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Meaningful Learning Experiences: The Influence of
Group-Based Adventure Recreation on
Behavioral Addiction Treatment

Robert L. Henderson

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

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ABSTRACT

Meaningful Learning Experiences: The Influence of Group-Based Adventure Recreation on Behavioral Addiction Treatment

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Adventure recreation (AR) has been found to supplement addiction treatment and recovery in valuable ways. However, questions about the components and processes of AR and its influence on behavioral addiction specifically, e.g., gambling, video gaming, pornography, etc., still remain. Using the Meaningful Learning Experiences Model (an AR-based framework) and a quasi-experimental pre-post design, the present study examined AR's influence on three therapeutic principles (authenticity, social network support, and therapeutic engagement) that have been found to significantly influence addiction recovery. Seventy-five participants with sexually related addictions, namely pornography addicts, supplemented their 12-Steps recovery meetings with a Meaningful Learning Experience and scuba diving intervention. MANOVA results indicated that AR influenced all variables in therapeutically beneficial ways, with the most saliently effected subdomains being *inauthentic living* and *social support networks*. These findings elucidate certain AR components and processes in an addiction treatment context and support previous claims that AR is also a viable and unique supplement for behavioral addicts seeking recovery.

Keywords: adventure recreation, meaningful learning experiences, addiction, behavioral, pornography, treatment, recovery.

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Meaningful Learning Experiences: The Influence of Group-based Adventure Recreation on
Behavioral Addiction Treatment

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Abstract

Adventure recreation (AR) has been found to supplement addiction treatment and recovery in valuable ways. However, questions about the components and processes of AR and its influence on behavioral addiction specifically, e.g., gambling, video gaming, pornography, etc., still remain. Using the Meaningful Learning Experiences Model (an AR-based framework) and a quasi-experimental pre-post design, the present study examined AR's influence on three therapeutic principles (authenticity, social network support, and therapeutic engagement) that have been found to significantly influence addiction recovery. Seventy-five participants with sexually related addictions, namely pornography addicts, supplemented their 12-Steps recovery meetings with a Meaningful Learning Experience and scuba diving intervention. MANOVA results indicated that AR influenced all variables in therapeutically beneficial ways, with the most saliently effected subdomains being *inauthentic living* and *social support networks*. These findings elucidate certain AR components and processes in an addiction treatment context and support previous claims that AR is also a viable and unique supplement for behavioral addicts seeking recovery.

Rationale

Amid the various treatments for addiction, group-based methods, commonly in the form of 12-Steps programs, have long been suggested as a technique of choice for recovery (Flores, 1997; Kouimtsidis & Ford, 2011; White, 1998; Zucker & Waksman, 1972). *12-Steps programming* is defined as a participant-run, group-based treatment model for addiction recovery that uses 12 guiding principles as a course of action (White, 1998). Scholars report addicts respond more favorably in groups and among peers because there is kinship in common suffering (Flores, 2001; Khantzian, 2001; White, 1998), and addicts are ideally situated to share their tremendous burdens with each other (Gladwell, 2005). In essence, “The very nature of addiction lends itself to group treatment” (Flores, 1997, p. 1).

Research has also revealed that certain multidimensional treatments, such as group-based adventure recreation (AR), supplement traditional modalities and reinforce recovery (Armitage, Lyons, & Moore, 2010; Baker, Harding, & Hadwen, 1994; Bennett, Cardone, & Jarczyk, 1998). *AR* is defined as an experience (a) commonly taking place out-of-doors or in a natural environment and (b) presenting novelty, challenge, and uncertainty (Chase & Chase, 1996; Priest & Gass, 2005; Rossman & Elwood-Schlatter, 2008). AR has been noted as having several therapeutic benefits (Gladwell, 2005; Hood, 2003; Keesmaat, 1998; Taniguchi, Freeman, & Richards, 2005), and for individuals seeking sustainable remediation from addiction, has been found to influence three of the most salient predictors of recovery: authenticity, therapeutic engagement, and social network support (SNS). Hood (2003) found AR promoted authenticity and self-learning in individuals seeking treatment for alcoholism, and Keesmaat (1998) reported treatment groups that participated in recreation together experienced interpersonal benefits and therefore engaged more fully in the recovery process.

