from a list of 196 different sports, was found to be the only form of physical activity inversely related to perceived stress and psychological distress among a sample of 1,919 participants.

Furthermore, most investigations on the psychosocial benefits of organized sports for disabled adults, in particular, are either retrospective or cross-sectional designs making it difficult to establish causality (Adnan, McKenzie, & Miyahara, 2001; Campbell & Jones, 2002; Greenwood, Dzewaltowski, & French, 1990; Martin, 2008; McVeigh et al., 2009; Muraki, Tsunawake, Hiramatsu, & Yamasaki, 2000; Paulsen, French, & Sherrill, 1990; Tasiemski & Brewer, 2011; Valliant, Bezzubyk, Daley, & Asu, 1985). From a research perspective, there is clearly a need to better understand the psychosocial benefits of specific organized sports activities among adults, especially, disabled veterans (Cornett & Van Puymbroeck, 2010; Slater & Meade, 2004). From a clinical standpoint, understanding the differential benefits of different sporting activities to optimize treatment effectiveness is an attractive proposition because many persons with disabilities need tailored exercise prescriptions that match their clinical status using various exercise modalities, intensities, and duration. Unequivocally, further research is needed to elucidate the differential benefits of diverse forms of physical activity (Bragaru, Dekker, Geertzen, & Dijkstra, 2011; Durstine et al., 2000).

The present study examined the effectiveness of the sport of golf in promoting the rehabilitation of disabled veterans. In this research, the term "sport" refers to an organized individual or team activity that is recreational and or competitive in nature (e.g. wheelchair tennis, quad rugby, and fly-fishing). The term "disability" is understood in accordance with the International Classification of Functioning, Disability and Health (ICF), which states that disability consists of impairments, activity limitations, and or participation restrictions in any area of life (WHO, 2011). Examples of common disabilities among GWOT veterans include musculoskeletal impairments, TBI, and PTSD (DVA, 2011; Fischer, 2014).

In conformity with usage adopted by WHO, disability is conceptualized within a biopsychosocial framework. A person with PTSD, who has difficulty executing certain activities or is confronted by barriers to employment because of his illness, would be considered disabled using the ICF classification. The term "rehabilitation" as employed by the WHO, is defined as "a set of measures, which enables people with disabilities to achieve and maintain optimal functioning in their environments" (2010, p.8). Any sports program designed to promote mobility, social interaction, and mental wellbeing would be considered a rehabilitative intervention based on this conceptualization.

As noted above but stated more precisely here, the psychosocial and rehabilitative benefits of an 8-week golf clinic for disabled veterans was the focus of this study. Several aspects of the clinic are noteworthy. The golf clinic was a supervised activity program that offered a socially interactive group instructional environment, and also provided extensive individual performance-based feedback. The golf clinic incorporated verbal reinforcement strategies and modeling as participants observed others master similarly challenging tasks. A different golf skill was taught each week including: putting, chipping, pitching, short-irons, fairway woods, driver, and mental strategizing. Each technical session was approximately 90 minutes in length. In addition, a functional movement screening was conducted to evaluate the participant's mobility, stability, balance- coordination, and muscular endurance and power.

The program also included six 30-minute educational sessions on topics such as pain management, nutrition, yoga, PTSD, and TBI. Only one educational session was taught in any given week. Participants were encouraged to bring their spouse or significant other including children. Volunteers cared for and entertained children while the disabled veteran and his/her

significant other participated in the golf clinic. Finally, lunch was provided for all the participants followed by individual practice time.

Golf differs from many other sports because of its outdoor setting, low physical intensity, moderate level of concentration, high frequency of utilizing problem-solving skills, moderate level of attention to physical mechanics, and the type of skills required to perform the activity. Also in golf, the spatial challenges are considerable with such tasks as estimating the slope of a green, the position of pins, distances between holes, and the positioning of hazards such as sand traps, trees, and ponds. Further, these features vary from one hole to the next and across different golf courses. The challenging aspects of the sport along with its serene atmosphere, self-paced format, and high status worldwide can potentially make golf an ideal sport for accommodating persons with physical and psychological limitations.

The purpose of this study was to investigate whether a golf clinic is an effective rehabilitative intervention for promoting wellbeing among disabled veterans as measured by improvements in self-efficacy. Self-efficacy has been identified as one of the primary determinants influencing whether a person adopts and maintains a physically active lifestyle (Bandura, 1997; Levy, Polman, & Clough, 2008; McAuley & Blissmer, 2000; McAuley, Jerome, Marquez, Elavsky, & Blissmer, 2003; McAuley, Lox, and Duncan, 1993; Schwarzer, Luszczynska, Ziegelmann, Scholz, & Lippke, 2008). According to Albert Bandura (1997, p.316),

> People with similar levels of physical impairment can achieve different functional outcomes depending on their efficacy beliefs…Even in the case of severe permanent impairment, where only partial recovery is possible, psychosocial factors will affect how much of the remaining functional capacity is realized.

The actual skills a person possesses are not as important as the judgments one makes about those skills. These judgments determine the activities a person is motivated to avoid, initiate, and persist in when confronted with challenges (Bandura, 1997).

Self-efficacy is a belief about one's capability to engage in a particular course of action to effectively manage environmental demands. For example, persons with low self-efficacy to perform activities of daily living (ADL) might quickly give up attempts to bathe, dress, and groom themselves. Disabled veterans, who may be experiencing a multitude of symptoms such as pain, fatigue, stress, depression, poor memory and concentration, and poor self-image, are at particular risk of developing low self-efficacy perceptions across a broad spectrum of health behaviors. For this reason, it is expedient to investigate how particular activities such as golf can enhance self-efficacy perceptions among disabled veterans. Self-efficacy can be investigated as either an outcome of physical activity and or a determinant of physical activity (Bandura, 1997). Exercise has been shown to increase self-efficacy perceptions; in fact, as little as one 10-minute bout of treadmill exercise has demonstrated measurable increases in self-efficacy levels (McAuley & Blissmer, 2000; Rudolph & Butki, 1998).

Research on sports and its enhancing affect on self-efficacy are limited, however, consisting mostly of retrospective and cross-sectional studies. Greenwood et al. (1990) compared tennis wheelchair athletes with wheelchair non-athletes, and found that tennis wheelchair athletes scored higher on mood and self-efficacy measures. However, as Greenwood and colleagues remarked, "The wheelchair tennis participants may have had higher mood states and self-efficacy prior to sport participation" because the data were correlational and reciprocal determinism effects could not be ruled out (p. 20). Another weakness in the study is the absence

of a pre-post test design that captures the stability of the factors being measured. It is unclear to what extent the elevated mood levels found among wheelchair athletes were characteristic of how they were feeling at the time of testing. Greenwood and colleagues (1990) tested the athletes prior to the conclusion of a wheelchair tennis championship tournament.

In a similar study, Adnan et al. (2001) compared quadriplegic rugby athletes to quadriplegic persons without rugby experience on measures of self-efficacy related to ADL skills. Rugby athletes were recruited from the New Zealand National Quad Rugby championships and control group participants were recruited from the spinal units of two major hospitals. The study found that quadriplegic rugby athletes scored higher on self-efficacy on only 4 of 28 ADL skills. These unimpressive results call into question whether the sport of rugby was indeed a determinant of the higher self-efficacy scores. The results are limited further by the fact that the study lacked a pre-post test design to measure the degree of change resulting from participation in the sport of rugby. Most other studies do not directly measure the effect of sports on enhancing self-efficacy; rather, they use self-efficacy as a determinant of sports behavior (Lowther, Lane, & Lane, 2002; Martin, 2008). Aside from the research conducted by Greenwood et al. (1990) and Adnan et al. (2001), no other quantitative study on self-efficacy as an outcome of sports participation has been undertaken using disabled adults.

