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# Examining Intrinsic Motivation and Holistic Functioning: The Role of Therapeutic Recreation in Residential Substance Use Treatment

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Examining Intrinsic Motivation and Holistic Functioning:  
The Role of Therapeutic Recreation in Residential  
Substance Use Treatment

Damien Christopher Cavanaugh

A thesis submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of  
Master of Science

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## ABSTRACT

### Examining Intrinsic Motivation and Holistic Functioning: The Role of Therapeutic Recreation in Residential Substance Use Treatment

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This evaluative study examined the impact of recreational therapy interventions on intrinsic motivation and holistic functioning among adults at a substance use treatment facility. West (2001) identified motivation as a key variable in treating substance use disorders, and self-determination theory, specifically intrinsic motivation, provided a useful framework for this study. Intrinsic motivation is grounded in self-determination theory and defines various motivation types and how to increase participants' engagement. Holistic functioning is another tool in assessing a participant's recovery. For this evaluation, four domains were specifically assessed: (a) physical, (b) leisure, (c) social, and (d) daily living functioning. These quality of life components are affected heavily during prolonged substance use. Results suggest that recreational therapy interventions utilizing a self-determination framework improves participants' intrinsic motivation and holistic functioning in a substance use treatment setting.

Keywords: recreation therapy, substance use, motivation, holistic functioning

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## Introduction

Through my adolescent and young adult years, I struggled with an addiction to legal and illegal substances. I experienced many hardships and difficulties from my decision to engage in this type of negative coping. These experiences have motivated the present study. Substance use (SU) has been addressed through various methodologies over the last few decades. This evaluation study utilized a recreation therapy (RT) focused lens to study aspects of SU treatment.

Individuals struggling with an addiction may or may not be able to identify a certain point when they recognized they had a problem. Many addicts began using substances out of curiosity, boredom, trauma, or life stressors. At first these substances provided relief, means of escape, stimulation, or the numbing of serious emotional pain. Because life is full of these experiences, some individuals revert back to SU as a means of coping. Not only are these patterns of abuse costly to the individual but to families, communities, and nations. “Abuse of tobacco, alcohol, and illicit drugs is costly to our nation, exacting more than \$700 billion annually in costs related to crime, lost work productivity, and health care” (National Institute on Drug Abuse [NIDA], 2015). Thankfully, through the efforts of researchers and practitioners, tools are being refined and developed to combat this plague.

Recreation therapy is a modality utilizing recreation and leisure interventions to improve the quality of life of individuals. This discipline utilizes a holistic approach by treating and addressing patients’ physical, emotional, social, cognitive, and spiritual needs through experiential tasks, activities, and initiatives. RT has been a valid modality treating SU for the last few decades (Rancourt, 1991; Snead, Pakstis, Evans, & Nelson, 2015; Van Hout, 2008).

An area greatly impacted by SU is an individual’s engagement in recreational activities. This may be directly related to anhedonia, a clinically defined reduction in pleasure or pleasure

from activities once seen as enjoyable. Recreational therapists have the skill set to address SU from the unique perspective of recreation and leisure. Common RT interventions used in the treatment of SU include leisure education, community integration, and experiential initiatives designed to increase self-efficacy. Other associated outcomes of RT treating SU are increased self-awareness, self-confidence, empowerment, and motivation. Motivation is the central focus of this study. Adults engaged in SU often become complacent and apathetic about changing their circumstances and as West (2001) pointed out, this is where recovery can begin with a change in motivation. A prominent theory that lends itself well to understanding the motivations behind SU is Self-Determination Theory (SDT).

While there are many approaches in treating and preventing SU disorders, motivation is a key variable in treating individuals struggling with substance use. The organization evaluated in this study is specifically interested in learning how to increase their patients' intrinsic motivation (IM) to continue living a sober lifestyle after discharge. Substantial efforts are made to rescue, heal, teach, and help these individuals reclaim their lives and flourish in recovery. SDT is a study of the different levels of motivation in which human beings engage or disengage (Ryan & Deci, 2000). It is a theory that implies humans are naturally energetic, progressing, and growing entities continually striving toward a more sophisticated and cohesive sense of self (Deci & Ryan, 2002). A component of SDT is the Basic Needs Theory, which is composed of three parts: (a) competence, (b) relatedness, and (c) autonomy. When satisfied, these basic psychological needs contribute to health and wellbeing. When they are not satisfied, they contribute to pathology and ill being (Ryan & Deci, 2000). These basic needs can also be satisfied through unhealthy coping skills and maladaptive behaviors such as SU. Ideally, these basic needs can be satisfied through intrinsic goal setting, community involvement, and personal



achievement and progression (Ryan & Deci, 2000). The Basic Needs Theory allows researchers within addiction studies to observe how addicts are meeting basic psychological needs and how to better facilitate recovery.

### **Literature Review**

The purpose of this study is to observe changes in intrinsic motivation and holistic functioning as a result of recreation therapy interventions utilized at a substance use treatment facility for adults. This review of literature will cover the following areas: (a) recreation therapy, (b) recreation therapy treating substance use, (c) motivation and Self-Determination Theory (d) holistic functioning, and (e) the treatment facility.

### **Recreation Therapy**

Recreational therapy (RT), also known as therapeutic recreation, is a systematic process that utilizes recreation and other activity-based interventions to address the assessed needs of individuals with illnesses and/or disabling conditions, as a means to psychological and physical health, recovery, and wellbeing. (American Therapeutic Recreation Association [ATRA], 2015)

Interventions that a recreational therapist may utilize include sports, high adventure, aquatics, team building initiatives, biophilia, socials, experiential tasks, art, music, animal assisted therapy, horticulture, and tai chi (Austin, 2004). “Recreational therapists may work with a wide range of individuals requiring health services including geriatric, mental health, addictions, general medicine, physical medicine and rehabilitation, developmental disabilities and pediatric clients” (ATRA, 2015). RT is a unique discipline from other therapies, in that the sole modality is focused on recreation and leisure in treating individuals holistically (ATRA, 2015). One aim of the proposed research was to examine substance abuse (SU) through the lens

of RT. The intent was to provide needed literature for practitioners and academics for individuals struggling with chemical addiction.

### **Recreation Therapy Treating Substance Use**

Recreation therapy has been a common discipline used in treating individuals struggling with addiction for decades (Rancourt, 1991; Snead, Pakstis, Evans, & Nelson, 2015; Van Hout, 2008). A common approach used by recreational therapists is to teach and provide outlets for intentional coping skills (Carruthers & Hood, 2002). “The primary focus of therapeutic recreation in addictions treatment should be the provision of programs that consistently and effectively increase the clients' coping skills” (Carruthers & Hood, 2002, p. 154). Intentional coping strategies may include self-control processes (Shiffman & Wills, 1985), flow (Csikszentmihalyi, 1990), relaxation (Daley & Marlatt, 1992), and social support (Moggi, Ouimette, Moos, & Finney, 1999). Social support is a key component of the 12-step process within addiction recovery and recommendations are advised in pursuing a sponsor to help facilitate social opportunities (AA, 2011).

In addition to intentional coping strategies, educating patients on the healthiest and most productive use of their free time (i.e., leisure education) is another intervention utilized by recreational therapists. Many addicts in recovery programs are asked, “What did you do for fun before your drug addiction?” A common response is, “I don't know!” Many patients have become disconnected from the leisure pursuits that used to give them self-fulfillment, joy, identity, and purpose in life (Garfield, Lubman, & Yücel, 2014). In addition, anhedonia is often experienced when patients are engrossed in SU behavior. Garfield, Lubman, and Yücel (2014) identified the importance of addressing anhedonia in substance use treatment: “The common experience of anhedonia in substance-dependent populations, and its relationship to relapse,

emphasizes the importance of developing therapeutic interventions that specifically target anhedonia in the treatment of all substance use disorders” (p. 36). Leisure education has the capacity to either teach or reteach individuals the inherent value of recreation and leisure and address challenges associated with anhedonia.

### **Motivation and Self-Determination Theory**

In 2014, the Substance Abuse and Mental Health Services Administration (SAMHSA) conducted a survey and discovered 21.2 million Americans 12 years and older meet criteria for treatment for illegal drugs or alcohol use (SAMHSA, 2014). Even more staggering is that only 2.5 million—one in nine—had sought out treatment in the previous 12 months (SAMHSA, 2014). While there are many approaches in treating and preventing substance use disorders, motivation is a key variable in treating these individuals. Utilizing Self-Determination Theory (SDT) provides a useful framework for this study (West, 2001). SDT is a study of the different levels of human motivation (Ryan & Deci, 2000). It is a theory implying humans are naturally energetic, progressing, and growing entities continually striving toward a more sophisticated and cohesive sense of self (Deci & Ryan, 2002). Researchers studying SDT have investigated environmental contributors and non-contributors that either assist or undermine an individual’s self-motivation, social functioning, and personal wellbeing (Ryan & Deci, 2000). Through empirical research, Deci and Ryan (2002) have emphasized three innate psychological needs: competence, relatedness, and autonomy. When fulfilled, these needs serve as a catalyst to augment self-motivation and mental health. Furthermore, SDT’s Basic Needs Theory is understood accordingly: competence is the need to be capable in dealing with the environment; relatedness is the development of close, intimate relationships and a yearning to connect with

others; and autonomy refers to living authentically and feeling volitional about one's actions (Deci & Ryan, 2002).

**Levels of motivation.** In 2000, Ryan and Deci established the self-determination continuum to visually display a working model of various motivation types. At the far left of the continuum is (a) amotivation, which means lacking the intention to act or altogether not acting. Here, individuals perceive a loss of control, incompetence, or do not value the activity. In the middle of the diagram is (b) extrinsic motivation, comprising four sublevels with external regulation being the most extrinsic. Individuals follow through with activities due to rewards, punishments, and compliance. Introjected regulation is still somewhat extrinsic, but individuals experience self-control and internal rewards. Identified regulation is somewhat intrinsic and experience personal value. Lastly within extrinsic motivation is integrated regulation, which is the most intrinsic of the four and individuals experience congruence and synthesis with one's self. Concluding the model is intrinsic motivation (IM) where individuals experience inherent satisfaction and purely engage in the activity for the activity itself. Another approach in treating SU is holistic function, which this study incorporates.

### **Holistic Functioning**

Holistic functioning (HF) in this review is comprised of four domains: (a) physical, (b) social, (c) leisure, and (d) daily living functioning. Each area has contributed to leading successful recovery lifestyles (Dehn, 1996). The ability to evaluate multiple facets of an individual is one unique advantage recreation therapists utilize. Concepts of exercise programs, social support networks, dysfunctional leisure, and navigating daily life are discussed in the following sections.

**Physical functioning.** Physical exercise interventions have long been established with disorders such as schizophrenia, depression, and anxiety. Consistent physical activity has also been attributed to reducing muscle tension, stress, sleep disruptions, and feelings of depression and anxiety (Biddle, Mutrie, & Gorely, 2015; Cooney et al., 2013; Gorczyński & Faulkner, 2010; Wipfli, Rethorst, & Landers, 2008). Similar benefits of physical activity are associated with SU and may assist those struggling with SU (Cummings, Gordon, & Marlatt, 1980). In a recent systematic review of alcohol use and physical functioning by Giesen, Deimel & Bloch (2015), it was concluded current literature cannot establish evidence based recommendations, though they suggested that numerous potential benefits may be inherent. Physical activity is feasible and safe and maximum rate of oxygen consumption, basal heart rate, physical activity level, and strength all improve (Giesen, Deimel & Bloch, 2015). In a pre-clinical study done by Smith & Lynch (2011), they surmised:

The ability of exercise to serve as an alternative, non-drug reinforcer, and decrease comorbid risk factors associated with substance use has been demonstrated across multiple assays. Enough is now known to begin the process of designing and implementing exercise-based interventions in clinical and at-risk populations. (p. 82)

**Social functioning.** Individuals struggling with SU have discussed with clinicians increases in anhedonia in their recreational pursuits, decreases in social engagement with family and friends, decreases in IM in performing an array of tasks, poor social skills and involvement in social spheres, and declines in cognitive functioning (Can & Tanrıverdi, 2015). Forfeiture of social functioning diminishes the quality of life of individuals struggling with addiction and exacerbates problems in family units, social contexts, and leisure and occupational activities (Addington & Addington, 1999). It is recommended that recovery programs and initiatives

include social support strategies connected to a community dimension. These have the potential to create relationships and social networks that provide support and friendship (SAMHSA, 2014).

**Leisure functioning.** Leisure functioning is a vital domain practitioners assess to determine a client's barriers and restrictions related to positive leisure and recreation pursuits (Dehn, 1996). A study conducted by Faulkner (1991) discussed the linkage of dysfunctional leisure and addiction as follows:

Addiction is a leisure disease, and dysfunctional leisure is a symptom of addiction. Naturally, there are many other factors involved in the creation of an addictive personality. But the linkage between leisure malfunction and addiction is astounding. Most people take their first drink, fix, or pill during leisure hours and as a part of leisure functioning. In that respect, addiction becomes a function of leisure and "dis-ease" of leisure. Once embarked on the addiction trail, people frequently abandon forms of leisure pursuits which do not permit alcohol and/or drug use. At this stage, dysfunctional leisure becomes a symptom of addiction. (p. 6)

It is here clinicians, especially recreational therapists, have the opportunity of utilizing wholesome recreation and leisure to enhance and increase the quality of life in their clients (ATRA, 2015).

**Daily living functioning.** Substance use has the capacity to severely inhibit one's daily living functioning (DLF). Many drug recovery facilities attempt to help patients see the connection between the frequency and duration of their substance usage and how it has directly impacted their DLF. Those who struggle with SU report having negative effects associated with career achievement, job performance, maintaining employment, dropping out of school, and

financial pressures (National Institute on Drug Abuse [NIDA], 2015). Dehn's (1995) assessment includes other aspects of DLF including nutrition, maintenance of hygiene, participating in household chores, and feeling safe at home. Recreational therapists have a unique vantage point in assessing individuals who engage in SU holistically, allowing the clinician to view the whole person and not be limited solely to leisure functioning (ATRA, 2015). This embraces a more comprehensive approach in recovery.

### **Treatment Facility**

This study set out to evaluate the above treatment concepts and practices in the context of a facility that offers RT as a treatment modality. The facility is a drug and alcohol treatment facility located in the western United States and operating at three sites. The treatment facility treats alcohol addiction, prescription drug abuse, drug addiction, and co-occurring disorders for adults 18 years and up. This section is intended to be a review of the treatment facility and its current practices in treating SU. This review will include the mission and approach to treatment, broadly the types of programs offered, disciplines involved in substance use treatment—specifically the role of recreation therapy at the treatment facility, and interventions provided by the recreation therapist in treating substance use.

**Mission.** "...Our mission is to provide the most cost-effective, accessible substance abuse treatment to as many people as possible. We are committed to an integrated quality of care that is comprehensive, person-centered and recovery-focused" (Recovery Ways, n.d., p. 1). The mission of the recreation therapy program in particular is to increase patients' intrinsic motivation and holistic functioning while in programming to promote more engagement while in treatment and to continue involvement in recovery principles to enhance quality of life after discharge. Aiding in these efforts are the various types of RT interventions provided to bring about changes for individuals.

**Recreation therapy and interventions.** “Sober recreation therapy provides a vehicle for patients to discover and recreate themselves while practicing skills in a safe supportive environment (Recovery Ways, n.d., p. 2).” RT at the treatment facility addresses patients holistically as previously defined, by assessing, planning, utilizing effective interventions, and evaluating patient success. The treatment facility believes RT plays a vital role in recovery by educating patients on alternative coping skills to increase quality of life through a comprehensive leisure education program. RT at the treatment facility strives to implement and teach leisure education, building healthy relationships, creating trust in oneself and others, building competence, reliability, and independence, enjoying sober fun and experiencing life, and increasing one’s self-worth and motivation. Common interventions within the leisure education program are as follows: snowshoeing, skiing, volleyball, tai chi, hiking, rock climbing, repelling, kayaking, alpine slides, ziplining, ropes course, canoeing, river rafting, wake boarding, golf, broomball, bowling, billiards, aquarium, local tours, biking, fly fishing, indoor tennis, miniature golf, go-carts, laser tag, campfires, disc golf, karaoke, archery, speed skating, library, bobsledding, snow tubing, cooking, bocce, croquet, sled hockey, flag football, and horse riding. The treatment facility provides patients with these opportunities through 12 hours of RT and leisure education a week.