While studies report AR affords several beneficial and therapeutic outcomes, questions about the relationship between AR and addiction recovery, and the many processes that lie therein, still remain. Specifically, not a lot is known about how and why AR positively influences the treatment process (Hood, 2003; Hser & Anglin, 2011; Simpson, 2004). In addition, while researchers have tested the value of AR for individuals with drug addiction, little is known about AR's influence on behavioral addictions (e.g., pathological dependencies on sex, Internet or pornography usage, video gaming, eating, gambling, etc.) (Carruthers, 1999). Therefore, more theoretical development and empirical research is needed in this area.

One theory that may explain how and why AR influences the addiction recovery process is Taniguchi et al.'s (2005) Meaningful Learning Experiences Model (MLEM). The model proposes that *meaningful learning experiences* (MLE), in a group-based AR context, can be accounted for via five specific experience phases: risk, feelings of awkwardness, fractional sublimation, reconstruction, and growth (Taniguchi et al., 2005). MLE are believed to shed psychological facades and increase authenticity in participants, and as authenticity increases (or inauthenticity decreases), research suggests therapeutic engagement and networks of social support deepen (Aames, 2011; Houchin, 2011; Nixon, 2012; Van Deurzen, 2002). Although the MLEM and its accompanying rationale have not been fully tested, the model appears to be useful for explaining why particular therapeutic outcomes might be associated with AR experiences.

Therefore, the purpose of this study is to test if an AR experience, consistent with the elements proposed by the MLEM, provides therapeutic benefits for behavioral addicts in group treatment. More specifically, this study will examine individuals with sexual addictions, namely pornography addicts, who are attending 12-Steps recovery programming, and determine if MLE affects their authenticity, treatment engagement, and SNS.

Literature Review

The literature related to addiction and AR is presented in this chapter in four sections: (a) addiction, (b) addiction treatment, (c) AR, and (d) theories of AR and addiction treatment.

Addiction

An increasing number of people are being overexposed to and becoming entangled in addiction—“the leading public health problem in America” (Coombs, 2004, p. xiii). While drug addiction is what comes to mind when thinking about addiction types, behavioral addictions (pathological dependencies on sex, Internet or pornography usage, video gaming, eating, or gambling, etc.) are also a serious concern (Carruthers, 1999; Goodman, 2008; Grant, Potenza, Weinstein, & Gorelick, 2010). The National Association of Anorexia Nervosa and Associated Disorders (2011) noted that one in five women manifest addictive forms of anorexia or bulimia. Furthermore, American boys view on average 50 pornographic clips per week (Zimbardo, 2011), contributing to the projected 25 million Americans who meet the criteria for cyber-sex addiction (The Society for the Advancement of Sexual Health, 2011).

According to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (American Psychiatric Association, 2000) and the World Health Organization (1992), addiction is present if a person can answer “yes” to three of the following seven questions:

- a) *Tolerance*. Has your use or participation increased over time?
- b) *Withdrawal*. When you stop using or participating, have you ever experienced physical or emotional withdrawal (symptoms such as irritability, anxiety, mood shifts, shakes, sweats, nausea, or vomiting)?
- c) *Difficulty controlling your use*. Do you sometimes use more or participate for longer amounts of time than originally intended?

- d) *Negative consequences.* Have you continued to use or participate despite negative consequences to your mood, self-esteem, health, job, or family?
- e) *Neglecting or postponing activities.* Have you ever put off or reduced social, recreational, work, or household activities because of your use or participation?
- f) *Spending significant time or emotional energy.* Have you spent a significant amount of time thinking about, obtaining, using, concealing, scheming, minimizing, or recovering from your use or participation?
- g) *Desire to cut down.* Have you thought about cutting down or controlling your use or participation *and* had unsuccessful attempts to cut down or control your use or participation?

Beneath the construct of addiction, there are also two subcategories that are worth noting: substance-related and behavioral addictions. *Substance-related addictions* are characterized by psychoactive substances that are administered into the body (American Psychiatric Association, 2000). *Drug addiction, substance abuse, chemical dependency, and substance-related addiction* are by and large synonymous terms that attribute compulsive and uncontrollable usage to psychoactive substances. A *psychoactive substance* is any drug or chemical that, if taken into the body, crosses the blood-brain barrier and influences cognition via perception, mood, or affect (Miller & Plant, 2010). Psychoactive substances are divided into eight overarching categories: depressants, stimulants, opiates, hallucinogens, cannabinoids, anabolic steroids, inhalants, and prescription drugs (National Institute, 2009). Nicotine and alcohol are examples of psychoactive substances, as are *harder* drugs, such as heroin and cocaine. Caffeine and most over-the-counter and prescription medications, such as Vicodin, Ritalin, and even Ibuprofen are also examples of psychoactive substances with addictive potential.