Recently, Lundberg, Bennett, & Smith (2011) conducted a prospective study investigating the effects of an adaptive sport recreation program for disabled veterans on various psychosocial variables including perceived competence. Participants had multiple acquired disabilities including: PTSD, TBI, visual impairments, amputations, spinal cord injury, and depression. In this study, three groups of veterans participated in different recreational program

activities at different times of the year. The first group enjoyed five days of water skiing, kayaking, river rafting, canoeing, and fly-fishing; the second group participated in a five-day fly-fishing camp; and the third group was involved in ski/snowboarding, ice skating, and Nordic skiing.

The purpose of the study was to investigate the impact of the recreation program on mood states, quality of life, and perceived competence of disabled veterans. Results indicated no improvements on quality of life measures; however, improvements were observed for tension, depression, and anger as measured by the Profile of Mood States-Brief. Also, measures of perceived competence improved. Although the Lundberg et al. (2011) study does not provide insight into how specific sports benefit disabled adults, it does help advance our understanding of how recreation programs that incorporate multiple outdoor sports activities benefit disabled veterans in their rehabilitation by reducing levels of depression, tension, and anger. However, it is important to acknowledge that psychotherapeutic sessions designed to promote interpersonal skills were incorporated into the sports program; therefore, the results of this study may only generalize to similar programs.

The Lundberg et al. (2011) study is limited in contributing to our understanding of how specific sports impact self-efficacy among disabled adults for the following reasons: (a) multiple sports activities were combined making differential sport contributions indiscernible; (b) daily psychotherapeutic interventions involving journaling, processing, and debriefing were incorporated, confounding the psychosocial effects of the sports activities themselves; and, (c) the study investigated "perceived competence," a concept derived from Self-Determination Theory (Ryan & Deci, 2000), which is operationalized differently than self-efficacy, a concept

derived from Social Cognitive Theory (Bandura, 1997). Clearly, more research is needed to identify the effects of specific sports on promoting self-efficacy among disabled adults (Pensgaard & Sorensen, 2002).

Social Cognitive Theory posits three different levels of perceived self-efficacy, and each level may vary in efficacy strength. For instance, a person may have high self-efficacy for a particular task such as target shooting, a moderate level of self-efficacy for a class of performances in a particular domain such as social relationships, and a low global self-efficacy in terms of achieving life goals. Additionally, self-efficacy may vary within each level so that a person may perceive themselves as efficacious with target shooting but not bowling, social relationships but not academics, or defending a worthy cause as an activist but not inventing renewable energy technology (Bandura, 1997).

Mastery experiences on a particular task can have a powerful effect on areas within a level and across levels of self-efficacy. According to Bandura (1997, p. 53), a powerful mastery experience can lead to a "transformational restructuring of efficacy beliefs" so that the effects of an experience spill over across diverse areas of functioning. The belief that one can affect change may generalize into other undertakings at the personal, social or societal level. Because efficacy beliefs manage affect, thoughts, motivation, and action, promoting experiences that may provide transformational mastery experiences for disabled veterans is a captivating proposition (Bandura, 1997).

In the current research, the following areas of self-efficacy were examined: golf self-efficacy, health self-efficacy, and resiliency self-efficacy. One question investigated was whether disabled veterans would improve on measures of golf self-efficacy and resiliency self-efficacy

after eight weeks of participating in the golf clinic program. Participants were expected to gain confidence in performing golf skills at the end of the golf clinic program. It was also anticipated the golf clinic experience would promote increases in confidence over managing life's stressors, as measured by resiliency self-efficacy.

Improvements in golf self-efficacy were also expected to enhance health self-efficacy. Specifically, as participants perceived themselves as more efficacious in mastering golf skills, it was hypothesized they would develop more confidence in performing health behaviors. Resiliency self-efficacy was expected to predict health self-efficacy levels as well; however, it was hypothesized that golf self-efficacy would better predict health self-efficacy levels. A fourth hypothesis examined was whether participants would experience improvements in perceived levels of fatigue, pain, anxiety, and depression at the conclusion of the golf clinic program.

Chapter 2

Method

Participants

Forty-one participants enrolled in the Salute Military Golf Association Clinic Series (referred to as the "golf clinic" from this point forward) were recruited through a purposive sampling method. The sample consisted of participants recruited from two golf clinics offered in the Fall of 2012 (n = 22) and Spring of 2013 (n = 19). The average age of the total sample was 36.2 years. The proportion of female participants was 22%. The ethnic/racial makeup of the sample was as follows: 39% white, 39% black, 5% Hispanic, 2.5% Asian, 5% other, and 10% who declined to identify an ethnic/racial category. Of the combined subsamples, 49% of participants held active duty status and 51% were retired or discharged from the military at the time of the study. The majority reported various medical conditions as follows: 51% endorsed a PTSD diagnosis in addition to another medical condition, 39% endorsed TBI in addition to another medical condition, 44% endorsed a depressive disorder in addition to another medical condition, and 7% were amputees. Approximately, 95% endorsed having deployed to OIF/OEF or OND theaters of operation. The majority of participants enrolled in the golf clinic continued to receive rehabilitative services from a local military medical facility while enrolled in the eight-week golf clinic program. Transportation for participants to the golf clinic was made possible by Disabled Sports USA, a national nonprofit organization that offers sports rehabilitation programs nationwide.

Veterans enrolled in the golf clinic were recruited to participate in this study when they registered for the golf clinic program on the first day of instruction. Unfortunately, 57% of the participants in the Fall clinic and 54% of participants in the Spring clinic declined to participate in the study, limiting the original sample size to 41. Also unexpected was finding that the majority of participants attended the golf clinic intermittently, and most did not attend the concluding golf session at eight weeks, which was the designated time for post-test data collection. For these reasons, there are pre- and post-test data for only 31% of the participants who enrolled in the study ($n = 13$).

For the fall cohort, 22 participants completed questionnaires prior to starting the golf clinic, and of these, 8 participants attended the concluding golf session; for the spring cohort, initial and final questionnaires were completed by 19 and 5 participants, respectively. While both fall and spring cohorts were included, and each cohort was small in number, a single sample was desirable for conducting statistical analyses. For this reason, comparisons between two cohorts were conducted to determine comparability.

There were no statistically significant group differences found between participants in the Fall and Spring clinics in terms of age ($U = 171.5$, $p = .470$), sex ($\chi^2(1) = 1.92$, $p = .166$), ethnicity ($\chi^2(4) = 7.71$, $p = .103$), military status ($\chi^2(3) = 5.88$, $p = .118$), diagnoses ($\chi^2(4) = 2.30$, $p = .680$), pain frequency ($U = 157.5$, $p = .809$), pain intensity ($t(39) = .96$, $p = .345$), golf self-efficacy ($t(39) = 1.64$, $p = .110$), or resiliency self-efficacy ($t(39) = .03$, $p = .975$). Therefore, the data from the two cohorts were combined.

Instruments

Golf Self-Efficacy Scale (GSE). Participants were asked to respond to 17 items designed

to measure strength of perceived self-efficacy on specific golf tasks. Questions (found in Appendix A) were developed and validated in consultation with a PGA Golf Pro, who was an expert in working with disabled veterans on adaptive golf. The items measure perceived efficacy on golf skills such as putting, chipping, pitching, and driving. A Likert score of 0 is anchored by *cannot do at all* or *don't know* and a score of 11 is anchored by *highly certain can do*. An example item is: "I can sink a 24-inch putt with one shot 80% of the time." The items are task-specific and measured using an 11-point Likert scale in accordance with Bandura's recommendations (Bandura, 1997). Scores for each GSE item were summed and divided by the total number of items to yield an average item score, ranging from 0 to 10. For each item, the higher the score, the greater the level of perceived confidence the participant endorsed in performing the golf skill. The internal consistency of this measure was assessed in this study and found to be excellent with a coefficient alpha of .97.

Resiliency Self-Efficacy Scale (RSE). Developed by Bandura (2006) and based on his Social Cognitive Theory, the RSE consists of 7 items that use an 11-point unipolar Likert scale with 0 anchored by *cannot do at all* and 10 anchored by *highly certain can do*. The scale appears in Appendix B. Internal consistency has been demonstrated to range from .81 to.95 (Martin, 2008). Test-retest reliability was not available from the literature. A sample item is: "I can bounce back after I tried my best and failed". Scores for each item are summed and divided by the total number of items to yield an average item score. Therefore, the range of possible scores is 0 to 10, with a higher score indicating a greater level of perceived confidence in managing life's challenges.