Another aspect of leisure education at the treatment facility is sober leisure fun, which accounts for eight hours of RT a week, delivered in two four-hour sessions. Many patients report having participated in leisure activities prior to treatment, but under the influence of alcohol or drugs. These leisure education sessions are designed to expose patients to the inherent value of recreation and leisure.



In addition to leisure education, one hour-long experiential therapy session is provided each week. This modality is implemented at all three treatment sites. At the treatment facility, experiential therapy is often a problem-solving task or initiative activity designed to bring about group cohesion, increase self-efficacy, or develop leadership skills. Participants are challenged physically, emotionally, and cognitively through an array of tasks and activities that focus on instilling recovery principles.

Another opportunity at the treatment facility is the chance to engage in service projects for the community. These outings can include volunteering at soup kitchens, cleaning parks, or shoveling snow for the elderly. This connects directly back to the twelfth step in Alcoholics Anonymous (AA): “Having had a spiritual awakening as the result of these steps, we try to carry this message to others and to practice these principles in all our affairs” (AA, 2016). One way of carrying that message is through community service and charitable acts.

**Role of the CTRS.** These interventions are utilized through the Assessment, Planning, Intervention, Evaluation, and Documentation (APIED) process carried out by the certified therapeutic recreation specialists (CTRSs) (Austin, 2004). The following sections will provide details of the RT process at the treatment facility.

**Assessment.** Upon admission, each patient needs to be assessed within 72 hours of admission to meet treatment facility standards. Patients are assessed through psychometric testing, interviews, and observations. The Intrinsic Motivation Inventory (IMI) and the Holistic Functioning Assessment (HFA) are a part of the psychometric testing. Another area examined for each patient is the leisure inventory. This tool is broken into subcategories of various leisure pursuits where the patient self-reports in which activities they have engaged in the last month previous to receiving treatment. These in turn establish the patients’ strengths, barriers, goals,

and objectives for the program. It allows the CTRS to accurately develop a treatment plan that is individualized and specific in preparing the patient to lead a healthy, sober lifestyle. For example, an objective could be: The patient will identify three leisure coping skills to assist with the patient's cravings associated with his addiction. The goal for this patient could be: To utilize his new leisure coping skill rather than reverting back to old negative coping mechanisms of SU. These goals and objectives are then transferred over to the master treatment plan.

**Planning.** Planning is accomplished through selecting the appropriate leisure/recreation modality that is best suited for the patient in reaching his/her program goals and objectives. Planning also incorporates a model or theory that best applies to the program outcomes. An example of an outcome for all patients at the treatment facility is to increase their intrinsic motivation and holistic functioning, ideally selecting interventions that provide these opportunities (e.g., rock climbing, repelling, kayaking). In addition, activity logistics are taken care of. This can include scheduling vans, coordinating meals with the kitchen, or reserving camping or lodging accommodations. Once these details are carefully configured, it is time to execute the plan.

**Implementation.** Implementation occurs once the plan is designed and set in motion. An important aspect of this process is considering the sequence of events that need to occur in order to carry out the plan effectively, especially with more involved tasks and activities. It is vital to know when patients have met the objective. The CTRS keeps in mind the criteria needed to accomplish the objective of the session. This allow the CTRS to effectively manage the flow of the task and pace the time needed to successfully complete the objective for the session. Once the task or activity has ended, it is important for the CTRS to ask, "Did I accomplish my

objective with my patients? What would I do differently?" These questions initiate the evaluation process.

***Evaluation.*** This step involves reflectively looking at the progress of each patient and the effectiveness of RT programming. At the treatment facility, recreation therapy staff review the master treatment plan once a week. This determines whether patients are making progress toward their recreation therapy goals. For example, if a patient were isolating himself at the rear of an activity, the CTRS would address how to be more inclusive with the patient next time. At the treatment facility, practitioners have the luxury of evaluating the effectiveness of programs and patients with fellow recreation therapists onsite. This is advantageous to have access to other CTRSs who are familiar with the program who can discuss specific needs of patients without breaching the health insurance portability and accountability act (HIPAA) standards.

***Documentation.*** Documentation and discharge are the last components of the RT process. A CTRS documents the daily progression of each patient for whom they are responsible in a specific program called BestNotes. This documentation includes the patient's strengths and weaknesses and reflects the progress of his or her treatment goal by way of utilizing check boxes and a narrative. These notes follow the subjective, objective, assessment, and plan (SOAP) format familiar to CTRSs. Discharge includes assessing the patient again, collecting post data utilizing the IMI and the HFA. In addition, four qualitative questions are asked to obtain a more rounded experience of the patient in treatment.

The critical role of the CTRS in this process is to help the patient see the connection to recovery. Many of these leisure activities are therapeutic by nature, but to stop there would be doing a disservice to those being treated. CTRSs employ a facilitation technique called processing. Processing is designed to facilitate learning, awareness, and change before, during,

and after a RT session (Hutchinson & Dattilo, 2001). Priest & Gass (1997) suggest people do not change, learn, or grow without reflection on their experiences. They continue by highlighting that processing is an instrument specifically utilized to foster reflection and promote change. Processing serves as a catalyst in the therapeutic change process. Examples include the CTRS facilitating a discussion on healthy coping skills, asking questions about a simulated task and how it applies to an individual's recovery, and the use of symbols or metaphors to better illustrate a principle of recovery.

The treatment facility's main approach in addressing substance use, specifically the modality of recreation therapy, is through the frameworks of Self-Determination Theory. It is their goal to enhance intrinsic motivation in order to help patients become more engaged in treatment and continue leading a sober lifestyle after discharge.

### **Summary**

In 2011, Sharma and Smith called for "additional studies about motivational factors that initiate both unsafe substance abuse behaviors and the desire to receive treatment" (p. 5). Cogswell and Negley (2011) utilized a therapeutic recreation focus investigating motivation and substance use. However, they concluded their analysis produced non-significant statistical results. This study was conducted to better understand some of the motivational factors associated with SU treatment and to investigate the variables of therapeutic recreation, substance use, intrinsic motivation, and holistic functioning to see if any new insights can be gained.

To date, no known studies have examined changes in intrinsic motivation and holistic functioning for adults engaged in substance use participating in recreation therapy services. In addition, over the last ten years there have only been a handful of research articles even addressing SU from an RT perspective (Cooke, 2013; Snead et al., 2015; Van Hout, 2008).

Furthermore, the National Council for Therapeutic Recreation Certification (NCTRC) and ATRA have identified behavioral health/acute hospitals, where most substance abuse clinics are found, to be the number one population served by recreation therapists (NCTRC, 2015; ATRA, 2015).

With the majority of recreation therapists working in this field, the need for current research is substantial. The scarcity of studies also presents barriers for implementing evidence based programming for RT practitioners addressing substance use. Therefore, the purpose of this study was to observe changes in intrinsic motivation and holistic functioning as a result of therapeutic recreation interventions utilized at a substance use treatment facility for adults engaged in substance use.

### **Methods**

The problem of this study was to investigate the differences between pre- and post-tests scores on intrinsic motivation (IM) and holistic functioning (HF) for adults in a drug recovery treatment center. A look at various control variables (e.g., age, gender, length of stay) was evaluated to see which ones, if any, have an impact on IM and HF. A content analysis was also conducted on open ended questions asked during discharge.

### **Sample**

The sample for this evaluation study was a census of 200 adults from a residential treatment center in the western United States that treats substance use disorders for males and females. The average age enrolled in the facility was 33 years old, with the youngest being 18 and the oldest 73. The population was 60% male and 40% female. The various ethnicities reported at the treatment facility include Caucasian (91%), African American (3%), Native American (2%), Hispanic/Latino (1%), Asian (0.4%), and Multi-Ethnic (0.4%).

Sociodemographic questions were included to better understand our sample and to provide possible controlling factors. These elements included variables only relevant to the proposed study (e.g., patient's age, patient's gender, length of stay, number of refusals in programming, site where treatment was received).

### **Data Collection Procedures**

Data utilized for this evaluation study was secondary data collected from a treatment facility in the western United States. Upon admission to the program, each patient participated in an assessment process that included a pre-test: (a) an Intrinsic Motivation Inventory (IMI), (b) a Holistic Functioning Questionnaire, and (c) a Leisure Inventory Questionnaire. At the close of treatment, the same three instruments were administered the day of discharge with the addition of four qualitative questions. A consent form to participate in RT was given upon admission when they enrolled. A recreational therapist assisted in the process of initiating the pre- and post-test for each patient in the program. Furthermore, a randomly assigned case number was assigned to each patient's questionnaire that was identical. This was intended to match pre- and post-data together, but also to provide anonymity to participants. No personal identifying questions were asked, such as a request for social security numbers. As the questionnaires were completed for both pre- and post-tests, the information was converted and stored in a safe database that was password protected. Once the target of 200 patients discharged from the program was reached, data was sent to the principal investigator. Only committee members had access to ensure confidentiality. Once all the questionnaires were gathered, cleaned, imputed, analyzed, and reported, all data was deleted and shredded.

**Instrumentation**

There were four instruments from the assessment and discharge utilized in the course of this evaluation study. These instruments were selected by the treatment facility and reflect on which target areas they were concentrating to promote and enhance recovery lifestyles through the modality of RT and were selected intentionally for this program.

**Intrinsic motivation inventory.** The IMI utilized at the treatment facility is a modification of the original instrument. It is composed of nine questions focusing on three subscales: (a) interest/enjoyment, (b) perceived competence, and (c) pressure/tension. This was justified by the treatment facility out of convenience due to the volume of patients seen daily. The original IMI included 27 questions, covering four subscales: (a) interest/enjoyment, (b) perceived competence, (c) effort, and (d) pressure/tension (Ryan, 1982).

Internal consistency for the four subscales was generally quite adequate with the alpha coefficient for each of the following scales shown in parenthesis: interest-enjoyment ( $\alpha = .78$ ); perceived competence ( $\alpha = .80$ ); effort ( $\alpha = .84$ ); and pressure-tension ( $\alpha = .68$ ). (McAuley, Duncan, & Tammen, 1989, p. 51)

As recent as 2012, the IMI was utilized by researchers Van De Pol and Kavussanu (2012) in investigating achievement motivation across training and competition in individual and team sports. The primary concern of the evaluative study were indicators of intrinsic motivation. Perceived competence is posited to be a positive predictor of intrinsic motivation and pressure/tension is posited to be a negative indicator of intrinsic motivation (Self-Determination Theory [SDT], 2016). Questions were selected from these topics to create a modified version of the IMI. For example, under interest/enjoyment: Recreation activities do not hold my attention

at all; under perceived competence: I am satisfied with my performance in this area; under pressure/tension: I was anxious while participating.

The groups and sessions held at the treatment facility are designed to increase confidence and interest while decreasing pressure to develop or enhance their patients' intrinsic motivation. This corresponds to their mission of having more intrinsically engaged patients in treatment who continue leading sober lifestyles after discharge. The IMI prompt asked patients to rate their engagement in recreation and leisure activities one month prior to admission to treatment. This section was composed of nine questions based on a 7-point Likert scale, 1 representing not at all true and 7 representing very true. Higher scores, except for the reverse coded questions 1, 4, and 5, indicate higher levels of IM.

The psychometric properties for this instrument followed the recommendations from previous research, namely from researchers Monteiro, Mata, & Peixoto (2015).

A total score approach using a composite score obtained from individual facets or the facets score approach which analyses each facet of the construct separately. The authors maintain that both approaches miss some information, as a composite score highlights the shared effects but does not separate the unique effects from the shared variance.

Analyzing the facets separately taps into their unique contributions, but the specific effects of the facets are often entangled with the effects of the shared general construct.  
(p. 436)

For the purpose of this evaluation study we utilized a total score approach and an individual score approach to obtain a more rounded representation from the data. This encompassed both the IMI and the holistic functioning assessment.



**Holistic functioning assessment.** The second instrument employed by the treatment facility is a modified Holistic Functioning Assessment (HFA). The original assessment is broken into six domains: (a) Leisure, (b) Physical, (c) Daily Living, (d) Cognitive, (e) Psychological, and (f) Social Functioning (Dehn, 1995). In an effort to be efficient, the treatment facility selected only four of these domains due to the volume of caseloads: (a) Leisure, (b) Physical, (c) Daily Living, and (d) Social Functioning. All four domains contain the original seven questions. Each domain consists of seven questions that utilize a 5-point Likert scale to respond, 1 representing almost never and 5 representing almost always. Higher scores, except for the reverse coded questions, which are questions 4 and 7 in each domain, indicate higher levels of functioning within the given domain. The total score indicates an overall increase or decrease in HF.

For the purpose of this evaluation study, this instrument mirrored the IMI psychometric properties, as there is currently no research utilizing the psychometric properties of the HFA, nor is there any information reporting the reliability and the validity of the instrument. All four domains of the HFA were analyzed using a total score approach and an individual score approach.

**Leisure inventory.** The Leisure Inventory assessment identifies the patients' recreation/leisure pursuits. Categories within the assessment included: (a) team sports, (b) individual sports, (c) dance, (d) arts and crafts, (e) music, (f) table games, (g) individual sedentary activities, (h) outdoor activities, (i) volunteer service, (j) literacy/continuing education, and (k) community activities. These items were collected to determine the patients' interests and possible opportunity of introducing or teaching new coping skills. It also described the population and leisure patterns prior to treatment. This binary data was summed and compiled

into a composite score. This was utilized in the quantitative analysis as an independent variable for the linear regression.

**Qualitative analysis.** Four open-ended questions were provided in order to gain more understanding of how the RT program operates from the perspective of the client. The four questions included: (a) How has your involvement in recreation activities in the recreation therapy groups influenced your recovery process? (b) Did you experience pleasure, enjoyment, or fun in the activities and why do you think this was the case for you? (c) Did the recreation activities help you change how you perceive yourself and your abilities? Please explain. And (d) Did you feel tension, nervous, or anxious while participating in recreation therapy activities? If you did, why do you think this was the case? If not, why do you think you did not? These questions were specifically designed to give feedback to the modality and treatment service of RT.

A content analysis was conducted to determine various concepts, codes, and categories among patients at the various sites (Hsieh & Shannon, 2005). The lead researcher read all responses from the four open ended questions repeatedly to achieve immersion and understanding of the material (Tesch, 1990). Exact words were highlighted that represent concepts or codes (Hsieh & Shannon, 2005). As the lead researcher advanced through the material, more codes were created that were grouped into categories and subcategories representative of main themes at the treatment facility (Hsieh & Shannon, 2005). This was implemented with the hope these themes would give additional perspectives on how SU treatment occurs at the treatment facility.

**Analysis**

Data for this study came from the third quarter in 2015. Responses were initially grouped together by facility (the treatment facility has three sites) and question number, resulting in twelve sections. These sections were reviewed for key words, themes, categories, subcategories, and frequency. This established a hierarchical structure that was derived from the content of the responses. After the principal investigator and an external auditor reviewed the sections by comparing each facility, it was determined responses were similar in nature. Additionally, by assessing each facility it was concluded that they contained the same population, recreation therapists, design of program, and facilitated service. Furthermore, results were comparable to a pilot study conducted the previous year with three quarters of data. It was determined the only difference between facilities was location.

All of the responses from the four qualitative questions were analyzed for Facility 1, Facility 2, and Facility 3. Responses from each question were reviewed three times with each top three themes in mind. One to four quotes were selected to illustrate the meaning of each theme and provide a more in depth understanding.

**Quantitative Analysis**

This study investigated data previously gathered by the treatment facility and was transferred to the researcher through an encrypted email to ensure privacy. Prior to any data analysis, the results were reviewed and cleaned for missing responses. Any outliers that were inconsistent with the sample parameters were deleted. Data was also reviewed to ensure there was no identifying information that could potentially violate a patient's anonymity within the program. Questions 9, 11, and 13 (as an example) within the IMI were reverse coded and entered according to coding instructions. In addition, descriptive statistics were utilized to

understand the characteristics of our sample (e.g., age, gender). For the inferential statistics, there were two types of tests utilized for this study: (a) a paired T-Test and (b) linear regression. R, the statistical software program was used to run all the testing. Total pre- and post-test scores were tabulated for the IMI and HF and a paired T-Test was run. Pretest scores for the IMI and HF were compared to post-test scores to examine differences between both groups.

Furthermore, as a multivariate approach was used and the following variables acted as controls:

(a) length of stay in treatment, (b) the site treatment occurred, (c) gender, (d) age, and (e) number of refusals to participate in treatment.