Behavioral or natural addictions, on the other hand, differ from drug addictions because psychoactive substances are not the sources of stimuli. Instead, specific behaviors are responsible for igniting the pleasure-reward pathway (or limbic system) in the brain (Doidge, 2007; Hilton, 2010; Kourosh et al., 2010). Zimbardo (2011), who prefers the term *arousal addiction*, reported behavioral addictions are induced and also maintained by experiences of novelty and variety. Therefore, instead of seeking out more of the same—as with a heroin user who seeks more of the same kind of heroin to get high—behavioral addicts desire uniqueness and newness for maintained arousal. As an illustration, a person with a cyber-sex addiction does not tend to revisit the same pornographic clips, but satiates craving and arousal by exploring various pornographic sub-genres (e.g., teen, interracial, or animated pornography—three examples among many hundreds of sub-genres) (“List of pornographic,” 2011).

Although more attention and concern is generally directed towards drug addiction, behavioral addictions are unique and concerning in their own right. For instance, the signs and symptoms of behavioral addictions are generally more concealable, earning them the title *invisible addictions* (Morgan, 1996; Wexler & Wexler, 2004; Wilson, 1999). Invisible addicts do not generally display the same flagrant physical markers as drug addicts, like beer-soaked breath or forearm track-marks. Invisible addictions are also considered more pervasive than drug addictions because they are more socially acceptable, oftentimes more easily and instantaneously accessed, and relatively inexpensive, and therefore, are introduced to younger and more vulnerable populations (Morgan, 1996; Wexler & Wexler, 2004; Wilson, 1999).

Pornography addiction is defined as an unhealthy use of media intended to increase sexual arousal marked by a loss of control and continuation in spite negative and adverse consequences (Carnes, 2011; Carroll et al., 2008) and is perhaps the quintessential example of an

addiction with invisible attributes. Viewing pornography is highly addictive (Doidge, 2007; Hilton, 2010; Paul, 2005) and it is becoming more prevalent and socially acceptable (Carroll et al., 2008; Eberstadt, 2010). Pornographic material can also be accessed by virtually anyone, anywhere, at a push of a button, and it is available for free or at a small cost to its viewers (Carroll et al., 2008). It is also notable that children are exposed to pornography at an earlier age than drugs (Wolak, Mitchell, & Finkelhor, 2007). Therefore, due to concealability and pervasiveness, behavioral addictions, specifically pornography addiction, warrant special attention and priority from both the scholarly and clinical communities (Carruthers, 1999; Goodman, 2008).

Addiction Treatment

While the ill effects and pervasiveness of addiction are concerning, there is also great promise for addicts seeking treatment and recovery. The greater body of addiction literature contains many examples and evidence-based practices that sustain and augment treatment and remediation. Recovery, however, is a multifaceted construct, and several components and processes must be considered before meaningful healing can occur.

Jaffe (1979), one of the first visionaries who studied the processes of addiction treatment and recovery, raised important questions about whether outcomes of treatment can be clearly tied to the treatment processes:

The evidence is overwhelming that while in treatment in a variety of programs, and for varying periods thereafter, a significant proportion of drug users [addicts] exhibit substantial improvement in a number of areas. What is still at issue is not that change occurs, but rather the degree of change which can be attributed to the treatment process.
(p. 9)

Over three decades later, researchers generally agree, due to social factors and individual variability, it is still difficult to tie specific treatment processes to defined treatment outcomes (Hser & Anglin, 2011; Simpson, 2004). In short, while our understanding of addiction and treatment has developed and improved (White, 1998), it still remains debatable as to what percentage of recoverability can be attributed to various treatment practices versus other factors.

In spite of this limitation, however, research has identified certain addiction treatment principles and practices that are more meaningful than others. Three prominent principles emerge from the literature and appear most critical to sustainable remediation and recovery. These principles include authenticity, social network support (SNS), and therapeutic engagement.