Health Self-Efficacy Scale (HSE). The HSE was developed specifically for this study,

and is composed of two subscales consisting of four items each. The HSE Low Level (HSE-L) subscale was designed to measure a participant's perceived self-efficacy in overcoming low levels of pain and fatigue to perform health behaviors. In a similar way, the HSE High Level (HSE-H) subscale was designed to measure a participant's perceived self-efficacy in overcoming high levels of pain and fatigue to perform health behaviors. The HSE is found in Appendix C. People often engage in unhealthy behaviors to alleviate their fatigue or pain (Lawton & Simpson, 2009; Goebel et al., 2011); for this reason, fatigue and pain were selected as important variables that might be positively affected by the golf clinic experience.

HSE items were graded according to Bandura's recommendations to reduce the response bias effect. A sample item is: "When I feel a high level of fatigue or pain, I can resist the urge to drink alcohol." The veteran population is particularly susceptible to excessive tobacco use and alcohol consumption, which can exacerbate their physical and mental health conditions (Burnett-Zeigler et al., 2011), and so these behaviors have been incorporated into the HSE. For each subscale, scores were summed and divided by the total number of items yielding an average total item score, which could range from 0 to 10. The higher the HSE subscale score, the greater the perceived confidence a participant has in overcoming pain and fatigue, and to engage in healthy behavior. A general score was also obtained for the scale and is referred to as HSE Total (HSE-T). It was computed by averaging the two subscale averages. The internal consistency of the scale was assessed in this study and found to be good with a Chronbach's alpha of .83.

Patient Health Questionnaire (PHQ-4). The PHQ-4 (Kroenke, Spitzer, Williams, & Lowe, 2009) served as a brief anxiety and depression screener consisting of two DSM-IV items for Major Depressive Disorder and two items for Generalized Anxiety Disorder. The PHQ-4 is

found in Appendix D. A study of 3,000 primary care patients demonstrated that a total score of 3 or greater on the depression subscale had 83% sensitivity for major depression, a specificity of 90%, and a positive likelihood ratio of 2.9 (Kroenke & Spitzer, 2002). Another study conducted a confirmatory factor analysis for all four items, which found goodness of fit indices for a two-factor solution (RMSEA = .27; 90% CI = .02 - .03; Loewe et al., 2010).

The strength of association between the PHQ-4 and six subscales of the Medical Outcomes Study Short-Form General Health Survey has been reported as follows, demonstrating adequate concurrent validity: mental health (.80), social functioning (.52), general health perceptions (.48), role functioning (.37), bodily pain (.36), and physical functioning (.36). Also, the internal reliability was adequate ($\alpha > .80$; Kroenke et al., 2009). The PHQ-4 is, therefore, considered a reliable and valid instrument for detecting both depressive and anxiety disorders. The possible range of scores for the PHQ-4 is 0 to 12; subscale scores can be derived from the two depression items and the two anxiety items, so that subscale scores will range from 0 to 6.

Pain Measure. A single item to assess pain was, "In the past week, how much pain have you had?" Participants used an 11-point Likert scale with 0 anchored by *no pain*, 5 anchored by *moderate pain*, and 10 anchored by *very severe pain*. A comparison between the short form McGill Pain Questionnaire (MPQ-SF), consisting of 15 items, and the single pain rating item used in this study has shown a correlation of .92 (El-Baalbaki, Lober, Hudson, Baron, & Thombs, 2011). The single factor model was found to fit as well as the two-factor model of the MPQ-SF, which measures sensory and affective pain.

Multidimensional Fatigue Inventory, 20-item version (MFI-20). In a non-clinical setting, fatigue may refer to the experience one commonly has after inadequate sleep or rest,

mental exertion, or physical exertion; it may also refer to a lack of motivation. Within a clinical setting, fatigue may also indicate the presence of disease or it may be the outcome of a medical intervention. The MFI-20 (Smets, Garssen, Bonke, & Haes, 1995) is a self-report measure using a 5-point Likert response format consisting of 20 items measuring five different dimensions of fatigue: general fatigue, physical fatigue, mental fatigue, reduced activity, and reduced motivation. The MFI-20 is found in Appendix E. The psychometric properties of the instrument were originally established using a clinical, general European sample, and more recently has been used in a study utilizing a US sample (Lin et al., 2009). Results from the original study and the recent U.S. study indicated adequate internal consistency with an average Cronbach's alpha coefficient of .84 and .81, respectively. Convergent validity has been shown to be adequate having correlations with subscales of the Medical Outcomes Survey Form-36 ranging from .48 to .81 (Smets et al., 1995).

Participants in the Fall clinic were given the complete MFI-20. However, because the total administration time of the various surveys was considered too long based on feedback from participants, the MFI-20 was reduced to a one-item measure. The participant was asked to respond to the following item, "I tire easily," using a 5-point Likert scale with anchors *no, that is not true* and *yes, that is true.* Correlations between the selected item and the MFI-20 subscales were calculated in this study and found to be moderate to strong for general fatigue (r = .86, p < .001), physical fatigue (.59, p = .004), mental fatigue (.70, p < .001), reduced activity (.56, p = .007), and reduced motivation (.51, p = .015). The item selected from the MFI-20 was deemed adequate for the purposes of capturing the general experience of fatigue on the basis of face validity. The item, whose score could range from 0 to 5, was retained for statistical analysis on

the basis of the item's moderate to strong correlations with all of the MFI-20 subscales.

Procedure

Approval for this study was obtained from the George Fox University Human Subjects Research Committee and the Salute Military Golf Association Board of Directors. On the first day of instruction, Veterans were personally recruited to participate in the study while registering for the golf clinic program at the registration booth. Once the informed consent procedure was completed and consent forms signed, participants were then verbally asked to complete the following questionnaires provided as a packet 30 minutes prior to their first instructional golf session in the following order: GSE, PHQ-4, RSE, HSE, pain measure, and fatigue measure. Participants completed the packet while seated at foldout patio tables near the golfing range in a large group setting; thus, there were potential distractions. Participants took less than 25 minutes to complete all the forms. These assessment tools were again administered at the eighth and final session of the golf clinic program. The testing conditions were similar at the second administration but took place at another golf facility.

Chapter 3

Results

It was hypothesized that self-efficacy in performing healthy behaviors and managing life's challenges would increase as a result of an adaptive golf clinic experience. To test these two hypotheses, each of the study's self-efficacy measures was analyzed. The mean initial and concluding session scores are found in Table 1 along with the mean change that was obtained, and the level of significance achieved for each analysis. Because the metrics of each measure differed, each measure was analyzed separately using a paired student *t*-test. No statistically significant differences between Time 1 and Time 2 were found for golf self-efficacy (GSE) ($t(12) = -1.97$, $p = .07$, $d = 0.55$), resiliency self-efficacy (RSE) ($t(12) = 0.62$, $p = .55$, $d = 0.17$), health self-efficacy low level (HSE-L) ($t(12) = 0.31$, $p = .76$, $d = 0.09$), health self-efficacy high level (HSE-H) ($t(12) = 0.53$, $p = .60$, $d = 0.15$), and health self-efficacy total (HSE-T) ($t(12) = 0.39$, $p = .76$, $d = 0.11$). Therefore, while there was a trend toward improved golf-self efficacy, overall, there was no support for the notion that the golf clinic experience enhanced perceived feelings of self-efficacy.