### **Results**

The purpose of this study was to observe changes in intrinsic motivation and holistic functioning as a result of recreation therapy interventions utilized at a treatment facility for adults engaged in substance use. Findings are intended to provide insight that may help adults, families, and recreational therapists understand effective treatment options for SU populations.

Prior to the data analysis, the results were reviewed and cleaned for missing responses and outliers inconsistent with the sample parameters were deleted. Originally, the data set included 154 observations (taken from the third quarter of 2015). After data cleaning, 104 observations were available for analysis. The primary hypothesis stated that after controlling for socioeconomic variables, such as age, gender, and length of stay, there would be a significant difference between pre- and post-tests in IM and HF for patients at the treatment facility.

#### **Paired T-Test**

The first statistical test conducted was a Paired T-Test. All five instruments were analyzed: (a) the Intrinsic Motivation Inventory (IMI) and the four subsets of holistic functioning, (b) Physical, (c) Social, (d) Leisure, and (e) Daily Living Functioning. The purpose

of this initial test was to preliminarily see if the scores had changed after treatment to discover whether or not the therapeutic interventions provided by the treatment facility (including, but not limited to, recreational therapy) had any impact on participants. All five instruments' scores increased significantly from pre-test to post-test, utilizing a 95% confidence level. The individual results for each instrument and the associated implications are as follows.

Participation in therapeutic services, including recreation therapy, significantly improved the intrinsic motivation scores of program participants. The average pre-test score was 0.24 and the average post-test score was 0.56 ( $t=5.007$ ). Physical functioning significantly increased, more so than did the other instruments analyzed. The average pre-test score was 0.71 and the average post-test score was 1.01 ( $t=11.295$ ). Social functioning significantly increased with an average pre-test score of 0.21 and an average post-test score of 0.41 ( $t= 6.015$ ). Leisure functioning was another domain that significantly increased for participants during programming. The average pre-test score was 0.34 and the average post-test score was 0.63 ( $t= 6.843$ ). Lastly, daily living functioning significantly increased for participants who engaged in therapeutic services, including recreation therapy. The average pre-test score was 0.31 and the average post-test score was 0.60 ( $t= 6.19$ ).

### **Multivariate Testing**

Three additional analyses provided clarity and strength to the evaluation in a way the t-test could not. The t-tests determined whether the instrument scores significantly changed, but did not provide any further information on why. The first multivariate analysis replicated the t-test but also included key variables as controls. The next approach sought to predict outcomes in the form of post-test scores. And the third approach gave insight into how patient score's changed over the course of treatment and what factors affected this change.

Another important purpose of the multivariate tests was to examine the potential impact of two key control variables: (a) length of stay in treatment and (b) the number of refusals to participate in RT programming. The results of all three multivariate analyses are as follows, with regard to our two previously mentioned control variables.

**Multivariate tests.** Test one discovered a negative relationship between the number of refusals to participate in RT groups and decreases in one of the domains of holistic functioning. Specifically, we saw decreases in daily living functioning as the number of refusals to participate increased. For a one-unit increase in refusals to participate, daily living functioning decreased by 0.125 units ( $t=-1.998$ ,  $p=0.049$ ). Test two reported the significance of refusals in RT programming and declines in daily living functioning. For a one-unit increase in refusals to participate, daily living functioning decreased by 0.139 units ( $t=-2.424$ ,  $p=0.016$ ). Test three identified a positive relationship between the length of stay and increases in physical functioning. For every one-unit increase in length of stay at discharge, physical functioning increased by 0.029 units ( $t=2.2$ ,  $p=0.03$ ).

### **Themes in the Qualitative Data**

Participants were also asked four open-ended questions upon discharge. All of the responses from these four questions were analyzed for each of the three treatment facilities. Responses from each question were reviewed three times by the principal investigator and an external auditor. Codes were created and these codes were grouped into categories and subcategories that are representative of main themes at the treatment facility (Hsieh & Shannon, 2005). Presented below are the top three themes from the content analysis. These themes are intended to give additional perspective of how the modality of RT can impact the treatment of SU.

**Sober fun.** Sober fun is a main theme at the treatment facility and is reflected in their mission statement about RT. “Sober recreation therapy provides a vehicle for patients to discover and recreate themselves while practicing skills in a safe supportive environment” (Recovery Ways, n.d., p. 2). Sober fun represented 48 total responses from the content analysis. Of the ten hours of leisure education provided weekly, eight of those hours provide opportunities to recreate. One patient reflected on the connection between sobriety and fun this way: “Rec therapy has influenced my recovery process by showing me sobriety can be fun. It has helped me to learn what activities can be leisure and fun for me.” Another patient disclosed how RT reconnected them with activities they once enjoyed: “It taught me that it is still possible to have fun sober and reintroduced me to some of the things that I've always loved to do but just had forgotten about them because of my addiction.” Another patient linked their sober fun to the group they were with: “The rec activities showed me that there is enjoyment in sobriety and showed me how important sober support is. These activities would not have been nearly as fun or enjoyable without a solid support group to do them with.” Lastly, one patient shared unique experiences during RT that reminded him of life before addiction.

The first three times at this recovery facility I had very vivid experiences of ‘Normalcy,’ all three during RT. Sitting and painting on a hill in a park with a friend never once thinking about a drink. Shooting pool, joking around, socializing with friends never thinking about a drink. Paddle boating, playing in the water hanging out and never thinking about a drink. All strengthening moments reminding me how I used to be able to have fun and not drink, and I still can!

Sober fun has led patients to insights and the realization that recovery is attainable. It has helped patients with their struggles with anhedonia. Sober fun has reinforced the importance of

having a positive support system and has demonstrated that one does not need to be under the influence of a substance to enjoy recreational activities. These experiences address the very struggles described by Can and Tanrıverdi (2015), in particular deficits in social engagement and higher reports of anhedonia among substance users.

**Anxiety and fear.** In reviewing patient comments, a large portion self-reported experiencing anxiety and fear during RT activities. Anxiety and fear represented 38 total responses from the content analysis. One woman stated, “I did. I fear doing new things at times, but I pushed through that and was surprised at what I learned and what my capabilities are.” Many others reported having initial fear or apprehension about RT activities, but then experienced personal growth and confidence. Another shared, “A little at first because of my perception that I might not be physically able to do things well as I would like. After a while I gained confidence and the anxiety went away.” One patient described initially experiencing anxiety and then transitioning to feelings of fun. He stated,

Of course I had anxiety at first. It's been 10 years since I did anything of this kind of stuff sober. I was nervous of what to expect or how I would do but as I progressed and became more comfortable it became fun and those feelings went away.

Some of the patients' fear and anxiety stemmed not from the activity itself, but from their perception of how they would perform in front of their peers. One patient shared,

I did feel nervous before trying new things, but that quickly dissolved once we started. Once we were in the activity, I felt very comfortable and had fun. I think the reason for anxiety was the same as mentioned above-fear of looking silly or being bad at something-judgment.



A subtheme of anxiety and fear is the role of the CTRS during RT. Many patients shared how the CTRSs alleviated stress and gave them encouragement. One stated, “I felt nervous doing a couple activities I have never done, but the staff and peers helped relieve some of this anxiety with their encouragement.” Another shared, “Some, but very little. I was nervous about trying new things but not for long. The rec staff was super encouraging and kind and fun!” One patient shared how her anxiety and fear were relieved by the CTRS, “I did not feel anxious at all. I enjoyed all the activities because I felt so safe with the rec staff. I also felt I could talk to them at any time if I was feeling nervous or overwhelmed.”

Anxiety and fear can be barriers in developing confidence and motivation and can have a debilitating effect on those struggling with SU. These two were the most common self-reported emotions experienced by patients. While the role of a CTRS is multifaceted, within the context of the Leisure Ability Model, one role is to move the patient from being extrinsically motivated to intrinsically motivated (Stumbo & Peterson, 1998). It is here a CTRS can be influential in processing through the patients’ anxieties and fears, which can turn into self-mastery experiences.

**New activities, skills, or things.** In talking with the recreation therapy director of this treatment facility, another emphasis of the RT program is leisure education. New activities, skills, or things represented 29 total responses from the content analysis. “One of our goals is not to replicate an activity while a patient is in our program.” This is manifested through feedback of the patients. One individual recounted,

Getting out and being active had reminded me how important my physical wellbeing effects my emotional and spiritual wellbeing. Doing new activities that aren't usually

available to me (Hiking and rock climbing), has got me thinking about other new activities that I would like to try.

Another patient linked learning new activities to increases in coping skills, “I now have many new activities I can do instead of using.” One patient recounted how new activities gave opportunities to gain further insights to her addiction.

First of all getting out and doing things, especially new activities, kept my spirits high and my mind clear. Also it was mind opening to do adaptive sports. I think it correlates to my sober life and how I'm going to need to adapt my action to fit my disability of drinking.

These experiences represent poignant moments for these individuals. Carruthers and Hood (2002) specifically admonished recreation therapists to increase patients' coping skills. Learning new coping skills and gaining new insights are paramount in developing healthy behaviors in combatting addictive patterns. This should be the focal point in addiction treatment.

### **Discussion**

This study sought to examine changes in intrinsic motivation and holistic functioning from patients in a substance use residential treatment facility. The intrinsic motivation inventory, holistic functioning assessment, and the qualitative data were simultaneously analyzed to examine relationships and potential correlations between increases and decreases in these instruments and the experiences these adults underwent at the treatment facility. While the design of this study cannot suggest a causal relationship between the instrument results and the qualitative data, it does provide potentially interesting insights and future research direction related to recovery principles and relapse prevention protocols.

### **Increases in Physical Functioning**

Participation in therapeutic services, including recreation therapy, significantly improved the post scores of program participants in physical functioning. In the multivariate analyses, the main objective was to see if we could predict the amount of change using two treatment variables: length of stay and refusals, thus controlling for other factors. In general, this was not supported, however, it was established that length of stay positively predicted changes in physical functioning. In other words, there was a correlation between the length patients were in treatment and higher physical function. This was an expected outcome from the treatment facility program. Patients entering treatment in general were at the peak of their substance usage prior to admission, according to the treatment facility, and typically at low levels of physical functioning. The treatment facility structured program allows individuals to experience proper physical exercise in a variety of activities and tasks. The results of this study appear to address, in some degree, the suggestion of Smith & Lynch (2011) that physical exercise is a non-drug reinforcer and decreases comorbid risk factors associated with substance use.

### **Perceptions of Recovery**

Out of the numerous themes derived from patient feedback, the highest in frequency was sober fun. Sober fun can be interpreted many different ways, but a common thread expressed through various patient comments was the realization that sobriety can be fun. This can be traced back to one of the treatment facility's aims to increase patients' leisure functioning. Anhedonia is another comorbid risk factor that can be addressed and treated, either separately or simultaneously through enhancing a patient's leisure functioning (Garfield, Lubman, & Yücel, 2014). This threatening combination has the ability to rob one of his or her intrinsic motivation and push further into severe substance use. Thereby, prescribed recreation interventions have the

capacity to either teach or reteach individuals the inherent value of recreation and leisure and address challenges associated with anhedonia.

The average length of stay was 31 days. In that time, patients were exposed to roughly 16-20 leisure education groups that totaled 32-40 hours of healthy recreation experience. Involvement with sober fun was expressed by both males and females and was present at all three treatment sites for the treatment facility. The antithesis of this statement is sobriety and recovery can or will be tiring, unpleasant, and boring. If those struggling with SU perceive the road to abstinence as an arduous labor, how much more difficult will instilling recovery principles be? Ryan and Deci's (2000) levels of motivation can be a useful reference in determining where patients are on the continuum, and determining appropriate actions to increase a patient's intrinsic motivation (Ryan, 1982). Data from this study suggests the importance of intrinsic motivation as represented by scores on the IMI. We assume patients' intrinsic motivation increased as we observed a general increase from pre- to post-test scores in their inherent interest and enjoyment of the recreation activities.

### **A Catalyst for Change**

Another connection attempting to link the qualitative data and IM is the experience of fear and anxiety reported by the patients from open-ended questions at discharge. Perceived competence is posited to be a positive predictor of both self-report and behavioral measures of IM and pressure/tension is posited to be a negative indicator of IM (SDT, 2016). Both men and women of all ages at all of the recovery sites discussed their experiences with feeling pressure and tension. What is intriguing is how many of the patients self-reported the critical role of the CTRS during these moments. Further research should investigate the role of the CTRS in addressing pressure and tension. Patients' comments suggest that the CTRS may facilitate

increase in motivation to change as they assist individuals work through strong emotions of fear and anxiety. As previously shared, West (2001) identified that motivation is a key variable in treating SU and that it may be more of a factor than previously recognized in the treatment of SU. Recreation therapists hold the capacity to shape, create, and design environments through facilitated tasks and activities where patients can increase their self-determination and intrinsic motivation (Ryan & Deci, 2000).

### **Limitations**

Various limitations exist based on the results of this study. The first limitation of this study involves the possibility of other therapies having an influence on IM that are not controlled for in this evaluation study. The treatment team at the facility embraces an interdisciplinary approach by involving addiction psychiatrists, physicians, social workers, life skills therapists, recreational therapists, occupational therapists, and nurses in addressing substance use.

The second limitation of this study correlates with the first in that this evaluation study lacks a control group for comparison in the analysis. This evaluation study sought out potential candidates that would be enrolling into the treatment facility as a possible control group, but admissions to the treatment facility do not follow a consistent trend and the hope of procuring a comparison group became unfeasible.

The third limitation is the variation in severity of patients' SU in treatment: (a) length of use, (b) use patterns, and (c) the type of drug(s) in use. These variables cannot be controlled and these variations may influence the possible effectiveness of treatment.

The last limitation is the instruments themselves. The IMI and HFA were modified to fit the treatment facility programming and were organized to create a shorter survey, as opposed to previous research recommendations (Monteiro, Mata, & Peixoto, 2015).

**Recommendations**

Based on the results of this study, various recommendations can be considered. The primary population of this evaluation study was white adult males. Future research should include a wider representation demographically (e.g., ethnicity, age, ability status). This would represent a more diverse data sample that was not based on convenient data collection.

Another recommendation for future studies would be to include a post follow-up assessment. A long-term component would assist in determining the impact of recreation therapy interventions on intrinsic motivation and holistic functioning at the treatment facility. Another beneficial addition would be to include more control variables into the study. The evaluation study was unable to identify patients' socioeconomic status, substance use history, funded vs. unfunded treatment, and voluntary vs. involuntary admission data. Additional data would provide a better understanding of the population being served at the treatment facility and its similarity or dissimilarity to other facilities.

**Conclusion**

There is a dearth of research examining substance use from a recreation therapy view point in the last ten years (Cogswell & Negley, 2011; Cooke, 2013; Snead et al., 2015; Van Hout, 2008). This evaluation study provides much needed insight. Through both the quantitative and content analyses, this study indicates that recreation therapy interventions can be used to influence and improve development of intrinsic motivation and holistic functioning. This research also lays the ground work for future studies by emphasizing the limitations and recommendations for motivation-based recreational therapy treatment of substance use populations.

### References

- Addington, J., & Addington, D. (1999). Neurocognitive and social functioning in schizophrenia. *Schizophrenia Bulletin*, 25(1), 173-182.
- Alcoholics Anonymous. (2001). *Alcoholics Anonymous*, 4th Edition. New York, NY: A.A. World Services.
- American Therapeutic Recreation Association (2015). Retrieved from <https://www.atra-online.com>
- Austin, D. (2004). *Therapeutic recreation: processes and techniques*. 5th ed. Champaign, Ill.; Sagamore Publishing.
- Biddle, S. H., Mutrie, N., & Gorely, T. (2015). *Psychology of physical activity: Determinants, well-being and interventions.*, 3rd ed. New York, NY: Routledge/Taylor & Francis Group.
- Can, G., & Tanriverdi, D. (2015). Social functioning and internalized stigma in individuals diagnosed with substance use disorder. *Archives of Psychiatric Nursing*.
- Carruthers, C. P., & Hood, C. D. (2002). Coping skills programs for individuals with alcoholism. *Therapeutic Recreation Journal*, 36(2), 154.
- Cogswell, J., & Negley, S. K. (2011). The effect of autonomy-supportive therapeutic recreation programming on integrated motivation for treatment among persons who abuse substances. *Therapeutic Recreation Journal*, 45(1), 47.
- Cooke, C. (2013). Therapeutic recreation and the twelve steps. *American Journal of Recreation Therapy*, 17-24.
- Cooney, G. M., Dwan, K., Greig, C. A., Lawlor, D. A., Rimer, J., Waugh, F. R., ... & Mead, G. E. (2013). Exercise for depression. *Cochrane Database Syst Rev*, 9(9).