Authenticity. *Authenticity* is being fully aware in the moment, accepting responsibility for personal choices and actions, and accepting the possibilities as well as the limits of existence (Aames, 2010). Lopez and Rice (2006) suggest authenticity should be divided into three separate domains that measure living authentically, accepting external influences, and self-alienation. *Inauthentic living* is not being true to oneself in most situations nor living according to one's beliefs and values. *Accepting external factors* refers to the unhealthy introjection of others' views and values, and *self-alienation* involves not knowing oneself or being disconnected from one's true self. Taken together, these three domains comprise the construct of authenticity (Wood, Linley, Maltby, Baliousis, & Joseph, 2008).

Authenticity, or the true self, as some scholars have termed it, sets the foreground for sustained recovery. Scholars report authenticity deepens treatment engagement, develops trustfulness in self and others, and is key to forming therapeutic alliances (Aames, 2011; Van Deurzen, 2002). Nixon (2012) also adds that many addicts experience a counterfeit quest to

recovery because therapeutic processes often do not account for authentic and intrapersonal wholeness. Therefore, evidence suggests authenticity is an essential component for true and sustainable recovery.

Social network support (SNS). Another foundational principle for achieving sustainable recovery (which happens to also be influenced directly by authenticity) is a network of social supporters (Garner, Knight, Flynn, Morey, & Simpson, 2007; Joe, Broome, Rowan-Szal, & Simpson, 2002). *SNS* is defined as the ability to link up with, seek support from, and offer support to others on the basis of commonly agreed standards and goals (Garner et al., 2007; Joe et al., 2002; Mettler & Rohner, 2009). Simpson (2004) identifies two related domains of SNS: peer and social support. *Peer support* accounts for the relationships established within the addiction recovery support group (e.g., others involved in 12-step programs). *Social support* refers to the relationships established with friends and family members outside of the treatment group.

A supportive social network has long been regarded as an important locus for behavioral reinforcement (Litt, Kadden, Kabela-Cormier, & Petry, 2009). If people in a social sphere are casual drinkers, it is likely inductees will also adopt casual or social drinking (Demetrius, Ja, & Wilson, 2010; Project MATCH, 1997). Likewise, if surrounded by friends or family who promote and support the cessation of a behavior, individuals are significantly more likely to at minimum decrease the behavior, but more commonly be led to cessation (Kelly et al., 2010; Tiburcio, 2008). Berscheid (2003) concluded that the reason SNS is imperative to sustained behavioral change, and subsequently prolonged recovery from addiction, is because a human's greatest strength is their relationship with other humans.

Therapeutic engagement. In addition to authenticity and SNS, empirical attention has also been given to a third treatment principle—*therapeutic engagement*—because of its influence on sustained addiction recovery. According to Simpson (2004), therapeutic engagement is impacted by treatment satisfaction (Stiles et al., 1994) and treatment participation. *Treatment satisfaction* is defined as happiness with the overall philosophies, services, and convenience of the addiction treatment programming (Garner et al., 2007). *Treatment participation* is defined as the extent to which addicts use and apply treatment resources, contribute in and to group meetings, and essentially assume the role of *addict-in-recovery* (Garner et al., 2007; Simpson, 2004).

Therapeutic engagement is encouraged for those in recovery because addicts with greater engagement are twice as likely to develop enduring therapeutic relationships, both with the practitioner or facilitator and with other treatment group members (Kolden, 1996; Simpson, 2004). Therapeutic engagement is also correlated with retention and is positively associated with indices of therapeutic outcomes, including cognitive understanding and problem solving skills (Kostopoulos, 2000; Stiles et al., 1994).

In addition to the three meaningful principles that have emerged from the literature, research has also revealed certain “best-practices” for addiction treatment. Several of these are discussed here, including group-based treatment, 12-Step programs, and multi-dimensional treatment approaches.

Group-based treatment. Group-based treatment modalities appear to be the best formal practices for addiction recovery (Byrne, Lander, & Ferris, 2009; Chrismore, Betzelberger, Bier, & Camacho, 2011; Flores, 1997; Hook, Hook, & Hines, 2008; Kouimtsidis & Ford, 2011; Marceaux & Melville, 2011; Zucker & Waksman, 1972). *Group treatment* is defined as an

assembly of two or more people who have (a) established a safe and cohesive milieu for addiction recovery, (b) a leadership structure at the onset, (c) a working alliance, and (d) conflict resolution (Pressman, Kymissis, & Hauben, 2001). Among the reported findings, studies have concluded that addicts were more likely to remain sober and committed to abstinence because of their participation in a treatment group (Flores, 2001; Khantzian, 2001). In addition, group treatment practices yield the best results when working with both drug and behavioral addicts. In essence, “The very nature of addiction lends itself to group treatment” (Flores, 1997, p. 1).