The third hypothesis stated that GSE would be a better predictor of health self-efficacy levels compared to RSE. To test this hypothesis, a multiple regression analysis was performed where GSE and RSE were selected as predictor variables and HSE-T as the predicted variable. A Pearson's product-moment correlation indicated a strong correlation between GSE and RSE ($r = .64$, $p = .019$). Even so, the tolerance value of .59 demonstrated an acceptable level of

Table 1

Means and Standard Deviations (in parentheses) of Self-Efficacy Measures

Measure	Session 1 Average Item Score	Session 8 Average Item Score	Session 8 – Session 1 Difference	*p*-value
GSE	4.1 (2.9)	5.5 (2.2)	1.4	.073
RSE	7.3 (2.3)	6.9 (2.0)	- .40	.550
HSE-L	7.8 (1.8)	7.6 (2.5)	- .20	.760
HSE-H	7.3 (2.3)	7.0 (1.8)	- .30	.604
HSE-T	7.6 (1.8)	7.4 (1.9)	- .20	.702

Note. GSE = Golf Self-Efficacy Scale, RSE = Resiliency Self-Efficacy, HSE-L = Health Self-Efficacy for low levels of pain and fatigue, HSE-H = Health Self-Efficacy for high levels of pain and fatigue, HSE-T = Health Self-Efficacy Total.

multicollinearity between the predictor variables. Koenker's studentized Bruesch-Pagan statistic was not statistically significant, indicating no heteroscedasticity in the model ($p = .12$). Using the enter method, a significant model emerged ($F(2, 10) = 5.17$, $p = .029$) with an Adjusted R square of .51 where RSE was found to be a good predictor of HSE-T ($b = .68$, $t(10) = 2.37$, $p = .04$). GSE was not identified as a predictor variable ($b = .048$, $t(10) = 0.17$, $p = .871$); therefore, the hypothesis was not supported.

The fourth hypothesis predicted persons would experience improvements in fatigue, pain, anxiety, and depression at the conclusion of the golf clinic program. The mean initial and concluding session scores for these variables are found in Table 2 along with the mean change

that was obtained, and the level of significance achieved for each analysis. Paired *t*-tests showed no statistically significant pre- versus post-changes for fatigue ($t(12) = 1.59$, $p = .137$, $d = 0.44$), pain intensity ($t(12) = 1.34$, $p = .205$, $d = 0.37$), and anxiety ($t(12) = .38$, $p = .711$, $d = 0.11$). Also, the Wilcoxon related samples test was performed for variables that did not meet assumptions of normality. Results demonstrated no statistically significant differences from the beginning of the program to its conclusion at 8 weeks for depression ($Z = -.38$, $p = .705$, $r = .10$) and pain frequency ($Z = -.77$, $p = .440$, $r = .21$). Thus, the fourth hypothesis also remained unsupported.

Table 2

Means and Standard Deviations (in parentheses) of Various Health Measures

Measure	Session 1 Average Item Score	Session 8 Average Item Score	Session 8 – Session 1 Difference	*p*-value
Fatigue	3.1 (1.3)	2.7 (1.2)	- .4	.137
Pain Intensity	6.3 (2.6)	5.8 (2.2)	- .5	.205
Pain Frequency	7.1 (2.7)	6.9 (2.9)	- .2	.440
Anxiety	2.4 (2.2)	2.2 (1.4)	- .2	.711
Depression	1.9 (1.7)	1.7 (1.8)	- .2	.705

Additional analyses were performed to determine whether differences existed in pain frequency, pain intensity, depression, anxiety, fatigue, and resiliency self-efficacy between persons who only participated in the first assessment at week one verses persons who attended

both assessments at weeks one and eight. As Table 3 demonstrates, statistically significant differences between the groups were not observed on these measures. Tables 4 and 5 show statistically significant correlations between self-efficacy measures and various health measures.

Table 3

Means and Standard Deviations (in parentheses) of Various Health Measures for Participants Based on Attendance to One or Both Golf Clinic Assessments

Measure	Attendance at One Assessment Average Item Score	Attendance at Both Assessments Average Item Score	Difference (in absolute values)	*p*-value
Fatigue	2.8 (1.4)	3.1 (1.3)	0.3	.473
Pain Intensity	5.3 (3.2)	6.3 (2.6)	1.0	.204
Pain Frequency	7.0 (3.8)	7.1 (2.7)	0.1	.643
Anxiety	3.1 (2.1)	2.4 (2.2)	0.7	.395
Depression	1.8 (2.0)	2.1 (1.8)	0.3	.613
RSE	6.9 (2.1)	7.3 (2.3)	0.4	.575

Table 4

Spearman Correlations between Resiliency Self-Efficacy, Health Self-Efficacy Total, Depression, and Anxiety at Time 1

Measure	RSE	HSE-T	Anxiety	Depression
RSE	1	.72***	-.65***	-.69***
HSE-T		1	-.51***	-.57***
Anxiety			1	.79***
Depression				1

Note. *** denotes significance value of $p \leq .001$, two-tailed.

Table 5

Spearman Correlations between Resiliency Self-Efficacy, Health Self-Efficacy Total, Pain Intensity, Pain Frequency, and Fatigue at Time 1

Measure	RSE	HSE-T	Pain Intensity	Pain Frequency	Fatigue
RSE	1	.72***	-.34*	-.23	-.47**
HSE-T		1	-.44**	-.42**	-.39*
Pain Intensity			1	.54***	.44**
Pain Frequency				1	.22
Depression					1

Note. * denotes significance value of $p < .05$, two-tailed; ** denotes significance value of $p < .01$, two-tailed; *** denotes significance value of $p \leq .001$, two-tailed.

Chapter 4

Discussion

The study examined the impact a rehabilitative golf program had on self-efficacy for disabled veterans and active duty military personnel, most of whom had physical and mental health diagnoses. Findings from this current research failed to demonstrate the rehabilitative benefits of the golf clinic program. Although evidence from this study did not confirm rehabilitative adaptive golf enhanced self-efficacy or reduced subjective levels of pain, fatigue, anxiety, or depression at the conclusion of 8 weeks, change was observed in a therapeutic direction for all health-related variables. Nevertheless, the lack of statistically significant results is consistent with other research investigating the benefits of recreational rehabilitative programs for veterans. Hyer, Boyd, Scurfield, Smith, and Burke (1996), for example, found no change in their study on pre-post test measures for PTSD symptomology after a 5-day outdoor activity program.

The study does indicate perceived self-efficacy in overcoming life's challenges is a predictor for self-efficacy perceptions in one's ability to make healthy choices when experiencing pain and fatigue. Also, moderate to strong correlations were found between self-efficacy measures and various health measures as shown in Tables 4 and 5, which is consistent with prior research. Brekke, Hjortdahl, and Kvien (2001), for example, found moderate negative correlations between self-efficacy and pain and fatigue in a sample of patients with rheumatoid arthritis. The present findings may have clinical implications for programs that provide health

services to disabled veterans. For instance, it is well known that psychological factors may influence the outcome of treatment as well as the course of disease in patients. Resiliency self-efficacy as well as health self-efficacy may, for this reason, be worthy of consideration when providing medical treatment to disabled veterans. Of course, more studies are needed to explore this further.

The statistical power for discerning differences between Time 1 and Time 2 for the variables under consideration was weak due to the small sample size. The effect sizes for fatigue ($d = 0.44$), pain intensity ($d = 0.37$), and pain frequency ($r = .21$), for example, suggest that if our sample size had been larger, there may have been a statistically significant difference between Time 1 and 2 on these measures. Interestingly, Table 2 shows decreases in fatigue, pain frequency, pain intensity, depression, and anxiety in a therapeutic direction. Although these decreases are not statistically significant, the probability that all five health measures would show a decline by chance is less than 4%. Test-retest reliability data are not available for these measures to help us determine the extent to which the observed pattern is noteworthy.

The most surprising finding was that participants did not demonstrate statistically significant improvement in their perceived self-efficacy for performing golf techniques. A trend was observed, however, for GSE from Time 1 to Time 2 ($p = .07$), and a moderate effect size ($d = .55$) was found for the differences in means, which suggests that a larger sample size may have shown improvement in self-efficacy perceptions for golf. A factor related to the small sample size as well as low levels of improvement in self-efficacy among participants could be the lack of personalized service delivered in the golf clinic program. Perhaps, participants felt unsupported by staff leading to a high attrition rate. Perceptions of staff support could easily be captured by

administering a support scale at the end of each golf clinic session as a way to determine whether there is a relationship between attendance and perceived staff support.