- Csikszentmihalyi, M., (1991). *Flow: The psychology of optimal experience* (Vol. 41). New York, NY: Harper Perennial.
- Cummings, C., Gordon, J. R., & Marlatt, G. A. (1980). Relapse: Prevention and prediction. *The addictive behaviors*, 291-321.
- Daley, D. C., & Marlatt, G. A. (1992). Relapse prevention: Cognitive and behavioral interventions. *Substance abuse: A comprehensive textbook*. Baltimore, MD: Williams & Wilkins, 533-542.
- Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. University of Rochester Press.
- Deci, E. L., & Ryan, R. M. (2000). The " what" and" why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological inquiry*, 11(4), 227-268.
- Dehn, D. (1995). *Leisure step up*. Enumclaw, WA: Idyll Arbor.
- Dehn, D. (1996). Leisure step up: An innovative approach in offering therapeutic recreation services. *Parks & Recreation*, 31, 64.
- Faulkner, R. (1991). *Therapeutic recreation protocol for treatment of substance addictions*. State College, Pa.; Venture Publishing.
- Garfield, J. B., Lubman, D. I., & Yücel, M. (2014). Anhedonia in substance use disorders: A systematic review of its nature, course and clinical correlates. *Australian and New Zealand Journal of Psychiatry*, 48(1), 36-51.
- Giesen, E. S., Deimel, H., & Bloch, W. (2015). Clinical exercise interventions in alcohol use disorders: A systematic review. *Journal of substance abuse treatment*, 52, 1-9.
- Gorczyński, P., & Faulkner, G. (2010). Exercise therapy for schizophrenia. *Cochrane Database Syst Rev*, 5.



- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative health research, 15*(9), 1277-1288.
- Hutchinson, S., & Dattilo, J. (2001). Processing: Possibilities for therapeutic recreation. *Therapeutic Recreation Journal, 35*(1), 43.
- McAuley, E., Duncan, T., & Tammen, V. V. (1989). Psychometric properties of the intrinsic motivation inventory in a competitive sport setting: A confirmatory factor analysis. *Research quarterly for exercise and sport, 60*(1), 48-58.
- Moggi, F., Ouimette, P. C., Moos, R. H., & Finney, J. W. (1999). Dual diagnosis patients in substance abuse treatment: Relationship of general coping and substance-specific coping to 1-year outcomes. *Addiction, 94*(12), 1805-1816.
- Monteiro, V., Mata, L., & Peixoto, F. (2015). Intrinsic motivation inventory: Psychometric properties in the context of first language and mathematics learning. *Psicologia: Reflexão e Crítica, 28*(3), 434-443.
- National Council for Therapeutic Recreation Certification (2015). Retrieved from <https://www.nctrc.org>
- National Institute on Drug Abuse (2015). Retrieved from <https://www.drugabuse.gov>
- Priest, S., & Gass, M. (1997). *Effective leadership in adventure programming*. Champaign, Ill.; Human Kinetics.
- Rancourt, A. M. (1991). An exploration of the relationships among substance abuse, recreation, and leisure for women who abuse substances. *Therapeutic Recreation Journal, 25*(3), 9-18.
- Recovery Ways, (n.d.). Retrieved from <http://www.recoveryways.com/>

Ryan, R. M. (1982). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. *Journal of personality and social psychology*, 43(3), 450.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68.

Self-Determination Theory, (2016). Retrieved from

<http://www.selfdeterminationtheory.org/intrinsic-motivation-inventory/>

Sharma, M., & Smith, L. (2011). Self-determination theory and potential applications to alcohol and drug abuse behaviors. *Journal of Alcohol and Drug Education*, 55(2), 3-7.

Shiffman, S., & Wills, T. A. (Eds.). (1985). *Coping and substance abuse*. Academic Press.

Smith, M. A., & Lynch, W. J. (2011). Exercise as a potential treatment for drug abuse: Evidence from preclinical studies. *Frontiers in psychiatry*, 2.

Snead, B., Pakstis, D., Evans, B., & Nelson, R. (2015). The use of creative writing interventions in substance abuse treatment. *Therapeutic Recreation Journal*, 49(2), 179.

Stumbo, N. J., & Peterson, C. A. (1998). The leisure ability model. *Therapeutic Recreation Journal*, 32(2), 82.

Substance Abuse and Mental Health Services Administration (2014). Retrieved from <http://www.samhsa.gov>

Tesch, R. (1990). *Qualitative analysis: Analysis types and software tools*. London, UK: Falmer Press.

Van De Pol, P., & Kavussanu, M. (2012). Achievement motivation across training and competition in individual and team sports. *Sport, Exercise, and Performance Psychology*, 1(2), 91.

- Van Hout, M. (2008). Perception of social context and activity following participation in a physical fitness intervention during residential adolescent addiction treatment. *American Journal of Recreation Therapy, 27-43.*
- West, R. (2001). Theories of addiction. *Addiction, 96(1), 3-13.*
- Wipfli, B. M., Rethorst, C. D., & Landers, D. M. (2008). The anxiolytic effects of exercise: a meta-analysis of randomized trials and dose-response analysis. *Journal of Sport & Exercise Psychology, (30), 392-410.*

## Tables

Table 1

*Paired t-test*

	Interval (Low)	Interval (high)	t	p
Daily Living				
Functioning	0.31	0.60	6.19	0.00
IMI	0.24	0.56	5.01	0.00
Leisure Functioning	0.34	0.63	6.84	0.00
Physical Functioning	0.71	1.01	11.30	0.00
Social Functioning	0.21	0.41	6.02	0.00

Table 2

*Descriptive Statistics*

	N	Minimum	Maximum	Mean	Standard Deviation
Test 1					
postIMIconposite	103.00	3.22	6.56	4.88	0.51
postLFcomposite	103.00	2.29	4.86	3.95	0.51
postPFcomposite	103.00	1.86	5.00	3.85	0.65
postDLFcomposite	103.00	2.71	5.00	4.40	0.47
postSFcomposite	103.00	2.43	5.00	3.98	0.48
Test 2					
compositeIMI	103.00	1.67	6.00	4.47	0.72
compositeLF	103.00	1.57	4.86	3.46	0.65
compositePF	103.00	1.29	4.57	2.99	0.74
compositeDLF	103.00	1.43	5.00	3.94	0.73
compositeSF	103.00	2.14	5.00	3.67	0.54
Test 3					
changescoreIMI	103.00	-1.78	3.33	0.40	0.82
changescoreLF	103.00	-1.86	2.43	0.49	0.72
changescorePF	103.00	-0.57	3.14	0.86	0.78
changescoreSF	103.00	-0.86	2.14	0.31	0.52
changescoreDLF	103.00	-1.14	3.14	0.46	0.75

Table 3

Model 1: Predicting All Scores

	Daily Living Functioning Composite			IMI Composite			Leisure Functioning Composite			Physical Functioning Composite			Social Functioning Composite		
	$\beta$	t	p	$\beta$	t	p	$\beta$	t	p	$\beta$	t	p	$\beta$	t	p
Age	0.01	2.35	0.02	0.00	-0.91	0.37	0.00	0.71	0.48	0.00	-0.79	0.43	0.01	2.68	0.01
Composite All (activities)	0.01	2.71	0.01	0.01	3.36	0.00	0.01	1.68	0.09	0.01	2.44	0.02	0.01	1.74	0.08
Facility (BE)	-0.26	-2.65	0.01	-0.11	-1.04	0.30	-0.33	-3.42	0.00	-0.38	-3.39	0.00	-0.35	-4.25	0.00
Facility (BW)	-0.19	-1.72	0.09	-0.29	-2.58	0.01	-0.18	-1.71	0.09	-0.27	-2.21	0.03	-0.15	-1.65	0.10
Length of Stay (LOS)	-0.02	-2.12	0.04	0.01	1.07	0.29	-0.02	-2.21	0.03	-0.02	-2.41	0.02	-0.01	-1.62	0.11
Male	0.17	1.94	0.05	0.02	0.28	0.78	0.09	1.04	0.30	-0.18	-1.79	0.08	0.27	3.66	0.00
Refusals	-0.14	-2.42	0.02	0.01	0.14	0.89	0.01	0.20	0.84	-0.10	-1.59	0.11	0.02	0.33	0.74
Post	0.41	4.96	0.00	0.35	4.05	0.00	0.46	5.68	0.00	0.82	8.83	0.00	0.27	3.83	0.00

Note. This data utilizes the multivariate short data sheet in a linear model. The model consists of running 5 dependent variables which are: DLF composite, IMI composite, LF composite, PF composite, and SF composite. The independent variables run against all the dependent variables are as follows: age, composite all activities, BE facility, BW facility, Length of stay, Male, refusals, and post.

Table 4

Model 2: Predicting Post Scores

	Daily Living Functioning Post Composite			IMI Post Composite			Leisure Functioning Post Composite			Physical Functioning Post Composite			Social Functioning Post Composite		
	$\beta$	t	p	$\beta$	t	p	$\beta$	t	p	$\beta$	t	p	$\beta$	t	p
Age	0.00	0.85	0.40	-0.01	-2.16	0.03	-0.01	-1.35	0.18	0.00	-0.70	0.49	0.00	-0.25	0.80
All Activities	0.00	0.27	0.79	0.00	0.62	0.54	0.01	1.52	0.13	0.00	-0.66	0.51	0.00	0.89	0.38
Pre Composite DLF	0.07	0.83	0.41	0.06	0.62	0.54	-0.09	-1.03	0.30	-0.06	-0.52	0.60	-0.03	-0.40	0.69
Pre Composite IMI	-0.01	-0.09	0.93	0.11	1.37	0.17	-0.04	-0.44	0.66	0.01	0.08	0.94	-0.01	-0.20	0.84
Pre Composite LF	0.00	0.04	0.97	0.07	0.60	0.55	0.07	0.64	0.53	0.01	0.08	0.93	0.06	0.64	0.52
Pre Composite PF	0.07	0.77	0.44	-0.14	-1.39	0.17	-0.02	-0.20	0.84	0.31	2.62	0.01	-0.09	-1.07	0.29
Pre Composite SF	0.12	1.08	0.28	-0.05	-0.44	0.66	0.40	3.38	0.00	0.13	0.88	0.38	0.41	4.10	0.00
Facility (BE)	0.10	0.86	0.39	0.11	0.81	0.42	0.04	0.29	0.77	-0.22	-1.38	0.17	-0.12	-1.11	0.27
Facility (BW)	-0.04	-0.35	0.73	-0.03	-0.18	0.86	0.01	0.05	0.96	-0.26	-1.56	0.12	0.00	0.03	0.98
Length of Stay (LOS)	-0.01	-0.99	0.33	0.01	0.83	0.41	0.00	-0.31	0.76	0.01	0.60	0.55	-0.01	-1.15	0.25
Male	-0.20	-2.01	0.05	0.18	1.63	0.11	-0.05	-0.50	0.62	0.02	0.15	0.88	-0.29	-3.15	0.00
Refusals	-0.13	-2.00	0.05	-0.05	-0.66	0.51	-0.06	-0.83	0.41	-0.15	-1.69	0.09	-0.09	-1.56	0.12

Note. This test utilized the paired short data set and was a linear model. Dependent variables were the post instruments, see heading for each column. Independent variables were: age, composite all activities, composite DLF, IMI, LF, PF, & SF, BE, BW, LOS, Male, and refusals.

Table 5

Model 3: Predicting Change Scores

	Daily Living Functioning Change Score			IMI Change Score			Leisure Functioning Change Score			Physical Functioning Change Score			Social Functioning Change Score		
	$\beta$	t	p	$\beta$	t	p	$\beta$	t	p	$\beta$	t	p	$\beta$	t	p
Age	-0.01	-1.28	0.20	-0.01	-1.64	0.10	-0.01	-1.79	0.08	0.00	-0.38	0.71	-0.01	-1.80	0.07
Composite All (activities)	-0.01	-1.95	0.05	-0.02	-2.21	0.03	0.00	-0.52	0.60	-0.02	-2.38	0.02	0.00	-0.56	0.57
Facility (BE)	0.43	2.46	0.02	0.45	2.45	0.02	0.48	2.89	0.00	0.00	-0.01	0.99	0.11	0.92	0.36
Facility (BW)	0.10	0.52	0.61	0.46	2.24	0.03	0.26	1.40	0.16	-0.17	-0.88	0.38	0.12	0.92	0.36
Length of Stay (LOS)	0.00	0.17	0.87	0.00	0.35	0.72	0.02	1.44	0.15	0.03	2.20	0.03	0.00	-0.36	0.72
Male	-0.05	-0.34	0.74	0.29	1.82	0.07	-0.05	-0.31	0.75	-0.16	-1.02	0.31	-0.21	-2.03	0.04
Refusals	0.01	0.06	0.96	-0.07	-0.65	0.52	-0.04	-0.39	0.69	-0.09	-0.87	0.39	-0.13	-1.92	0.06

Note. This test utilized the paired short data and used a linear model. The five instruments were converted (compute new variable) to change scores (post-pre) dependent variables. Then they were analyzed against the following independent variables: age, composite all activities, BE, BW, LOS, Male, and refusals.

**Appendix A: Prospectus**

### **Introduction**

Through my adolescent and young adult years, I struggled with an addiction to legal and illegal substances. I experienced many hardships and difficulties from my decision to engage in this type of negative coping. These experiences have motivated the present study under consideration. Substance use (SU) has been addressed through various methodologies over the last few decades. Our motivation in the proposed evaluation study is to utilize a therapeutic recreation (TR) focused lens to study aspects of SU treatment.

Individuals struggling with an addiction may or may not be able to identify a certain point when they recognized they had a problem. Many addicts began using substances out of curiosity, boredom, trauma, or life stressors. At first these substances provided relief, means of escape, stimulation, or the numbing of serious emotional pain. Because life is full of these experiences, some individuals revert back to SU as a means of coping. Not only are these patterns of abuse costly to the individual but to families, communities, and nations. “Abuse of tobacco, alcohol, and illicit drugs is costly to our nation, exacting more than \$700 billion annually in costs related to crime, lost work productivity, and health care” (National Institute on Drug Abuse [NIDA], 2015). Thankfully, through the efforts of researchers and practitioners, tools are being refined and developed to combat this plague.

Common interventions utilized in treating SU are Cognitive Behavioral Therapy (CBT), Motivational Interviewing (MI), and Medically Assisted Therapy (MAT). Another discipline treating SU is recreation therapy (RT). RT is a modality utilizing recreation and leisure interventions to improve the quality of life of individuals. This discipline utilizes a holistic approach by treating and addressing patients’ physical, emotional, social, cognitive, and spiritual needs through experiential tasks, activities, and initiatives. RT has been a valid modality treating



SU for the last few decades (Rancourt, 1991; Snead, Pakstis, Evans, & Nelson, 2015; Van Hout, 2008).

An area greatly impacted by SU is an individual's engagement in recreational activities. This may be directly related to anhedonia, a clinically defined reduction in pleasure or pleasure from activities once seen as enjoyable. Recreational therapists have the skill set to address SU from the unique perspective of recreation and leisure. Common RT interventions used in the treatment of SU include leisure education, community integration, and experiential initiatives designed to increase self-efficacy. Other associated outcomes of RT treating SU are increased self-awareness, self-confidence, empowerment, and motivation. Motivation is the central focus of this study. Adults engaged in SU often become complacent and apathetic about changing their circumstances and as West (2001) pointed out, this is where recovery can begin with a change in motivation. A prominent theory that lends itself well to understanding the motivations behind SU is Self-Determination Theory (SDT).

While there are many approaches in treating and preventing SU disorders, motivation is a key variable in treating individuals struggling with SU. The organization with whom we plan to work is specifically interested in learning how to increase their patients' intrinsic motivation (IM) to continue living a sober lifestyle after discharge. Substantial efforts are made to rescue, heal, teach, and help these individuals reclaim their lives and flourish in recovery.