Pentecost and Taket (2011) found in their study of exercise adherence among persons with chronic conditions, that support was a critical component in exercise adherence. In particular, feeling supervised by the exercise professional and receiving personalized assistance were important aspects of support, especially for persons experiencing pain and discomfort during the activity. In addition, receiving emotional support through encouragement and reassurance increased participants' confidence levels. The fact that approximately 51 participants attended the Fall golf clinic at week one, 22 of whom participated in the study, and only 11 of those original participants attended at week eight, demonstrates a 22% retention rate and a 78% attrition rate. This author was unable to find research on attrition rates for sports participation among the disabled population to determine the rarity of a 78% attrition rate. The lack of research in this area is surprising given the substantial professional costs involved in providing sports rehabilitative services to disabled persons.

The golf clinic advertises itself as providing extensive performance-based feedback, and this is certainly the case if a participant chooses to have individual lessons. In the weekly golf clinic program, instruction is given using a small group format. The clinic program provides activities for children and is open to having veterans bring their significant other or spouse. However, promoting family participation does not appear effective. For example, in the Fall clinic at Time 1, 16 of the 22 participants who enrolled, reported having a spouse or significant other; however, only three participants brought their significant other or spouse to the golf clinic. Of these three participants, two of them returned at the concluding session of the golf clinic.

Results of this study do not clarify whether adaptive sports increases participants' self-efficacy levels in their daily lives. Greenwood et al. (1990) and Adnan et al. (2001) both conducted retrospective studies on disabled persons participating in wheelchair tennis and wheelchair rugby, respectively. Those athletes were compared to control groups, which consisted of non-athletes with similar disabilities. In both studies, disabled athletes reported higher levels of self-efficacy compared to the control groups. However, elevated moods in both studies could have contributed to inflated self-reports on self-efficacy measures. Greenwood et al. (1990), for example, found a statistically significant difference in mood states between athletes and non-athletes. The athletes, however, were surveyed at the beginning of a tennis tournament and non-athletes were surveyed by correspondence, which could have accounted for the difference in mood states.

Similarly, Adnan et al. (2001) found wheelchair athletes endorsed higher levels of self-efficacy on their measures. However, the athletes were assessed at the beginning of a championship game whereas non-athletes were assessed as patients in a hospital setting. Adnan et al. (2001) did not measure mood states in their study nor did they consider this as a confounding variable. The importance of taking mood into account when measuring self-efficacy is evident in the correlational analyses done in this current study with participants (n = 41) at Time 1 shown in Table 4. Depression and anxiety were found to have a moderate to strong correlation with both RSE and HSE-T. Clearly, the beneficial impact of sports on a disabled person's perceived level of self-efficacy in daily life cannot be adequately accounted for in a retrospective study because of the influence mood may have on perceived self-efficacy.

Evidence, then, for the enhancement of self-efficacy in daily living as a result of sports among disabled persons remains uncertain due to the paucity of prospective studies.

The Lundberg et al. (2011) study did demonstrate change in disabled veterans' levels of depression, tension, anger and sense of competence after participating in various outdoor sports activities for five days. However, they incorporated daily psychotherapeutic interventions that involved journaling, processing, and debriefing. It is, therefore, impossible to discern from Lundberg's study to what extent the outdoor activities contributed to improvement in psychosocial factors such as anger and depression.

Chapter 5

Conclusion

The study contributes to the current literature. First, the study sought to measure change over time on psychosocial factors with a research design that provided more useful information than retrospective studies can provide (e.g. Adnan et al., 2001; Greenwood et al., 1990). Second, no quantitative research study measuring the psychosocial benefits of a sport has previously been done using golf. Third, the study adds to a small body of research literature that investigates the benefits of adaptive sports for disabled veterans. Fourth, the golf self-efficacy and health self-efficacy scales developed for this study may be useful instruments in future research studies.

Limitations of this study include a small sample size, lack of a control group, lack of multiple treatment groups, negative attitudes about completing research surveys by veterans wearied by excessive paperwork throughout their rehabilitative journey, and the setting in which the surveys were completed. Some of these obstacles are difficult to overcome. In this study, the small sample size is due to a high attrition rate. Without knowing the causes of the high attrition rate, however, it is difficult to identify solutions. If the underlying cause of attrition is lack of emotional support from staff in the form of reassurance, attention, and encouragement, then staff training may be advisable to help strengthen emotional support skills. This may lower the attrition rate. If the 78% drop out rate found in this study is representative of most sports rehab efforts, identifying variables predictive of drop out, and developing effective retention strategies would be important given the considerable resources typically invested. This, of course, assumes

it can be demonstrated that these sports rehabilitation programs have positive therapeutic outcomes for those completing them.

Finding a control group and or multiple treatment groups is a more difficult obstacle to overcome especially since the veteran population is not easily accessible. The lack of access is unfortunate because research confined to one sports program limits the generalizability of results. The best approach is to collaborate with an agency that has a variety of different programs and a large enough sample to allow for an adequate size control group. Unfortunately, there are many obstacles to acquiring such collaboration. This researcher, for example, was an acquaintance of two executive-level administrators of the Wounded Warrior Project, and was still unable to gain access to their population. And even though this researcher was acquainted with a mid-level employee at Disabled Sports USA, he was not granted access to their population.

Negative perceptions some veterans may have toward participating in a research study may be ameliorated, if the researcher is able to identify with the veteran population. This author, for example, had an opportunity to speak in front of a large group of veterans at the beginning of a golf clinic where I shared my previous experience working with wounded warriors at a U.S. military hospital. Most of the veterans wanted to sign up for the study after they heard my speech; at the time, however, I was only visiting and had not received IRB approval to begin the research. Lastly, the limitation of conducting surveys onsite prior to a sports lesson is likely an obstacle that will need to be tolerated in future sports research for the disabled population.

Despite the limitations, this present research points to several aspects worthy of further study. It seems worthwhile to explore the factors that lead to such poor retention within this golf

clinic program. Is this poor retention rate evidenced in other adaptive sports programs for disabled veterans? Participants in the spring clinic were asked whether they typically experienced more pain after a golf session. Surprisingly, 47% (n = 9) answered affirmatively. This was unexpected considering golf is a low-impact sport. Furthermore, at Time 1, 53% (n =10) of participants believed, in general, that it would be difficult for them to play golf because of the level of pain they experience. One can reasonably assume pain may be an important factor influencing the level of attendance in this golf clinic program. Indeed, 42% (n = 8) of the participants reported having difficulty managing their pain. Pain and its influence on attrition rates in sports rehabilitation programs for disabled persons, therefore, would be a worthwhile domain to investigate in future research.

Second, a larger study is needed to capture the effects of sports self-efficacy on resiliency and health self-efficacy, particularly within the context of disabled veterans and adaptive sports. The present study was not able to demonstrate improvement in depression, anxiety, pain intensity, pain frequency, fatigue, or self-efficacy after eight weeks of participating in a golf clinic. Yet, there are observed patterns in a therapeutic direction indicating the health benefits of a rehabilitative sports program for disabled veterans might be more clearly identified in a larger sample.

Although, none of the relevant variables demonstrated statistically significant change after 8 weeks of golf instruction, a strong relationship was observed between golf self-efficacy and resiliency self-efficacy. This finding is noteworthy because it suggests golf, and maybe sports rehabilitation more generally, have the potential benefit of increasing a person's level of self-efficacy in other areas of life. Specifically, increasing self-efficacy in performing golf

techniques may potentially increase a person's self-efficacy in overcoming life's struggles. Future prospective studies are needed to explore these relationships further.