SDT is a study of the different levels of motivation in which human beings engage or disengage (Ryan & Deci, 2000). It is a theory that implies humans are naturally energetic, progressing, and growing entities continually striving toward a more sophisticated and cohesive sense of self (Deci & Ryan, 2002). A component of SDT is the Basic Needs Theory, which is composed of three parts: (a) competence, (b) relatedness, and (c) autonomy. When satisfied, these basic

psychological needs contribute to health and wellbeing. When they are not satisfied, they contribute to pathology and ill being (Ryan & Deci, 2000). These basic needs can also be satisfied through unhealthy coping skills and maladaptive behaviors such as SU. Ideally, these basic needs can be satisfied through intrinsic goal setting, community involvement, and personal achievement and progression (Ryan & Deci, 2000). The Basic Needs Theory allows researchers within addiction studies to observe how addicts are meeting basic psychological needs and how to better facilitate recovery.

### **Problem Statement**

The problem of this study is to investigate the differences between pre- and post-test scores on intrinsic motivation (IM) and holistic functioning (HF) as a result of recreation therapy interventions for adults in a drug recovery treatment center. Various control variables will be evaluated to see which ones, if any, have an impact on IM and HF (e.g., RT interventions, gender, age, length of stay). A content analysis will also be conducted on open ended questions asked during discharge.

### **Purpose of the Study**

The purpose of this study is to observe changes in intrinsic motivation and holistic functioning as a result of recreation therapy interventions utilized at a substance use treatment facility for adults engaged in substance use. Findings may provide insight that will help adults, families, and recreational therapists understand effective treatment options for SU populations.

### **Need for the Study**

To date, no known studies have examined changes in IM and HF for adults engaged in SU participating in RT services. Previous research investigated “the effect of an autonomy-supportive therapeutic recreation program on motivation for treatment and perceived autonomy-

supportive environment” (Cogswell & Negley, 2011, p. 47). In their recommendations, they called for a larger sample size and focus on the program content rather than the process. This study focused on the autonomy-supportive process, including providing choice and perspective taking as a way to pinpoint motivation. Recommendations suggest changing the content of the program to target motivation. The proposed study intends to triple the sample size and examine the program’s content, specifically RT interventions aimed at increasing IM. Again, while this previous study investigated autonomy support and motivation within a SU population, our study intends to evaluate the effectiveness of RT interventions that may or may not impact IM and HF within an SU population.

Another area this study intends to address is the general lack of RT research addressing SU. Previous researchers have also identified the overall dearth of research exploring chemical dependency and recreation (Berg & Neulinger, 1976; Hitzhusen, 1977). Within the last ten years, there have only been a handful of research articles addressing SU from an RT standpoint. The following topics illustrate the limited contributions from RT over the last decade: creative writing interventions in treating SU (Snead, Pakstis, Evans, & Nelson, 2015), RT activities designed to enhance the 12-step process (Cooke, 2013), and physical fitness as an RT intervention treating SU (Van Hout, 2008).

The lack of research is disconcerting considering “most recreational therapists are employed by health care agencies and work in traditional inpatient hospitals” where most acute substance abuse clinics are provided (American Therapeutic Recreation Association [ATRA], 2015). Furthermore, according to the National Council for Therapeutic Recreation Certification (NCTRC), the primary population served by recreational therapists is behavioral/mental health clients at 37.5%, number one among other fields of employment (NCTRC, 2015). Addiction

treatment falls under this category. With the majority of recreational therapists working in this field, the need for current research is substantial.

Thus, there is a clear gap in understanding how these three variables relate: (a) RT interventions, (b) IM, and (c) adults who struggle with SU. Since this relationship has not been studied to date, there is a possibility of a non-relationship between the three variables. Another concern is the sheer lack of academic articles available to practitioners who treat this primary population. If a positive relationship is discovered between these variables, results may be beneficial for recreational therapists, other clinicians, and families. Findings from this evaluation study could also be useful to residential treatment centers and other types of psychiatric hospitals where adults are often sent for initial SU treatment.

### **Delimitations**

The scope of the study will be delimited to the following:

1. Responses will be collected from adults participating in Recovery Ways, ages 18 and up.
2. The Intrinsic Motivation Inventory (IMI) will be used to measure increases and decreases in intrinsic motivation (Ryan, 1982).
3. The Holistic Functioning Assessment will be used to measure increases and decreases in a) physical, (b) social, (c) leisure, and (d) daily living functioning (Dehn, 1995).
4. Four qualitative questions will be used in order to gain more understanding of how the recreation therapy program operates from the perspective of the client.
5. Data was collected by the agency from August to November of 2015 and provided to the researcher for secondary data analysis.

**Limitations**

The following are limitations to the study:

1. Because we are utilizing a convenient data sample, this evaluation study is subject to selection bias.
2. The influence of other participants in Recovery Ways on the individual adult responses in the questionnaire cannot be monitored or accounted for, introducing the possibility of unreliable responses.
3. It is possible that other therapies have an influence on IM and are not controlled for in this evaluation study.
4. Although all answers are confidential, SU may be underreported by participants.
5. The variation of severity of patients' SU in treatment, namely length of use, use patterns, and the type of drug(s) engaged in cannot be controlled.
6. This evaluation study lacks a control group for comparison in the analysis.
7. The instruments, specifically the IMI and HFA, have been modified to fit Recovery Ways programming and organization for a shorter survey, as opposed to previous research (Monteiro, Mata, & Peixoto, 2015).

**Assumptions**

The study will be based on the following assumptions:

1. The IMI instrument will provide a valid and reliable measure of increases and decreases in intrinsic motivation (Ryan, 1982).
2. The HF instrument will provide a valid and reliable measure of increases and decreases in physical, social, leisure, and daily living functioning (Dehn, 1995).

3. The recreation staff at Recovery Ways entered the admission and discharge information to the best of their ability in compiling the data set.
4. Participants answered to the best of their ability and were honest in completing the questionnaire.

### **Hypotheses**

The study is designed to test the following working hypotheses (H):

1. H<sub>1</sub>: After controlling for socioeconomic variables (e.g., age, gender, length of stay), there will be a significant difference between pre- and post-tests in IM for patients at Recovery Ways.
2. H<sub>2</sub>: After controlling for socioeconomic variables (e.g., age, gender, length of stay), there will be a significant difference between pre- and post-tests in HF for patients at Recovery Ways.
3. H<sub>3</sub>: Independent variables (e.g., age, gender, length of stay, number of refusals in RT programming, site of recovery treatment) will produce a better than chance prediction of HF or IM.

In addition to these hypotheses a content analysis will be conducted to determine various themes of open ended questions Recovery Ways asks in their discharge assessment.

### **Definitions of Terms**

The following terms are defined to clarify their use in the study:

1. *Substance use*. Current standards in the Diagnostic Statistical Manual (DSM-V) have combined the former disorders (substance dependence and substance abuse) into what is now known simply as substance use. Practitioners can now assess patients on a continuum from mild to severe, which utilizes an eleven criterion base for the continuum

scale. It is the condition in which the use of one or more substances leads to significant impairments in daily functioning (American Psychiatric Association [APA], 2013).

2. *Intrinsic motivation (IM)*. Intrinsic motivation refers to motivation that comes from inside an individual rather than from any external source. An individual engages in the activity for the sake of the activity itself (Ryan & Deci, 2000).
3. *Intrinsic Motivation Inventory (IMI)*. “The IMI is a multidimensional measurement device intended to assess participants’ subjective experience related to a target activity in laboratory experiments” (Self-Determination Theory, 2016).
4. *Leisure*. “The combination of free time and the expectation of preferred experience” (Kleiber, 1999, p.3).
5. *Leisure boredom*. The psychological assumption that accessible leisure opportunities fall short of an individual’s need for optimal stimulation and is likely a result of both situational and dispositional factors (Iso-Ahola & Wiessinger, 1990).
6. *Recreation therapy and therapeutic recreation*. “Recreational therapy, also known as therapeutic recreation, is a systematic process that utilizes recreation and other activity-based interventions to address the assessed needs of individuals with illnesses and/or disabling conditions, as a means to psychological and physical health, recovery and well-being” (ATRA (2015). As for the purpose of this paper, the terms therapeutic recreation and recreation therapy will be used interchangeably.
7. *Holistic functioning*. A person-centered assessment that compartmentalizes an individual’s capacity to perform an array of various tasks. Holistic functioning is broken down into six domains: (a) leisure, (b) physical, (c) daily living, (d) social, (e) cognitive, and (f) psychological functioning (Dehn, 1995).

### **Literature Review**

The purpose of this study is to observe changes in intrinsic motivation and holistic functioning as a result of recreation therapy interventions utilized at a substance use treatment facility for adults engaged in substance use. This review of literature will cover the following areas: (a) Prevalence of adult substance use, (b) Substance use treatment, (c) Recreation therapy treating substance use, (d), Recovery Ways, (e) Self-Determination Theory, (f) Aspects of intrinsic motivation, (g) Self-Determination Theory and substance use, and (h) Holistic functioning.

#### **Prevalence of Adult Substance Use**

The last few decades have shown an escalation of SU among adolescents and adults (Warner, Hedegaard, & Chen, 2014). “Abuse of tobacco, alcohol, and illicit drugs is costly to our nation, exacting more than \$700 billion annually in costs related to crime, lost work productivity, and health care” (NIDA, 2015). Another study done by the National Institute on Drug Abuse (NIDA) from 2001 to 2013 showed an escalation of drug overdose deaths. Studies have found as much as a fivefold increase in overdose deaths relating to prescription opioid pain relievers, benzodiazepines, and heroine (NIDA, 2015). In addition, researchers Warner, Chen, Makuc, Anderson, and Miniño (2011) found that the poisoning death rate has nearly tripled in the last three decades. “Also, among Americans aged 12 or older, the use of illicit drugs has increased over the last decade from 8.3% of the population using illicit drugs in the past month in 2002 to 10.2% (27 million people) in 2014. Of those, 7.1 million people met criteria for an illicit drug use disorder in the past year” (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014). The numbers are staggering and trends seem to worsen from year to year with more adults indulging in these behaviors (Warner et al., 2011).



### **Substance Use Treatment**

The development of substance use treatment has advanced since its primitive beginnings. Early history of substance use treatment in the United States dates back to 1784, with the emergence of Dr. Benjamin Rush. Dr. Rush was a physician and advocate who supported the idea of sober homes and the utilization of teaching drunkards morals and religion as a means of a deterrent (Stolberg, 2006). First noted interventions included cold baths, vomiting, and aversion therapy (e.g., bleeding, blistering, sweating the patient) (White, 1998).

Since those humble beginnings, the evidence basis for substance use treatment has grown substantially supporting current techniques such as motivational interviewing, cognitive behavioral therapy (CBT), and medication assisted treatment (MAT) (Haug et al., 2008; Rieckmann, Abraham, Zwick, Rasplica, & McCarty, 2015). Motivational interviewing is a method based on targeting ambivalence toward behavior change associated with drug and alcohol use, with additional applications in a wide variety of other disorders and behaviors (Miller & Rollnick, 2012). CBT was first intended to treat depression, but is now used for a number of mental illnesses. It is designed to address thinking errors that contribute to behavioral dysfunctions including SU (Beck, 2011). MAT utilizes drugs like methadone in assisting patients during detoxification. These medications help prevent exacerbation of withdrawal symptoms associated with detoxification such as cold sweats, nausea, generalized weakness, restless leg syndrome, seizures, and elevated vitals (Mattick, Breen, Kimber, & Davoli, 2014; Rieckmann et al., 2015). Another discipline addressing the acceleration of SU is RT. This modality has a unique perspective in addressing prevention, relapse, and recovery using the modality of recreation (Cogswell & Negley, 2011).

**Recreation therapy.**

Recreational therapy, also known as therapeutic recreation, is a systematic process that utilizes recreation and other activity-based interventions to address the assessed needs of individuals with illnesses and/or disabling conditions, as a means to psychological and physical health, recovery, and well-being. (ATRA, 2015)

Interventions that a recreational therapist may utilize include sports, high adventure, aquatics, team building initiatives, biophilia, socials, experiential tasks, art, music, animal assisted therapy, horticulture, and tai chi (Austin, 2004). “Recreational therapists may work with a wide range of individuals requiring health services including geriatric, mental health, addictions, general medicine, physical medicine and rehabilitation, developmental disabilities and pediatric clients” (ATRA, 2015). RT is a unique discipline from other therapies, in that the sole modality is focused on recreation and leisure in treating individuals holistically (ATRA, 2015). One aim of the proposed research is to examine SU through the lens of RT and discover the benefits, if any, it may have on individuals struggling with chemical addiction.

**Recreation Therapy Treating Substance Use**

Recreation therapy has been a common discipline engaged in treating individuals struggling with addiction for decades (Rancourt, 1991; Snead et al., 2015; Van Hout, 2008). A common approach used by recreational therapists is to teach and provide outlets for intentional coping skills (Carruthers & Hood, 2002). “The primary focus of therapeutic recreation in addictions treatment should be the provision of programs that consistently and effectively increase the clients' coping skills” (Carruthers & Hood, 2002, p. 154). Intentional coping strategies may include self-control processes (Shiffman & Wills, 1985), flow (Csikszentmihalyi, 1991), relaxation (Daley & Marlatt, 1992), and social support (Moggi,

Ouimette, Moos, & Finney, 1999). Social support is a key component of the 12-step process within addiction recovery and recommendations are advised in pursuing a sponsor to help facilitate social opportunities (Alcoholics Anonymous [AA], 2011).

In addition to intentional coping strategies, educating patients on the healthiest and most productive use of their free time, known as leisure education, is another intervention utilized by recreational therapists. Many addicts in recovery programs are asked, “What did you do for fun before your drug addiction?” A common response is, “I don’t know!” Many patients have become disconnected from the leisure pursuits that gave them self-fulfillment, joy, identity, and purpose in life (Garfield, Lubman, & Yücel, 2014). In addition, anhedonia is often experienced when patients are engrossed in SU behavior. Garfield, Lubman, and Yücel (2014) identified the importance of addressing anhedonia in substance use treatment: “The common experience of anhedonia in substance-dependent populations, and its relationship to relapse, emphasizes the importance of developing therapeutic interventions that specifically target anhedonia in the treatment of all substance use disorders” (p. 36). Leisure education has the capacity to either teach or reteach individuals the inherent value of recreation and leisure and address challenges associated with anhedonia.

To this date, Cogswell & Negley (2011) authored the only study that has examined the variables of RT, SU, and aspects of motivation. These authors investigated “the effect of an autonomy-supportive TR program on motivation for treatment and perceived autonomy-supportive environment” (p. 47). The study consisted of 39 participants who were selected from an outpatient recovery program. Participants engaged in either the control group or one of three research groups for a period of four weeks. Each week, participants were involved in two separate hour-long classes. Groups focused on the following topics: relationships, relapse

prevention, problem solving, stress management, effective communication, social support, using leisure and recreation as a modality to enjoy life, and goal setting. During the course of the four-week program, participants filled out the treatment for motivation questionnaire (TMQ) that served as the pre- and post-instrument. Intentions behind the measurement were to discover the participants' motivation for treatment and perceived autonomy-support of the recreational therapist. Our intention is to review these components with HF and reveal any new insights, if any, for academics and practitioners.

Other recent studies involving RT interventions and SU have explored creative writing (Snead et al., 2015), the 12-step program (Cooke, 2013) and physical fitness (Van Hout, 2008) as viable approaches in treating SU from a RT perspective. Creative writing interventions include poetry, expressive writing, free writing, and a combination of creative writing and music. In one study conducted by Tyson & Baffour (2004), patients identified positive activities for intentional coping. Results indicated writing and listening to music were the most frequently used coping skills. Music, as suggested, allows patients to be more relaxed in a clinical setting, allowing rapport to develop more quickly and reduce potential barriers. Creative writing has been linked to improvements for SU populations including increases in emotional self-expression, self-confidence, coping, and trust. Among the various interventions associated with creative writing, the most requested by SU patients are emotionally focused essays and music as the more therapeutic core work (Meshberg-Cohen, Svikis, & McMahon, 2014).

Cooke (2013) examined the 12 steps of Alcoholics Anonymous and demonstrated how recreational therapists can assist in the recovery process by designing interventions that complement step work. An example from step 11 states, "...sought through prayer and meditation to improve our conscious contact with God as we understood Him, praying only for

knowledge of His will for us and the power to carry that out” (AA, 2011, p. 59). As suggested by Cooke (2013), interventions that may support and complement this step include teaching meditation techniques like guided imagery and deep breathing exercises. It is also suggested these individuals must find a form that coincides with their belief systems. Other RT interventions from Cooke (2013) that have the capacity to reinforce 12 step principles are leisure education, stress management training, bibliotherapy, cinematherapy, and community integration strategies.