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Appendix A

Golf Self-Efficacy Scale (title not included in participant version)

Please rate how certain you are that you can do the following golf skills by marking the appropriate number using the scales below:

	Cannot do at all (or don't know)										Highly certain can do
1. I can sink a 24-inch putt with one shot 80% of the time.	0	1	2	3	4	5	6	7	8	9	10
2. I can read a green and adjust putt accordingly.	0	1	2	3	4	5	6	7	8	9	10
3. When the ball is 30 feet from the hole on the green, I can sink it in the hole with four strokes.	0	1	2	3	4	5	6	7	8	9	10
4. When the ball is 30 feet from the hole on the green, I can sink it in the hole with two strokes	0	1	2	3	4	5	6	7	8	9	10
5. I can concentrate and not feel tense, rushed, or distracted when putting.	0	1	2	3	4	5	6	7	8	9	10
6. On a good day, I can drive the ball onto the fairway 50% of the time.	0	1	2	3	4	5	6	7	8	9	10
7. When I tee off, I can get the ball airborne.	0	1	2	3	4	5	6	7	8	9	10
8. I can concentrate and not feel tense, rushed, or distracted when using a short-iron to tee off.	0	1	2	3	4	5	6	7	8	9	10
9. I can choose the right club in all weather conditions.	0	1	2	3	4	5	6	7	8	9	10
10. When faced with a good lie a few yards from the green,I can use a 7 or 8-iron to chip the ball onto the green in one shot.	0	1	2	3	4	5	6	7	8	9	10
11. When faced with a good lie 30 yards from the green, I can use a pitching wedge to pitch the ball onto the green in one shot.	0	1	2	3	4	5	6	7	8	9	10
12. When faced with a bad lie a few yards from the green, I can use a sand wedge to pitch the ball onto the green in one shot.	0	1	2	3	4	5	6	7	8	9	10

13. When faced with a bad lie 30 yards from the green, I can use a pitching wedge to pitch the ball onto the green in one shot.	0	1	2	3	4	5	6	7	8	9	10
14. I can maintain emotional balance with good and bad shots.	0	1	2	3	4	5	6	7	8	9	10
15. I can control my heart rate with diaphragmatic breathing when I feel tense or nervous.	0	1	2	3	4	5	6	7	8	9	10
16. When I feel tense or nervous, I can perform trunk mobility,core stability, and balance exercises that help with pain management and athletic performance.	0	1	2	3	4	5	6	7	8	9	10
17. I can use yoga and pilates for golf specific exercises.	0	1	2	3	4	5	6	7	8	9	10

Appendix B

Resiliency Self-Efficacy Scale (title not included in participant version)

Please rate how certain you are that you can do the things discussed below by marking the appropriate number. Rate your degree of confidence using the scales below.

	Cannot do at all										Highly certain can do
1. I can keep tough problems from getting me down.	0	1	2	3	4	5	6	7	8	9	10
2. I can bounce back after I have tried my best and failed.	0	1	2	3	4	5	6	7	8	9	10
3. I can get myself to keep trying when things are going really badly.	0	1	2	3	4	5	6	7	8	9	10
4. I can keep up my spirits when I suffer hardships.	0	1	2	3	4	5	6	7	8	9	10
5. I can get rid of self-doubts after I have had tough setbacks.	0	1	2	3	4	5	6	7	8	9	10
6. I can keep from being easily rattled.	0	1	2	3	4	5	6	7	8	9	10
7. I can overcome discouragement when nothing I try seems to work.	0	1	2	3	4	5	6	7	8	9	10

Appendix C

Health Self-Efficacy Scale (title not included in participant version)

Please rate how certain you are that you can do the things discussed below by marking the appropriate number using the scales below:

When I feel **LOW LEVEL** fatigue or pain, I can do the following:

	Cannot do at all									Highly certain can do
I can exercise	0	1	2	3	4	5	6	7	8	9	10
I can resist the urge to drink alcohol	0	1	2	3	4	5	6	7	8	9	10
I can resist the urge to smoke or use tobacco	0	1	2	3	4	5	6	7	8	9	10
I can resist the urge to eat	0	1	2	3	4	5	6	7	8	9	10

When I feel a **HIGH LEVEL** of fatigue or pain, I can do the following:

I can exercise	0	1	2	3	4	5	6	7	8	9	10
I can resist the urge to drink alcohol	0	1	2	3	4	5	6	7	8	9	10
I can resist the urge to smoke or use tobacco	0	1	2	3	4	5	6	7	8	9	10
I can resist the urge to eat	0	1	2	3	4	5	6	7	8	9	10

Appendix D

Patient Health Questionnaire (PHQ-4)

Over the last 2 weeks, how often have you been bothered by the following problems?

	Not at all	Several days	More than half days	Nearly Every day
1. Feeling nervous, anxious or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Little interest or pleasure in doing things	0	1	2	3
4. Feeling down, depressed, or hopeless	0	1	2	3

Appendix E

Multidimensional Fatigue Inventory, 20-item Version

Instructions:

We would like an idea of how you have been feeling lately by responding to the following statements. Example: “I feel relaxed,” If you think that this is entirely true, that indeed you have been feeling relaxed lately, mark the number 5. The more you disagree with the statement, the more you will respond in the direction of “no, that is not true.”

1. I feel fit.	1	2	3	4	5
2. Physically, I feel only able to do a little.	1	2	3	4	5
3. I feel very active.	1	2	3	4	5
4. I feel like doing all sorts of things.	1	2	3	4	5
5. I feel tired.	1	2	3	4	5
6. I think I do a lot in a day.	1	2	3	4	5
7. When I am doing something, I can keep my thoughts on it.	1	2	3	4	5
8. Physically I can take on a lot.	1	2	3	4	5
9. I dread having to do things.	1	2	3	4	5
10. I think I do very little in a day.	1	2	3	4	5
11. I can concentrate well.	1	2	3	4	5
12. I am rested.	1	2	3	4	5
13. It takes a lot of effort to concentrate on things.	1	2	3	4	5
14. Physically I feel I am in a bad condition.	1	2	3	4	5
15. I have a lot of plans.	1	2	3	4	5

16. I tire easily.	1	2	3	4	5
17. I get little done.	1	2	3	4	5
18. I don’t feel like doing anything.	1	2	3	4	5
19. My thoughts easily wander.	1	2	3	4	5
20. Physically I feel I am in an excellent condition.	1	2	3	4	5

Appendix F

Demographics

Age: _____ Sex: _____Ethnicity:_____

What is your military status? ___Active ___Retired ___Discharged/Separated ____Other

Number of deployments downrange:_____

I have been deployed to OIF/OEF or OND theaters of operation: ___ No ___ Yes

If no, what other theater of operation have you deployed to?

Number of months or years with disability: _____

Did you play golf before your injury? *(check one):* ___ No ___ Yes

Is this the first time you have participated in a golf clinic? *(check one)*:

___ Yes ___ No If no, how many golf clinics have you participated in? ____

Are you participating in other sports clinics/camps at this time? *(check one)*:

___ No ___ Yes If yes, about how many? _____

Last year, how many different sports clinics/camps did you participate in?_____

Do you have a spouse or significant other? __No __Yes

Are they with you here today? __No __ Yes

Why did you decide to participate in this golf clinic program?

I have been diagnosed with *(check all that apply):* ___ PTSD ___ TBI ___ Depression

Do you currently have a physical disability? ___ No ____Yes (e.g. amputation, orthopedic impairment nerve damage, gun shot wound, etc.)

Appendix G

Consent Form

Thank you for your participation in this study. The purpose of this research project is to investigate the benefits of a golf clinic experience for disabled veterans. In this 8-week study, participants will complete questionnaires two different times at weeks 2 and 8. The amount of time needed to complete the questionnaires is less than 20 minutes. There are no anticipated discomforts or risks for participating in this study. Any identifying information provided by participants will be kept confidential and will be used solely for the purposes of conducting the research project.

By signing below, you agree to complete an assessment two times within a two-month period and you agree to allow us to contact you by email. Participants can decline to be in this study at any time without penalty. The collection of results from this research may be used for scientific or educational purposes. It may be presented at scientific meetings and or published in professional journals or books. The results of the study, if presented at a professional forum or if published, will have no identifying information that would connect you to the results.

_____ _____

Print Name Email Address

_____ _____

Signature Date

Appendix H

Curriculum Vitae

Marcel H. Flores

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Molalla, OR 97138
503-780-6520
mflores11@georgefox.edu

EDUCATION

PsyD Candidate, Clinical Psychology (APA-approved), George Fox University, expected date of completion, 2016

Doctoral Dissertation Prelim, Passed: The Rehabilitative Benefits of a Golf Clinic for Active Duty Military Personnel and Veterans with Disabilities: The Enhancement of Self-Efficacy and Health-Related Variables

M.A. Psychology, Pepperdine University, 2000

M.A. Political Science, Claremont Graduate University, 2006

B.S. Psychology, Pacific Union College, 1998

SUPERVISED CLINICAL EXPERIENCE

LCC International University August 2013 - Present
Position: Practicum Intern Supervisor: Winston Seegobin, PsyD
Population: Eastern European university students and staff
Responsibilities: Assisted an American family with the challenges of raising two Lithuanian children with FAS features adopted from a Lithuanian orphanage. Provide individual psychotherapy services cross-culturally to adults struggling with emotional regulation in clients' second or third language (e.g. Russian and Lithuanian clients). Provided group therapy sessions to Eastern European students seeking additional support in managing the stressors of university life. Approximately, 70 direct clinical hours have been accrued.

George Fox University: Behavioral Health Clinic April 2013 – July 2013
Supplemental Practicum Supervisors: Robert Weniger, PsyD,
Position: Practicum Assessment Intern Paul Stoltzfus, PsyD
Population: Community mental health
Responsibilities: Administered comprehensive psychological assessments for learning disabilities, autism spectrum disorders, ADHD, and memory impairment (e.g. MCMI-III, M-PACI, MMPI-2, PAI, WAIS-IV, WISC-IV, WMS-IV, CVLT-II, RCFT, TOMM, DKEFS, COWA, Trails A & B, GADS, CARS, PIC-2, BASC-2, Conners-3, Vineland-II, WRAT, WIAT-III, WJ-III). Composed integrated reports with case conceptualizations and treatment recommendations in collaboration with the clinical supervisor. Approximately, 31 assessment hours were accrued.

Cedar Hills Hospital: Freedom Care Unit May 2012 – July 2013
Position: Practicum Intern Supervisors: Mario Bolivar, LCSW,
Population: Inpatient active duty service members Jon Benson, PsyD
Responsibilities: Provided group therapy sessions for patients diagnosed with PTSD using Cognitive Processing Therapy techniques. Facilitated chemical dependency groups for patients diagnosed with substance dependence or abuse disorders. Conducted couples counseling to patients struggling with substance dependence, anxiety, depression, or trauma. Provided individual therapy sessions to service members struggling with severe trauma and depression. Completed intakes and developed treatment plans for newly admitted patients. Participated in weekly treatment team meetings to evaluate the therapeutic progress of patients. Conducted psychological assessments upon request of the medical director to rule out or confirm diagnoses, and to screen for malingering (e.g. MMPI-2, MMPI-2RF, PAI, MCMI-III, PHQ screeners). Performed neuropsychological evaluations to rule out or confirm conditions such as ADHD, mTBI, memory impairment, and aphasia (e.g.WRAML2, WMS-IV, RCFT, CVLT-II, TOMM, WAIS-IV, DKEFS, Boston Naming Test, COWA, Trails A & B). Approximately, 528 direct clinical hours and 65.75 assessment hours were accrued.

Warner Pacific College January 2012 – April 2012
Supplemental Practicum Supervisor: Denise Haugen, PsyD
Position: Practicum Intern
Population: Undergraduate students
Responsibilities: Rendered psychotherapy services in a college counseling center to clients with life adjustment problems. Services included couples therapy, individual therapy, and psychological assessment (MMPI-2). Approximately, 30 direct clinical hours were accrued.

George Fox University January 2012 – May 2012
Prepracticum
Position: Student Therapist Supervisor: Mary Peterson, PhD
Population: Undergraduate Students
Responsibilities: Provided outpatient services to college students including clinical interview, diagnosis, and individual psychotherapy. Administrative responsibilities included report writing, weekly chart notes, case presentation, and consultation. All sessions were videotaped and reviewed extensively both in group and individual supervision. Also, presented two case studies to a supervisory clinical team.

SUPERVISED CLINICAL EXPERIENCE/TERMINAL MASTERS DEGREE

YMCA Community Services April 2001 - April 2003
Position: Bilingual Therapist Supervisor: Jean Moonilal, LCSW
Responsibilities: Participated in two rotations involving a community mental health clinic and family resource center in the inner city. Delivered short-term psychotherapy services in the community clinic to predominantly Spanish-speaking underinsured patients with concurrent medical and mental illness conditions such as depression, anxiety, hypertension, orthopedic

impairment, diabetes, and menopause. Conducted counseling services in a family resource center providing family and individual counseling. Approximately, 1900 direct client hours were accrued.

TEACHING EXPERIENCE

Assistant Professor August 2013 – Present
Social Sciences Department, LCC International University
Department Chair: Ken Stoltzfus, PhD

Taught the following upper-division undergraduate courses (Fall 2013):
Clinical Psychology, Theory and Practice of Counseling, Abnormal Psychology

Taught the following upper-division undergraduate courses (Spring 2014):
Methods of Psychological Assessment, Professional Ethics, Special Topics: Psychological Trauma & Resilience, Abnormal Psychology

Currently teaching the following upper-division undergraduate course (Summer 2014):
Methods of Psychological Assessment

Guest Lecturer
The Functions of Emotional Expression September 2013
Undergraduate Level Course: Interpersonal Communication
Professor: Jurgita Babarskienė, M.A. Department Chair: Ken Stoltzfus, PhD

Guest Lecturer
Individualism and Collectivism September 2013
Undergraduate Level Course: Group Dynamics and Leadership
Professor: Jurgita Babarskienė, M.A. Department Chair: Ken Stoltzfus, PhD

Adjunct Faculty January 2002-July 2007
Social Sciences Department, Cerritos College Department Chair: Daryl Beale, PhD
Total Courses Taught: 26 courses of General Psychology

Adjunct Faculty August 2004-May 2005
Social Sciences Department, Cypress College Department Chair: Randy Martinez
Total Courses Taught: 5 courses of General Psychology

Adjunct Faculty August 2002-December 2003
Social Sciences Department, Fullerton College Department Chair: Calista Lee
Total Courses Taught: 6 courses of General Psychology

Adjunct Faculty January 2001-May 2003
Social Sciences Department, Chaffey College Department Chair: Vera Dunwoody

Total Courses Taught: 7 courses of General Psychology

RESEARCH EXPERIENCE

Journal Article Publication

Fisk, L. K., **Flores**, M. H., McMinn, M. R., Aten, J. D., Hill, P. C., Tisdale, T. C., Reimer K. S., Maclin, V., Seegobin, W., & Gathercoal, K. (2013). Spiritual formation among doctoral psychology students in explicitly Christian programs. *Journal of Psychology and Christianity*, 32, 279-290.

Program Evaluation Consultant September 2013 – April 2014

Conducted an evaluation of the Oregon Psychological Association Ethics Committee's performance from 2006 to the present. The program evaluation consisted of comparing their performance to that of the Oregon Licensing Board of Psychologists and the American Psychological Association Ethics Committee.

Research Team Member 2011- Present

George Fox University Chair: Wayne Adams, PhD

Responsibilities: Meet bi-monthly to discuss and evaluate progress, methodology, and design of group and individual research projects. Assist team members in research design, data collection, and analysis.

PROFESSIONAL PRESENTATIONS

Flores, M. (2014, March). *Distinguishing between Psychological and Spiritual Problems*. Lecture presented at the Congregational Development Conference: Leading from struggle to hope, LCC International University, Klaipėda, Lithuania.

Flores, M. (2013, October). *Priorities, Expectations, and Time Management Challenges*. Professional development presentation, LCC International University, Klaipėda, Lithuania.

Flores, M. (2013, September). *Culture Shock: Exploring helpful strategies*. Professional development presentation at Neumann Hall, LCC International University, Klaipėda, Lithuania.