Lastly, the study by Van Hout (2008) utilized physical activity as a means to offer alternative positive coping for adolescents struggling with SU. Introducing or reintroducing the patients to the inherent value of physical activity in attempts to aid in relapse prevention can be a great asset. Within the study, they continually reference the positive relationship between physical activity and abstinence. Some of these physical activities include competitive or team sports for adolescent males and individual or fitness classes for adolescent females. Direct benefits of incorporating physical activity with adolescents struggling with SU include increased self-efficacy, increased feelings of self-empowerment, improved problem-solving, and reduced SU engagement. Though these interventions were investigated specifically by RT researchers, there are other fields studying the ramifications and treatment of SU using interventions commonly found in RT. The following section discusses a few of these approaches.

**Supplemental recreation focused interventions treating substance use.** There have been further studies utilizing interventions commonly found within RT, which are noteworthy in providing the breadth of approaches in treating SU. Interventions such as art therapy (Holt & Kaiser, 2009), music therapy (Dingle, Gleadhill, & Baker, 2008), horticulture therapy (Detweiler et al., 2015), wilderness therapy (Harper, Russell, Cooley, & Cupples, 2007), and yoga (Reddy,

Dick, Gerber, & Mitchell, 2014) are common recreation interventions. A clarification should also be emphasized about the difference between art therapy, music therapy, and horticulture *therapy* and the *therapeutic use* of art, music, and horticulture by a recreational therapist. The major difference is the certification and licensure these disciplines hold specific to their modality. Each discipline requires specific courses to be taken in their field that eventually equate to a master's or bachelor's degree in art, music, or horticulture therapy (American Art Therapy Association [ATA], 2015; American Horticulture Therapy Association [AHTA], 2015; American Music Therapy Association [AMTA], 2015).

### **Recovery Ways**

This study intends to evaluate a drug and alcohol treatment facility in Utah to examine intrinsic motivation and holistic functioning and the role of RT in residential substance use treatment. Recovery Ways (RW) treats alcohol addiction, prescription drug abuse, drug addiction, and co-occurring disorders for adults aged 18 years and up (Recovery Ways, n.d.). This section is intended to be a review of RW and its current practices in treating SU. This review will include the mission and approach to treatment, broadly the types of programs offered, disciplines involved in SU treatment—specifically the RT role at RW, and interventions provided by the RT department in treating SU.

**Mission.** “At Recovery Ways, our mission is to provide the most cost-effective, accessible substance abuse treatment to as many people as possible. We are committed to an integrated quality of care that is comprehensive, person-centered and recovery-focused” (Recovery Ways, n.d., p.1). More specifically within the RT program, their mission is to increase patients’ IM and HF while in programming to promote more engagement while in

treatment and to continue involvement in recovery principles to enhance quality of life after discharge.

**Programming.** RW offers many different types of programming for their patients including inpatient detox, residential treatment, partial day treatment (PDT), intensive outpatient (IOP), and virtual online treatment (VOT) (Recovery Ways, n.d.). The following paragraph will discuss these types of programs.

“Frequent use of alcohol and drugs can result in physical dependence and initial withdrawal can be physically distressing, painful and even dangerous” (Recovery Ways, n.d., p.1). RW thoroughly assesses each patient upon intake and plans an individualized medical detox (Recovery Ways, n.d.). This is the first step to recovery, a safe withdrawal of substances in a clinical setting where patients are evaluated and cared for 24 hours a day. The next phase of recovery is residential treatment. Here the patient is no longer experiencing withdrawal symptoms, but is still in need of 24-hour monitoring and support. Patients are more alert and active and are ready to start doing more intensive therapy, which includes a minimum of eight hours of therapy programming. PDT is a step down program where patients participate in meetings during the day and then return home in the evening to practice recovery strategies. IOP is yet another step in progression that is offered to those who, with the clinical team’s approval, feel comfortable returning to work. The patient then participates in recovery programming in the evening to better facilitate a healthy transition. The last option of recovery programming offered at RW is VOT. VOT is the ability to connect with group- and individual-treatment sessions online. Some patients live in remote areas where it may be difficult to attend meetings in person or may have a particularly busy day and still want/need to engage in treatment. RW offers many stages of programming to meet the needs of individual patients who are not on the same

recommended level of treatment. Just as there are many types of programming available, there are many different types of disciplines engaged in treatment.

**Disciplines.** RW treatment teams embrace an interdisciplinary approach by involving addiction psychiatrists, physicians, social workers, life skill therapists, recreational therapists, occupational therapists, and nurses in addressing addiction. This is especially beneficial for patients as each discipline provides a unique skillset aiding in the recovery process. Treatment teams meet at least once a week to discuss the progression of each patient in rehabilitation. Each discipline provides feedback from their area of expertise in continuing the ongoing care for each patient to be successful in recovery. Contributions to the treatment plan may include addressing relapse strategies, increasing intrinsic motivation, decreasing rumination of SU, leisure education, community integration, and vocation challenges.

**Recreation therapy and interventions at Recovery Ways.** “Sober recreation therapy provides a vehicle for patients to discover and recreate themselves while practicing skills in a safe supportive environment” (Recovery Ways, n.d., p. 2). RT at RW addresses patients holistically, as previously defined, by assessing, planning, utilizing effective interventions, and evaluating patient success. RW believes RT plays a vital role in recovery by educating patients on alternative coping skills to increase quality of life. RT at RW focuses on leisure education, building healthy relationships, creating trust in oneself and others, building competence, reliability, and independence, enjoying sober fun and experiencing life, and increasing one’s self-worth and motivation. Common interventions used at RW are as follows: snowshoeing, skiing, volleyball, tai chi, hiking, rock climbing, repelling, kayaking, alpine slides, ziplining, ropes course, canoeing, river rafting, wake boarding, golf, broomball, bowling, billiards, aquarium, local tours, biking, fly fishing, indoor tennis, miniature golf, go-carts, laser tag,



campfires, disc golf, karaoke, archery, speed skating, library, bobsledding, snow tubing, cooking, bocce, croquet, sled hockey, flag football, and horseback riding. RW provides patients with these opportunities through 12 hours of RT a week.

The main emphasis at RW is sober leisure fun, which accounts for eight hours of RT a week, delivered in two four-hour sessions. Many patients report having participated in leisure activities prior to treatment, but under the influence of alcohol or drugs. These sessions are designed to expose patients to the inherent value of recreation and leisure. One two-hour weekly session provides an experiential therapy task. At RW, experiential therapy is often a problem-solving task or initiative activity designed to bring about group cohesion, increase self-efficacy, or develop leadership skills. The final two-hour weekly session provides a service opportunity. Service projects include volunteering at soup kitchens, cleaning parks, or shoveling snow for the elderly.

These interventions are utilized through the Assessment, Planning, Intervention, and Evaluation (APIE) process, which the certified therapeutic recreation specialists (CTRS) use (Austin, 2004). Upon admission, each patient is assessed through psychometric testing, interviews, and observations. These in turn establish patients' strengths, barriers, goals, and objectives for the program. The IMI and the HF are also part of the assessment process. Planning is accomplished through selecting the appropriate leisure/recreation modality that is best suited for the patient in reaching his or her program goals and objectives. A typical goal at RW would be to expose the patient to at least three leisure coping skills per week. Planning also incorporates a model or theory that best applies to the program outcomes. An example of an outcome for all patients at RW is to increase their intrinsic motivation and HF, ideally selecting

interventions that provide these opportunities (e.g., rock climbing). Implementation occurs once the plan is designed and set in motion.

Then comes evaluation. Simply put, did the CTRS accomplish his or her goals with the patient? This stage should help identify areas in which the CTRSs are proficient and areas in which they may need improvement. Documentation and discharge are the last components of the RT process. A CTRS documents the daily progression of each patient for whom he or she is responsible. This documentation includes the patient's strengths and weaknesses and reflects the progress of their treatment goal. Discharge includes assessing the patient again, collecting post data utilizing the IMI and the HF assessment. In addition, four qualitative questions are asked to obtain a more rounded experience of the patient in treatment.

The critical role of the CTRS in this process is helping the patient see the connection to recovery. Many of these leisure activities are therapeutic by nature, but to stop there would be doing a disservice to those being treated. CTRSs employ a facilitation technique called processing. Processing is designed to facilitate learning, awareness, and change before, during, and after a RT session (Hutchinson & Dattilo, 2001). Priest & Gass (1997) suggest people do not change, learn, or grow without reflection on their experiences. They continue by highlighting that processing is an instrument specifically utilized to foster reflection and promote change. Processing serves as a catalyst in the therapeutic change process. Examples may include the CTRS facilitating a discussion on healthy coping skills, asking questions about a simulated task and how it applies to an individual's recovery, or the use of symbols or metaphors to better illustrate a principle of recovery.

Recovery Ways' main approach in addressing SU, specifically the modality of RT, is through the frameworks of SDT and IM. It is their goal to enhance IM to help patients become

more engaged in treatment and continue leading a sober lifestyle after discharge from RW. The following section will elaborate more on these two concepts.

### **Self-Determination Theory**

Self-Determination Theory (SDT) is a study of the different levels of human motivation (Ryan & Deci, 2000). It is a theory implying humans are naturally energetic, progressing, and growing entities continually striving toward a more sophisticated and cohesive sense of self (Deci & Ryan, 2002). Researchers studying SDT have investigated environmental contributors and non-contributors that either assist or undermine an individual's self-motivation, social functioning, and personal wellbeing (Ryan & Deci, 2000). Through empirical research, Deci and Ryan (2002) have emphasized three innate psychological needs: competence, relatedness, and autonomy. When fulfilled, these needs serve as a catalyst to augment self-motivation and mental health. Furthermore, SDT's Basic Needs Theory is understood accordingly: competence is the need to be capable in dealing with the environment; relatedness is the development of close, intimate relationships and a yearning to connect with others; and autonomy refers to living authentically and feeling volitional about one's actions (Deci & Ryan, 2002).

**Levels of motivation.** In 2000, Ryan and Deci established the self-determination continuum to visually display a working model of various motivation types. At the far left of the continuum is (a) amotivation, which means lacking the intention to act or altogether not acting. Here, individuals perceive a loss of control, incompetence, or do not value the activity. In the middle of the diagram is (b) extrinsic motivation, comprising four sublevels with external regulation being the most extrinsic. Individuals follow through with activities due to rewards, punishments, and compliance. Introjected regulation is still somewhat extrinsic, but individuals experience self-control and internal rewards. Identified regulation is somewhat intrinsic and

experience personal value. Lastly within extrinsic motivation is integrated regulation, which is the most intrinsic of the four and individuals experience congruence and synthesis with one's self. Concluding the model is intrinsic motivation where individuals experience inherent satisfaction and purely engage in the activity for the activity itself.

### **Aspects of Intrinsic Motivation**

Intrinsic motivation is what Recovery Ways is striving for with their patients—to have them engage in recovery for the sake of recovery itself. Stating again the purpose of the RT program at RW, their mission is to increase patients' IM while in programming to promote more engagement while in treatment and to continue involvement in recovery principles to enhance quality of life after discharge. The following paragraph will discuss how the IMI was developed and its components.

In 1982, Dr. Ryan developed an instrument to better assess an individual's intrinsic motivation. The Intrinsic Motivation Inventory (IMI) was originally composed of 27 questions that covered four subscales: (a) interest/enjoyment, (b) perceived competence, (c) effort, and (d) pressure/tension (Ryan, 1982). Through the years, other subscales have been added, such as value/usefulness, perceived choice, and relatedness (SDT, 2016). RW modified the IMI to concentrate on interest/enjoyment, perceived competence, and pressure/tension.

Interest/enjoyment is the central core measurement for intrinsic motivation and, as such, this subscale usually has more questions posed than other subscales (SDT, 2016). Perceived competence is posited to be a positive predictor of both self-report and behavioral measures of IM, while pressure/tension is posited to be a negative indicator of intrinsic motivation (SDT, 2016). Better understanding the aspects of IM potentially allows researchers and practitioners to educate and treat adults suffering with SU related issues.

### **Self-Determination Theory and Substance Use**

While there are many approaches in treating and preventing substance use disorders, motivation is a key variable in treating these individuals and utilizing SDT provides a useful frame work for this study (West, 2001). Researchers within the last ten years studying SDT have investigated numerous health behaviors such as tobacco abstinence, physical activity, weight loss, medication compliance, diabetes management, and cholesterol reduction (Fortier, Williams, Sweet, & Patrick, 2009). In a study conducted by Ryan, Plant and O'Malley (1995), individuals struggling with alcohol use were researched to bring to light their motivations in seeking treatment and recovery. They discovered in their analysis a combination of external and internal motivations concerning patients' drive for receiving substance use treatment. To this date, there are limited studies researching these occurrences. Sharma and Smith (2011) stated "while the volume of literature involving the application of self-determination theory to tobacco cessation and physical activity is substantial, studies evaluating the use of SDT with alcohol and drug abuse education exist to a much lesser extent" (p. 5). The following paragraph will review three studies investigating the relationship of SDT and SU.

Ryan, Plant and O'Malley (1995) studied alcoholics entering outpatient services and their initial motivations for treatment. Their analysis discovered patients with higher intrinsic motivation were more inclined to be engaged in recovery programming and had a higher rate of retention.

Wild, Cunningham & Ryan (2006) examined external, introjected, and identified motivations for pursuing substance abuse treatment. Results indicated that if individuals were court ordered, pressured, or coerced into treatment, it did not affect patient engagement at the beginning of recovery programming.

Neighbors, Walker, and Larimer (2003) looked at the differences in self-determination among college students and hypothesized that those students who had lower levels of volition would be more susceptible to alcohol related problems. The study concluded students who believe alcohol has the potential to bring about positive effects are more likely to participate in binge drinking and other unsafe alcohol practices. With the limitations of current research investigating SDT and SU, this study hopes to contribute to the lacking body of knowledge by giving more depth and understanding to this particular approach to treating SU.

### **Holistic Functioning**

Holistic functioning in this review is comprised of four domains: (a) physical, (b) social, (c) leisure, and (d) daily living functioning. Each four of these areas have contributed to leading successful recovery lifestyles (Dehn, 1996).

**Physical functioning.** Physical exercise interventions have long been established with disorders such as schizophrenia, depression, and anxiety. Consistent physical activity has also been attributed to reducing muscle tension, stress, sleep disruptions, and feelings of depression and anxiety (Biddle, Mutrie, & Gorely, 2015; Cooney et al., 2013; Gorczynski & Faulkner, 2010; Wipfli, Rethorst, & Landers, 2008). Similar occurrences are associated with SU and physical activity and may assist those struggling with SU (Cummings, Gordon, & Marlatt, 1980). In a recent systematic review of alcohol use and physical functioning by Giesen, Deimel & Bloch (2015), it was concluded current literature cannot establish evidence based recommendations, though they suggested that numerous potential benefits may be inherent: (a) Physical activity is feasible and safe and (b) maximum rate of oxygen consumption, basal heart rate, physical activity level, and strength all improve (Giesen et al., 2015). In a pre-clinical study done by Smith & Lynch (2011), they surmised,

The ability of exercise to serve as an alternative, non-drug reinforcer, and decrease comorbid risk factors associated with substance use has been demonstrated across multiple assays. Enough is now known to begin the process of designing and implementing exercise-based interventions in clinical and at-risk populations. (p. 82)

**Social functioning.** Individuals struggling with SU have recounted with clinicians increases in anhedonia in their recreational pursuits, decreases in social engagement with family and friends, decreases in IM in performing an array of tasks, poor social skills and involvement in social spheres, and declines in cognitive functioning (Can & Tanriverdi, 2015). Forfeiture of social functioning diminishes the quality of life of individuals struggling with addiction and exacerbates problems in family units, social contexts, and leisure and occupational activities (Addington & Addington, 1999). It is recommended that recovery programs and initiatives include social support strategies connected to a community dimension, these have the potential to create relationships and social networks that provide support and friendship (SAMHSA, 2014).

**Leisure functioning.** Leisure functioning is a vital domain practitioners assess to determine a client's barriers and restrictions related to positive leisure and recreation pursuits (Dehn, 1996). A study conducted by Faulkner (1991) discussed the linkage of dysfunctional leisure and addiction as follows:

Addiction is a leisure disease, and dysfunctional leisure is a symptom of addiction. Naturally, there are many other factors involved in the creation of an addictive personality. But the linkage between leisure malfunction and addiction is astounding. Most people take their first drink, fix, or pill during leisure hours and as a part of leisure functioning. In that respect, addiction becomes a function of leisure and "dis-ease" of leisure. Once embarked on the addiction trail, people frequently abandon forms of

leisure pursuits which do not permit alcohol and/or drug use. At this stage, dysfunctional leisure becomes a symptom of addiction. (p. 6)

It is here clinicians, especially recreational therapists, have the opportunity of utilizing wholesome recreation and leisure to enhance and increase the quality of life in their clients (ATRA, 2015).

**Daily living functioning.** SU has the capacity to severely inhibit one's daily living functioning (DLF). Many drug recovery facilities attempt to connect patients to the frequency and duration of their substance usage and how it has directly impacted their DLF. Those who struggle with SU report having negative effects associated with career achievement, job performance, maintaining employment, dropping out of school, and financial pressures (NIDA, 2015). Dehn's (1995) assessment includes other aspects of DLF including nutrition, maintenance of hygiene, participating in household chores, and feeling safe at home. Recreational therapists have a unique vantage point in assessing individuals who engage in SU holistically, allowing the clinician to view the whole person and not be limited solely to leisure functioning (ATRA, 2015). This embraces a more comprehensive approach in recovery.

Sharma and Smith (2011) called for "additional studies about motivational factors that initiate both unsafe substance abuse behaviors and the desire to receive treatment can aid health educators in prevention strategies" (p. 5). This study is being conducted to answer that call, to inquire about current motivational practices of individuals engaging in substance use and provide supplementary literature for the field. As previously discussed, Cogswell and Negley (2011) utilized a therapeutic recreation focus, investigating motivation and substance use; however, they concluded their analysis produced non-significant statistical results. It is the intent of this study



to investigate the variables of therapeutic recreation, substance use, and intrinsic motivation with holistic functioning to see if any new insights can be gained for academics or practitioners.

To date, no known studies have examined changes in IM and HF for adults engaged in SU participating in RT services. In addition, over the last ten years there have only been a handful of research articles even addressing SU from an RT perspective (Cooke, 2013; Snead et al., 2015; Van Hout, 2008). Furthermore, the NCTRC and ATRA have identified behavioral health/acute hospitals, where most substance abuse clinics are found, to be the number one population served by recreation therapists (NCTRC, 2015; ATRA, 2015). With the majority of recreation therapists working in this field, the need for current research is substantial. The scarcity of studies also presents barriers for implementing evidence based programming for RT practitioners addressing SU.

Again the purpose of this study is to observe changes in intrinsic motivation and holistic functioning as a result of therapeutic recreation interventions utilized at a substance use treatment facility for adults engaged in substance use. The following chapter will discuss the methodology and instruments planned to further investigate this phenomenon.

### **Methods**

The problem of this study is to investigate the differences between pre- and post-tests scores on intrinsic motivation (IM) and holistic functioning (HF) for adults in a drug recovery treatment center. A look at various control variables will be evaluated to see which ones, if any, have an impact on intrinsic motivation and holistic functioning (e.g., age, gender, length of stay). A content analysis will also be conducted on open ended questions asked during discharge. This section will discuss the following areas: (a) sample, (b) data collection procedures, (c) instrumentation, (d) demographics, and (e) analysis.

### **Sample**

The sample for this evaluation study will be a census of 200 adults from a residential treatment center in Utah. This center treats substance use disorders for males and females. The average age enrolled in the facility is 33 years old, with the youngest being 18 years old and the oldest being 73 years old. The population is 60% male and 40% female. The various ethnicities reported at Recovery Ways include Caucasian (91%), African American (3%), Native American (2%), Hispanic/Latino (1%), Asian (0.4%), and Multi-Ethnic (0.4%).

Sociodemographic questions are included to better understand the sample we have organized and to provide possible controlling factors. These elements will include variables only relevant to the proposed study that include (a) age of the patient, (b) gender of the patient, (c) length of stay, (d) number of refusals in programming, and (e) the facility where treatment was received. Currently, Recovery Ways has three treatment sites.

### **Data Collection Procedures**

Data utilized for this evaluation study is secondary data collected from an organization called Recovery Ways. Upon admission to the program, each patient was given a pre-test: (a) an

Intrinsic Motivation Inventory (IMI), (b) Holistic Functioning Questionnaire, and (c) a Leisure Inventory Questionnaire. At the close of treatment, the same three instruments were administered the day of discharge with the addition of four qualitative questions. A consent form to participate in RT was given upon admission when they enrolled in RW. A recreational therapist assisted in the process of initiating the pre- and post-test for each patient in the program. Furthermore, a randomly assigned case number was applied to each patient's questionnaire that was identical. This is intended to match pre- and post-data together, but also to provide anonymity to participants. No personal identifying questions were asked, such as a request for social security numbers. As the questionnaires were completed for both pre- and post-tests, the information was converted and stored in a safe database that was password protected at RW. Once the target of 200 patients were discharged from the program, this data was sent to Brigham Young University (BYU). Only committee members Neil Lundberg, Ramon Zabriskie, Eva Witesman, and graduate student, Damien Cavanaugh, will have access to ensure confidentiality. Once all the questionnaires are gathered, cleaned, imputed, analyzed, and reported, all data will then be deleted and shredded.

### **Instrumentation**

There were four instruments utilized in the course of this evaluation study. These instruments were selected by RW and reflect on which target areas they are concentrating to promote and enhance recovery lifestyles through the modality of RT. As previously mentioned in the limitations, this evaluation study cannot control for other therapies patients are provided. These instruments were selected intentionally for the RT program at RW.

**Intrinsic motivation inventory.** The IMI utilized at RW is a modification of the original instrument. The original IMI included 27 questions, covering four subscales:

(a) interest/enjoyment, (b) perceived competence, (c) effort, and (d) pressure/tension (Ryan, 1982).

Internal consistency for the four subscales was generally quite adequate with the alpha coefficient for each of the following scales shown in parentheses: interest-enjoyment ( $\alpha = .78$ ); perceived competence ( $\alpha = .80$ ), effort ( $\alpha = .84$ ), and pressure-tension ( $\alpha = .68$ ). (McAuley, Duncan, & Tammen, 1989, p. 51)

As recent as 2012, the IMI was utilized by researchers Van De Pol and Kavussanu (2012) in investigating achievement motivation across training and competition in individual and team sports. RW selected three subscales to focus on: (a) interest/enjoyment, (b) perceived competence, and (c) pressure/tension. Three questions were selected from these topics to create a modified version of the IMI. RW chose these specific subscales and particular questions because this is what their RT program addresses. Their groups and sessions are designed to increase confidence and interest and decrease pressure to develop or enhance their patients' intrinsic motivation. This corresponds to their mission of having more intrinsically engaged patients in treatment who continue leading sober lifestyles after discharge. The IMI prompt asks patients to rate their engagement in recreation and leisure activities one month previous to admission for treatment. It is composed of nine questions based on a 7-point Likert scale, 1 representing not at all true and 7 representing very true. Higher scores, except for the reverse coded questions 1, 4, and 5, indicate higher levels of IM.

The psychometric properties for this instrument will follow the recommendations from previous research, namely from Monteiro et al. (2015). They used two methods in analyzing the IMI:

A total score approach using a composite score obtained from individual facets or the facets score approach which analyses each facet of the construct separately. The authors maintain that both approaches miss some information, as a composite score highlights the shared effects but does not separate the unique effects from the shared variance.

Analyzing the facets separately taps into their unique contributions, but the specific effects of the facets are often entangled with the effects of the shared general construct (Monteiro et al., 2015, p. 436).

For the purpose of this evaluation study, we will be utilizing a total score approach and a facet score approach to obtain a more rounded representation from the data.

**Holistic functioning assessment.** The second instrument employed by RW is a modified Holistic Functioning Assessment. The original assessment is broken into six domains: (a) Leisure, (b) Physical, (c) Daily Living, (d) Cognitive, (e) Psychological, and (f) Social Functioning (Dehn, 1995). In an effort to be efficient, RW selected only four of these domains due to the volume of caseloads: (a) Leisure, (b) Physical, (c) Daily Living, and (d) Social Functioning. All four domains contain the original seven questions. Each domain consists of seven questions that utilize a 5-point Likert scale to respond, 1 representing almost never and 5 representing almost always. Higher scores, except for the reverse coded questions which are questions 4 and 7 in each domain, indicate higher levels of functioning within the given domain. The total score indicates an overall increase or decrease in HF.

As for the psychometric properties of this instrument, there is currently no research utilizing the Holistic Functioning Assessment, nor is there any information reporting the reliability and the validity of the instrument. For the purpose of this evaluation study, this instrument will mirror the IMI psychometric properties. All four domains of the Holistic

Functioning Assessment will be analyzed using a total score approach and a facet score approach.

**Leisure inventory.** The Leisure Inventory assessment identifies the patient's recreation and leisure pursuits. Categories within the assessment include: (a) team sports, (b) individual sports, (c) dance, (d) arts and crafts, (e) music, (f) table games, (g) individual sedentary activities, (h) outdoor activities, (i) volunteer service, (j) literacy and continuing education, and (k) community activities. These items are collected to determine the patient's interest and possible opportunity of introducing or teaching new coping skills. It also describes the population and leisure patterns prior to treatment. A content analysis will be performed to capture common trends of patient recreation use.

**Qualitative questions.** Four open-ended questions are provided in order to gain more understanding of how the RT program operates from the perspective of the client. The four questions include: (a) How has your involvement in recreation activities in the recreation therapy groups influenced your recovery process? (b) Did you experience pleasure, enjoyment, or fun in the activities and why do you think this was the case for you? (c) Did the recreation activities help you change how you perceive yourself and your abilities? Please explain. (d) Did you feel tension, nervous, or anxious while participating in recreation therapy activities? If you did, why do you think this was the case? If not, why do you think you did not? These questions are specifically designed to give feedback to the modality and treatment service of RT.

A content analysis will be conducted to determine various concepts, codes, and categories among RW patients at the various sites (Hsieh & Shannon, 2005). The lead researcher will read all responses from the four open-ended questions repeatedly to achieve immersion and understanding of the material (Tesch, 1990). Responses will then be read word by word. Exact

words will be highlighted that represent concepts or codes (Hsieh & Shannon, 2005). As the lead researcher advances through the material, more codes will be created that can be grouped into categories and subcategories representative of main themes at RW (Hsieh & Shannon, 2005). This is implemented with the hope these themes will give additional perspectives of how SU treatment occurs at RW.

### **Analysis**

This study is investigating data previously gathered by RW and will be transferred to the researcher through an encrypted email to ensure privacy. Prior to any data analysis, the results will be reviewed and cleaned for missing responses, if any, and any outliers that are inconsistent with the sample parameters and will be deleted if necessary. Data will also be reviewed to ensure there is no identifying information that could potentially violate a patient's anonymity within the program. Questions 9, 11, and 13 (as an example) within the IMI will be reverse coded and entered according to coding instructions. In addition, descriptive statistics will be utilized to understand the characteristics of our sample (e.g., age, gender). For the inferential statistics, there will be two types of tests utilized for this study: (a) a paired T-Test and (b) linear regression. R, a statistical software program, will be used to run all the testing. Total pre- and post-test scores will be tabulated for the IMI and HF and a paired T-Test will be run. Pretest scores for the IMI and HF will be compared to post-test scores to examine differences between both groups. Furthermore, since we are also utilizing a multivariate approach, variables we intend to use as controls for the study are: (a) length of stay in treatment, (b) the site where treatment occurred, (c) gender, (d) age, and (e) number of refusals to participate in treatment. Lastly, once the analysis is complete and interpreted, the results will be published in a peer-reviewed academic journal.

### References

- Addington, J., & Addington, D. (1999). Neurocognitive and social functioning in schizophrenia. *Schizophrenia Bulletin*, 25(1), 173-182.
- Alcoholics Anonymous. (2001). *Alcoholics Anonymous*, 4th Edition. New York, NY: A.A. World Services.
- American Art Therapy Association (2015). Retrieved from <https://www.arttherapy.org>
- American Horticulture Therapy Association (2015). Retrieved from <https://www.ahta.org>
- American Music Therapy Association (2015). Retrieved from <https://www.musictherapy.org>
- American Psychiatric Association (2013). *Diagnostic Statistical Manual 5*. Retrieved from <http://www.dsm5.org>
- American Therapeutic Recreation Association (2015). Retrieved from <https://www.atra-online.com>
- Austin, D. (2004). *Therapeutic recreation: processes and techniques*. 5th ed. Champaign, Ill.: Sagamore Publishing.
- Beck, J. S. (2011). *Cognitive behavior therapy: Basics and beyond*., 2nd ed. New York, NY: Guilford Press.
- Berg, C., & Neulinger, J. (1976). Alcoholics' perception of leisure. *Journal of Studies on Alcohol*, 37(11), 1625-1632.
- Biddle, S. H., Mutrie, N., & Gorely, T. (2015). *Psychology of physical activity: Determinants, well-being and interventions*., 3rd ed. New York, NY, US: Routledge/Taylor & Francis Group.
- Can, G., & Tanrıverdi, D. (2015). Social functioning and internalized stigma in individuals diagnosed with substance use disorder. *Archives Of Psychiatric Nursing*, 29(6), 441-446.



- Carruthers, C. P., & Hood, C. D. (2002). Coping skills programs for individuals with alcoholism. *Therapeutic Recreation Journal*, 36(2), 154.
- Cogswell, J., & Negley, S. K. (2011). The effect of autonomy-supportive therapeutic recreation programming on integrated motivation for treatment among persons who abuse substances. *Therapeutic Recreation Journal*, 45(1), 47.
- Cooke, C. (2013). Therapeutic recreation and the twelve steps. *American Journal of Recreation Therapy*, 17-24.
- Cooney, G. M., Dwan, K., Greig, C. A., Lawlor, D. A., Rimer, J., Waugh, F. R., & Mead, G. E. (2013). Exercise for depression. *Cochrane Database Syst Rev*, 9(9).
- Csikszentmihalyi, M., (1991). *Flow: The psychology of optimal experience* (Vol. 41). New York, NY: Harper Perennial.
- Cummings, C., Gordon, J. R., & Marlatt, G. A. (1980). Relapse: Prevention and prediction. *The addictive behaviors*, 291-321.
- Daley, D. C., & Marlatt, G. A. (1992). Relapse prevention: Cognitive and behavioral interventions. *Substance abuse: A comprehensive textbook*. Baltimore: Williams & Wilkins, 533-542.
- Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. Rochester, NY: University of Rochester Press.
- Dehn, D. (1995). *Leisure step up*. Enumclaw, WA: Idyll Arbor.
- Dehn, D. (1996). Leisure step up: An innovative approach in offering therapeutic recreation services. *Parks & Recreation*, 31, 64.
- Detweiler, M. B., Self, J. A., Lane, S., Spencer, L., Lutgens, B., Kim, D. Y., & Lehmann, L. (2015). Horticultural therapy: A pilot study on modulating cortisol levels and indices of

- substance craving, posttraumatic stress disorder, depression, and quality of life in veterans. *Alternative therapies in health & medicine*, 21(4).
- Dingle, G. A., Gleadhill, L., & Baker, F. A. (2008). Can music therapy engage patients in group cognitive behaviour therapy for substance abuse treatment? *Drug and Alcohol Review*, 27(2), 190-196.
- Faulkner, R. (1991). *Therapeutic recreation protocol for treatment of substance addictions*. State College, Pa.; Venture Publishing.
- Fortier, M.S., Williams, G.C., Sweet, S.N. & Patrick, H. (2009). Self-determination theory: Process models for health behavior change. In R.J. DiClemente, R.A. Crosby, & M.C.Kegler (Eds.), *Emerging theories in health promotion practice and research* (2nd ed.). San Francisco, CA: Jossey-Bass.
- Garfield, J. B., Lubman, D. I., & Yücel, M. (2014). Anhedonia in substance use disorders: A systematic review of its nature, course and clinical correlates. *Australian and New Zealand Journal of Psychiatry*, 48(1), 36-51.
- Giesen, E. S., Deimel, H., & Bloch, W. (2015). Clinical exercise interventions in alcohol use disorders: A systematic review. *Journal of substance abuse treatment*, 52, 1-9.
- Gorczynski, P., & Faulkner, G. (2010). Exercise therapy for schizophrenia. *Cochrane Database Syst Rev*, 5.
- Harper, N. J., Russell, K. C., Cooley, R., & Cupples, J. (2007, June). Catherine Freer Wilderness Therapy Expeditions: An exploratory case study of adolescent wilderness therapy, family functioning, and the maintenance of change. In *Child and Youth Care Forum* (Vol. 36, No. 2-3, pp. 111-129). Kluwer Academic Publishers-Plenum Publishers.