Flores, M. (2013, September). *Multiculturalism? Tension Between Acculturation and Enculturation*. Lecture presented at Klaipėda State College [*Klaipėdos Valstybinė Kolegija],* Klaipėda, Lithuania.

Flores, M. (2012, June). *Mild TBI: Challenges of assessment and treatment in service members*. Peer- reviewed lecture presented at Freedom Care, Cedar Hills Hospital, Portland, Oregon.

Flores, M. (2010, March). *Resiliency Forum: Coping with stress*. Community lecture presented at Kaiserslautern High School, Kaiserslautern, Germany.

Flores, M. (2010, February). *Leadership Course For Senior NCOs*. Peer-reviewed lecture presented at Landstuhl Regional Medical Center, Landstuhl, Germany.

Flores, M. (2009, November). *Providing Outreach While Enhancing Readiness (POWER): Caring for the caregiver*. FranklinCovey Facilitator. Peer-reviewed lecture presented at the Warrior Transition Battalion-Europe Fall 2009 Leadership Seminar, Garmisch, Germany.

Flores, M. (2009, October). *Bouncing Back Through Resiliency.* Peer-reviewed lecture presented at the Primary Care, Physical Therapy, Nursing and Optometry Conference, U.S. Army Europe Regional Medical Command, Garmisch, Germany.

Williams, K., Glenn, M., Glenn, D., Flores, M., Nelson, S., Nyman, P., Wierzechowski, L., Martin, K., & Flaherty, S. (2009, April) *Undetected Mild Traumatic Brain Injury (mTBI): Results of expanding the mTBI screening process to all patients evacuated from OIF/OEF to Landstuhl Regional Medical Center.* Poster presented at the *12th Annual Society of Trauma Nurses Conference*, Phoenix, AZ.

EMPLOYMENT

LCC International University August 2013 - Present

Position: Assistant Professor

Responsibilities: Teach upper-division psychology courses to third- and fourth-year undergraduate university students. Assist fourth-year students on their terminal degree projects as their thesis advisor including assistance in the development of their literature review, hypotheses, research design, statistical analyses, and presentation defense. Served as a consultant in the reaccreditation process of the psychology program at LCC including participation in the workgroup meetings to finalize the self-evaluation report to the Lithuanian governing body of higher education; also, advised in the remodeling of the psychology lab. Provided career guidance to university students applying to graduate programs in psychology. Conducted professional development workshops for university staff. Serve as faculty advisor to the psychology club on campus.

Cedar Hills Hospital July 2012 – July 2013

Position: Therapist

Responsibilities: Led group therapy sessions using Cognitive Processing Therapy techniques for inpatient active duty service members diagnosed with PTSD. Conducted chemical dependency group therapy sessions for inpatient active duty service members diagnosed with Substance Use Disorder. Provided individual and couples counseling to patients. Performed treatment plans as well as personality, cognitive, and neuropsychological assessments upon request of the medical director.

Landstuhl Regional Medical Center (U.S. Army) April 2009-April 2010
Position: Training Instructor: Provider Resiliency
Responsibilities: Assisted in the development of instructional material for the Provider Resiliency Training program at Landstuhl Regional Medical Center (LRMC). Conducted more than 80 resiliency trainings throughout the LRMC footprint and Bavaria MEDDAC. Trained over 1400 hospital staff on managing secondary trauma and burnout. In consultation with leadership, provided guidance for policy revisions, program development, and implementation of resiliency health initiatives based on staff needs. Monitored the resiliency, compassion fatigue, and burnout levels of care providers. Maintained a working knowledge of current and emerging theories, strategies, and protocols related to secondary trauma. Actively participated as a member of the Combat and Operational Stress-Staff Resiliency Committee designed to problem-solve crises among hospital staff and to promote hospital-wide resiliency initiatives.

Landstuhl Regional Medical Center (U.S. Army) December 2007-March 2009
Position: Social Work Technician
Responsibilities: Screened wounded soldiers for signs of Traumatic Brain Injury (TBI) and hazardous drinking. Developed, in collaboration with the TBI team, standard operating procedures for the alcohol screening and intervention process. Educated patients on TBI management, stress management, and alcohol misuse. Provided TBI in-services to hospital wards and outlying clinics within Landstuhl Regional Medical Command.

PROFESSIONAL TRAININGS AND WORKSHOPS

Therapy Related Workshops:

Forgiveness in Psychotherapy, Webinar, David L. Kupfer, 2013

Six Practical and Powerful Steps for Taking Charge of Anger, Webinar, Robert Nay, 2013

Toxic Anger: Quick interventions to defuse your angry clients, Webinar, W. Doyle Gentry, 2013

Difficult & Defiant Adolescents: 70 high-impact strategies & techniques, Webinar, Fred J. Hanna, 2013

Diagnosis with DSM-5 and ICD, Washington State Psychological Association, Greg Neimeyer, 2013

Acceptance & Commitment Therapy (ACT): Boot camp training, Steven Hayes, 2013

The Person of the Therapist: How spiritual practice weaves with therapeutic encounter, George Fox University, Brooke Kuhnhausen, 2013

CBT: Cognitive behavioral therapy techniques for everyday clinical practice, Webinar, Barry Gregory, 2012

Imaginal Exposure, ABCT Clinical Grand Rounds Webinar, Edna Foa, 2012

CBT: Essential tools for proficiency in clinical practice, Webinar, Leslie Sokol, 2011

Cognitive Behavior Therapy and Mindfulness, Webinar, Donald Sloane, 2011

Cognitive Behavior Therapy: 21 evidence-based strategies for success, Webinar, Jeff Riggenbach, 2011

New Trends in CBT: Advanced techniques for treating your 5 most difficult clients, Webinar, Jeff Riggenbach, 2011

Cognitive Therapy for Challenging Problems, Webinar, Judith Beck, 2011

Combat Operational Stress Control: Family resiliency training, Naval Chaplains School, 2009

Assessment-Related Workshops:

WISC-V: Overview and demonstration of the upcoming revision, 2014 Annual Northwest Psychological Assessment Conference, Patrick Moran

Woodcock-Johnson-IV: A new era of assessment and interpretation, 2014 Annual Northwest Psychological Assessment Conference, Stephanie Rodriguez

Using Tests of Effort in a Psychological Assessment, 2013 Annual Northwest Psychological Assessment Conference, Paul Green, 2013

Assessing Mild Cognitive Impairment and Dementia, 2013 Annual Northwest Psychological Assessment Conference, Mark Bondi, 2013

Cross-Cultural Psychological Assessment, George Fox University, Tedd Judd, 2011

PROFESSIONAL AFFILIATIONS

American Psychological Association, Student Affiliate

HONORS AND AWARDS

Scroll of Appreciation, Europe Regional Medical Command, U.S. Army Medical Department, 2009

Certificate of Appreciation presented to Mission: Serving Our Wounded, 86th Airlift Wing, U.S. Air Force, 2010

VOLUNTEER WORK

Portland Rescue Mission July 2010-July 2011
Position: Guest Relations Specialist, Outreach Ministry Team Member
Responsibilities: Provided encouragement, support, and assistance to the homeless community in downtown Portland through outreach efforts visiting them under bridges, at park benches, sidewalks, and homeless camps. Assisted homeless persons at the shelter helping them acquire vital agency support services. Served as a liaison to help homeless persons overcome language and medical barriers to access community resources. Interacted with persons who were distraught, inebriated, in despair, or otherwise in a crisis for the purpose of inviting them to receive services and support. Time commitment consisted of 20 to 30 hours a week for 12 months.

Mission: Serving Our Wounded March 2009-June 2010
Position: President
Responsibilities: Re-founded the volunteer organization with a new name, organizational logo, motto, website, operating procedures, constitution, and bylaws. Managed the Executive Council as well as the body of members. Provided community events in collaboration with other organizations such as the USO to acknowledge and celebrate the sacrifices of our wounded warriors. Provided supportive and healing activities for wounded warriors through personalized peer-to-peer relationships. Expanded the program to reach a greater number of wounded warriors. Developed partnerships with local businesses to expand our services to wounded service members.