- Haug, N. A., Shopshire, M., Tajima, B., Gruber, V., & Guydish, J. (2008). Adoption of evidence-based practices among substance abuse treatment providers. *Journal of Drug Education, 38*(2), 181-192.
- Hitzhusen, G. (1977). Recreation and leisure counseling for adult psychiatric and alcoholic patients. *Leisure counseling: An aspect of leisure education*. Springfield, IL: Charles C. Thomas, 225-235.
- Holt, E., & Kaiser, D. H. (2009). The first step series: Art therapy for early substance abuse treatment. *The arts in psychotherapy, 36*(4), 245-250.
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative health research, 15*(9), 1277-1288.
- Hutchinson, S., & Dattilo, J. (2001). Processing: Possibilities for therapeutic recreation. *Therapeutic Recreation Journal, 35*(1), 43.
- Iso-Ahola, S. E., & Weissinger, E. (1990). Perceptions of boredom in leisure: Conceptualization reliability, and validity of the leisure boredom Scale. *Journal of Leisure Research, 22*, 1-17.
- Kay, T., & Jackson, G. (1991). Leisure despite constraint: The impact of leisure constraints on leisure participation. *Journal of Leisure Research, 23*(4), 301-313.
- Kleiber, D.A. (1999). *Leisure experience and human development: A dialectical interpretation*. New York: Basic Books
- Mattick, R. P., Breen, C., Kimber, J., & Davoli, M. (2014). Buprenorphine maintenance versus placebo or methadone maintenance for opioid dependence. *Cochrane Database Syst Rev, 2*(2).

- McAuley, E., Duncan, T., & Tammen, V. V. (1989). Psychometric properties of the intrinsic motivation inventory in a competitive sport setting: A confirmatory factor analysis. *Research quarterly for exercise and sport*, 60(1), 48-58.
- Meshberg-Cohen, S., Svikis, D., & McMahon, T. J. (2014). Expressive writing as a therapeutic process for drug-dependent women. *Substance Abuse*, 35(1), 80-88.
- Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: Helping people change*. New York, NY: Guilford Press.
- Moggi, F., Ouimette, P. C., Moos, R. H., & Finney, J. W. (1999). Dual diagnosis patients in substance abuse treatment: Relationship of general coping and substance-specific coping to 1-year outcomes. *Addiction*, 94(12), 1805-1816.
- Monteiro, V., Mata, L., & Peixoto, F. (2015). Intrinsic motivation inventory: Psychometric properties in the context of first language and mathematics learning. *Psicologia: Reflexão e Crítica*, 28(3), 434-443.
- National Council for Therapeutic Recreation Certification (2015). Retrieved from <https://www.nctrc.org>
- National Institute on Drug Abuse (2015). Retrieved from <https://www.drugabuse.gov>
- Neighbors, C., Walker, D. D., & Larimer, M. E. (2003). Expectancies and evaluations of alcohol effects among college students: Self-determination as a moderator. *Journal of Studies on Alcohol*, 64(2), 292-300.
- Priest, S., & Gass, M. (1997). *Effective leadership in adventure programming*. Champaign, Ill.; Human Kinetics.

Rancourt, A. M. (1991). An exploration of the relationships among substance abuse, recreation, and leisure for women who abuse substances. *Therapeutic Recreation Journal*, 25(3), 9-18.

Recovery Ways, (n.d.). Retrieved from <http://www.recoveryways.com/>

Reddy, S., Dick, A. M., Gerber, M. R., & Mitchell, K. (2014). The effect of a yoga intervention on alcohol and drug abuse risk in veteran and civilian women with posttraumatic stress disorder. *The Journal of Alternative and Complementary Medicine*, 20(10), 750-756.

Rieckmann, T., Abraham, A., Zwick, J., Rasplica, C., & McCarty, D. (2015). A longitudinal study of state strategies and policies to accelerate evidence-based practices in the context of systems transformation. *Health Services Research*.

Ryan, R. M. (1982). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. *Journal of personality and social psychology*, 43(3), 450.

Ryan, R. M., Plant, R. W., & O'Malley, S. (1995). Initial motivations for alcohol treatment: Relations with patient characteristics, treatment involvement, and dropout. *Addictive Behaviors*, 20(3), 279-297.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68.

Self-Determination Theory, (2016). Retrieved from <http://www.selfdeterminationtheory.org/intrinsic-motivation-inventory/>

Sharma, M., & Smith, L. (2011). Self-determination theory and potential applications to alcohol and drug abuse behaviors. *Journal of Alcohol and Drug Education*, 55(2), 3-7.

Shiffman, S., & Wills, T. A. (Eds.). (1985). *Coping and substance abuse*. Cambridge, MA: Academic Press.

- Smith, M. A., & Lynch, W. J. (2011). Exercise as a potential treatment for drug abuse: evidence from preclinical studies. *Frontiers in Psychiatry, 2*.
- Snead, B., Pakstis, D., Evans, B., & Nelson, R. (2015). The use of creative writing interventions in substance abuse treatment. *Therapeutic Recreation Journal, 49*(2), 179.
- Stolberg, V. B. (2006). A review of perspectives on alcohol and alcoholism in the history of American health and medicine. *Journal of Ethnicity in Substance Abuse, 5*(4), 39-106.
- Substance Abuse and Mental Health Services Administration (2014). Retrieved from <http://www.samhsa.gov>
- Tesch, R. (1990). *Qualitative analysis: Analysis types and software tools*. London, UK: Falmer.
- Tyson, E. H., & Baffour, T. D. (2004). Arts-based strengths: a solution-focused intervention with adolescents in an acute-care psychiatric setting. *The arts in psychotherapy, 31*(4), 213-227.
- Van De Pol, P., & Kavussanu, M. (2012). Achievement motivation across training and competition in individual and team sports. *Sport, Exercise, and Performance Psychology, 1*(2), 91.
- Van Hout, M. (2008). Perception of social context and activity following participation in a physical fitness intervention during residential adolescent addiction treatment. *American Journal of Recreation Therapy, 27-43*.
- Warner, M., Chen, L. H., Makuc, D. M., Anderson, R. N., & Miniño, A. M. (2011). Drug poisoning deaths in the United States, 1980-2008. *NCHS Data Brief, (81)*, 1-8.
- Warner, M., Hedegaard, H., & Chen, L. H. (2014). Trends in drug-poisoning deaths involving opioid analgesics and heroin: United States, 1999–2012. *NCHS Health E-Stat*.
- West, R. (2001). Theories of addiction. *Addiction, 96*(1), 3-13.

- White, W. L. (1998). *Slaying the dragon: The history of addiction treatment and recovery in America*. Bloomington, IL: Chestnut Health Systems/Lighthouse Institute.
- Wild, T. C., Cunningham, J. A., & Ryan, R. M. (2006). Social pressure, coercion, and client engagement at treatment entry: A self-determination theory perspective. *Addictive behaviors, 31*(10), 1858-1872.
- Wipfli, B. M., Rethorst, C. D., & Landers, D. M. (2008). The anxiolytic effects of exercise: a meta-analysis of randomized trials and dose-response analysis. *Journal of Sport & Exercise Psychology, (30)*, 392-410.

## Appendix B

### Recovery Ways Consent Form



### Inpatient Activity Risk and Waiver Form

I, \_\_\_\_\_ the undersigned, understand that Recovery Ways provides treatment through a variety of modalities in relation to my treatment. Activities such as initiatives, sports and recreation, physical activities/groups, yoga, gym, 12 step meetings, etc. are provided to assist and support my treatment goals. By choosing to participate in activities initiatives, sports, recreation and physical activities/groups, gym, yoga, and 12 step meetings while at Recovery Ways, I knowingly and voluntarily:

- acknowledge and understand that my participation in all the above stated activities is entirely voluntary;
- acknowledge that Recovery Ways, its employees, trustees, officers and agents do not have any legal responsibility in connection with the above stated activities nor for any problems, which might occur to or from these activities or during the entire period of the activity;
- acknowledge that any Recovery Ways personnel or agents attending this function are not medically trained beyond, CPR and first aid, to care for any physical or medical problems of individuals participating in this activity;
- represent that I have adequate health and hospitalization insurance for any injuries that I may receive as a result of attending this activity, and that I am responsible to cover any costs associated with these injuries;
- acknowledge that there are risks and hazards which may arise from participation in the above stated activities and I acknowledge that my participation in this activity may result in injury, loss of life, and/or loss of property;
- agree to follow all the safety procedures and instructions of Recovery Ways staff (*e.g.*, appropriate dress, proper use of equipment, etc.)
- acknowledge and understand the risks involved when specifically participating in softball and volleyball;



On behalf of myself and my heirs and assigns, I knowingly and voluntarily assume all risks associated with this activity and release Recovery Ways, its trustees, officers, employees and agents from any and all responsibility or liability for personal injury, death or property damage sustained by me during or because of my participation in this activity. *I UNDERSTAND AND AGREE THAT BY SIGNING THIS FORM I WILL WAIVE AND FOREVER RELINQUISH ANY AND ALL CLAIMS THAT I MAY HAVE, WHETHER KNOWN OR UNKNOWN, AND WHETHER ANTICIPATED OR UNANTICIPATED, ARISING OUT OF MY PARTICIPATION IN THE ACTIVITY.*

I understand and agree that if I am signing this form on behalf of my minor child, that I will be giving up the same rights for the minor as I would be giving up if I signed this document on my own behalf.

\_\_\_\_\_  
Patient Name (Print)

\_\_\_\_\_  
Patient Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name of Recovery Ways Staff (Print)

\_\_\_\_\_  
Recovery Ways Staff Signature

\_\_\_\_\_  
Date

**Appendix C**

**Intrinsic Motivation Inventory**

**Recreation Therapy Admit Assessment**  
**(Intrinsic Motivation Inventory- IMI)**

**Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Directions: Rate the following items in relation to your experience with **Recreation and Leisure activities in the last 30 days**. For each of the following statements, please indicate how true it is for you, using the following scale as a guide:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Not True at all</b>			<b>Somewhat True</b>			<b>Very True</b>

1. Recreation activities do not hold my attention at all. \_\_\_\_\_
2. I was anxious while participating in recreation activities. \_\_\_\_\_
3. After participating in these recreation activities for a while, I felt pretty competent. \_\_\_\_\_
4. I did not feel nervous at all while doing these recreation activities. \_\_\_\_\_
5. I could not do these recreation/leisure activities very well. \_\_\_\_\_
6. I would describe recreation/leisure activities as very interesting. \_\_\_\_\_
7. I felt pressured while doing these recreation/leisure activities. \_\_\_\_\_
8. I am satisfied with my performance with recreation/leisure activities. \_\_\_\_\_
9. Recreation/leisure activities are fun for me to do. \_\_\_\_\_

**Appendix D**

**Holistic Functioning Assessment**

**Recreation Therapy Admit Assessment (Leisure Step Up Assessment)**

**Directions: Rate yourself for the LAST 30 DAYS. Please read each question carefully, being honest with each question. After you read each sentence, indicate how much that sentence describes how you feel by using the scale below.**

1.Almost Never	2. Rarely	3. Sometimes	4. Usually	5. Almost Always
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<p><b><u>Leisure Functioning</u></b></p> <p>___ 1. The things I do with my free time are positive.</p> <p>___ 2. I get to do the things I want with my free time.</p> <p>___ 3. I enjoy my free time.</p> <p>___ 4. When I get free time, I do not know what to do with it.</p> <p>___ 5. I get enough free time.</p> <p>___ 6. I am interested in learning new things to do.</p> <p>___ 7. My free time is boring.</p> <p><b><u>Physical Functioning</u></b></p> <p>___ 1. I like the way I look.</p> <p>___ 2. I am physically active.</p> <p>___ 3. I feel good physically.</p> <p>___ 4. My physical health and condition prevent me from doing what I want.</p> <p>___ 5. I get enough sleep.</p> <p>___ 6. I have enough energy.</p> <p>___ 7. My drug or alcohol use creates problems.</p>	<p><b><u>Daily Living Functioning</u></b></p> <p>___ 1. I feel safe in my home.</p> <p>___ 2. I eat a balance diet.</p> <p>___ 3. I bathe or shower daily and take care of my health.</p> <p>___ 4. I have problems with those I work or go to school with.</p> <p>___ 5. I attend my school or job.</p> <p>___ 6. I participate in cleaning, cooking, and responsibilities at home.</p> <p>___ 7. I have problems with school/job or my daily responsibilities.</p> <p><b><u>Social Functioning</u></b></p> <p>___ 1. I share my feelings.</p> <p>___ 2. I can depend upon my friends.</p> <p>___ 3. I get along with authority.</p> <p>___ 4. I avoid time alone.</p> <p>___ 5. My family is important to me.</p> <p>___ 6. I enjoy being around others.</p> <p>___ 7. I give into peer pressure.</p>
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**Appendix E**

**Leisure Inventory**

**Recreation Therapy Admit Evaluation**

**Please circle the activities that you have PARTICIPATED in during the last 30 days. If you do not see something listed that you have done, please write it in under “Other”.**

<p><b><u>Team Sports</u></b>                  Basketball                  Softball/Baseball                  Soccer                  Football                  Hockey                  Bowling                  Volleyball                  Rugby                  Lacrosse                  Adaptive Sports</p> <p><b><u>Individual Sports</u></b>                  Walking/Jogging/Running                  Swimming                  Biking                  Frisbee Golf                  Tennis/Ping Pong                  Martial Arts                  Golf                  Badminton                  Croquet/Bocce                  Laser Tag                  Go-Carts</p> <p><b><u>Music</u></b>                  Singing                  Playing Instrument                  Attending Concerts                  Listening to Radio                  Karaoke                  Guitar Center                  Recording Music</p> <p><b><u>Arts and Crafts</u></b>                  Painting/Drawing                  Knitting/ Crocheting                  Sewing                  Latch Hook/ Weaving                  Embroidery                  Ceramics/Pottery                  Woodworking                  Jewelry Making</p>	<p><b><u>Dance</u></b>                  Country                  Folk                  Square                  Yoga                  Tap                  Ballet                  Line Dancing                  Ballroom                  Hip-hop                  Swing</p> <p><b><u>Community Activities</u></b>                  Shopping                  Dining Out                  Library                  Aquarium                  Museums                  Hometown Events                  YMCA/YWCA                  Flea Markets                  Sightseeing                  Religious Services                  Spectator Sports</p> <p><b><u>Literacy/Continuing Education</u></b>                  Nature Study                  Reading                  Computers                  Letter Writing                  Education Classes                  Studying</p> <p><b><u>Outdoor Activities</u></b>                  Hiking                  Rock Climbing                  Camping                  Skiing/Snowboarding                  Sledding                  XC Skiing                  Snowshoeing                  Barbecues/Picnics                  Canoeing/ Boating</p>
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Baking/Cooking Photography	Fishing Roller Skating/ Roller Blading Ice Skating
<b><u>Table Games</u></b> Cards Chess Checkers Dominoes Scrabble Puzzle Billiards Air Hockey Bingo Board Games	<b><u>Volunteer Service</u></b> Political Campaign Homeless Shelter Food Bank Special Olympics Nursing Homes Recycling Humane Society American Red Cross
<b><u>Individual Sedentary Activities</u></b> Collecting (stamps, rocks, etc.) Video Games T.V. Movies Bird Watching Cross Word/Sudoku Browsing the Internet	<b><u>Other</u></b> _____ _____ _____ _____ _____ _____ _____

**Appendix F**  
**Qualitative Questions**

**Name:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Directions:** Please answer the following questions:

1. How has your involvement in recreation activities in the Recreation Therapy Groups influenced your recovery process?
2. Did you experience pleasure, enjoyment or fun in the activities and why do you think this was the case for you?
3. Did the recreation activities help you change how you perceive yourself and your abilities? Please explain.
4. Did you feel tension, nervous or anxious while participating in recreation therapy activities? If you did, why do you think this was the case? If not, why do you think you did not?