12-Steps programming. 12-Steps programming is one of the quintessential examples of effective group treatment. *12-Steps programming* is defined as a participant-run, group-based treatment model for addiction recovery that uses 12 guiding principles as a course of action (White, 1998). Temperance clubs, groups, and societies date back to the Washingtonian Movement in the late 1700s; however, in 1935, Bill Wilson and Dr. Bob Smith founded Alcoholics Anonymous (AA) and 12-Steps programming—the most involved, universally accepted, and profound mutual-aid movement in history (White, 1998). Three-quarters of a century later, 12-Steps methods provide the foundation for numerous addiction recovery groups (AA, Narcotics Anonymous [NA], Sexaholics Anonymous [SA], etc.). It is estimated over 25 million Americans regularly attend these programs for addiction recovery support (Kessler, Mickelson, & Zhao, 1997).

Compared with other treatment modalities, 12-Steps programming works particularly well partially due to the network of social support created through group membership. The American Psychiatric Association (2000) officially recognizes the value of this treatment approach as one of the most robust venues for addiction treatment. The 12-Steps process involves the following principles:

1. Admitting one cannot control one's addiction or compulsion
2. Recognizing a higher power as a source of greater strength
3. With the help of a sponsor (experienced member), examining past errors related to addictive patterns
4. Making amends for the accompanying errors
5. Learning to live a new life with a new code of behavior
6. Helping and supporting others who suffer from the same addictions or compulsions

A number of scholars suggest 12-Steps' success, both in attendance and in sustaining recovery, can be directly tied to sponsorship and relational support (as specified in principles three and six), or what the literature refers to as *kinship in common suffering* (Flores, 1997; Galanter & Brook, 2001; Marceaux & Melville, 2011; White, 1998). In fact, without SNS, some suggest 12-Steps programming simply fails (Byrne et al., 2009; Chrismore et al., 2011). More simply put:

An alcoholic [addict] could lose his [or her] job and his family, he could be hospitalized, he could be warned by half a dozen doctors—and go on drinking [using/participating]. But put him in a room of his peers once a week—make him share the burdens of others and have his burdens shared by others—and he could do something that once seemed impossible. (Gladwell, 2005, p. 351)

Multidimensional treatment. Despite the support and strong emphasis for group-based treatment practices, most researchers and clinicians report no single cookie-cutter or one-size-fits-all addiction treatment will suffice. According to Dr. Timothy Sheehan, an addiction psychologist, “If you have an addiction that has multidimensional causes and impact you need a multidimensional treatment approach” (personal communication, November 4, 2011).

Therefore, multidimensionality is using various treatment modalities in conjunction with one

another. Art, creative writing, equine, dance, mindfulness, music, play, and recreation therapies are all examples of nontraditional modalities deemed appropriate and augmentative to the addiction recovery process (Brooke, 2009; Siegel, 2010; Wilson, 1999). Therefore, multidimensional and holistic practices, or *technical eclecticism* as some scholars term it, are deemed as best practices (Slife, 2001).

Adventure Recreation

Adventure recreation (AR) is the multidimensional practice of interest in the present study. AR often refers to outdoors and wilderness activities such as backpacking, rock climbing, rafting, or scuba diving. AR is defined as an experience (a) commonly taking place out-of-doors or in a natural environment and (b) presenting novelty, challenge, and uncertainty (Chase & Chase, 1996; Priest & Gass, 2005; Rossman & Elwood-Schlatter, 2008). AR in the form of backpacking and rock climbing is implemented by Homewood Alcohol and Drug Service in Guelph, Ontario, to promote individual growth and behavioral change among clients seeking substance-related remediation (Baker et al., 1994). In addition, Bennett et al. (1998) found therapeutic camping significantly decreased autonomic arousal (craving and withdrawal), frequency of negative thoughts, and relapse up to 10 months after treatment. And several other addiction programs implement AR as a treatment modality for various types of addictions, such as white water rafting and kayaking at English Mountain Recovery and scuba diving at Behavioral Health of the Palm Beaches (Behavioral Health, 2013; English Mountain Recovery, 2013).

AR has also been found to influence the more prominent principles of addiction treatment (i.e., authenticity, therapeutic engagement, and SNS). Hood (2003) found recreation participation was correlated with alcoholics' authenticity and self-learning. In addition, Keesmaat (1998) found that recreation influenced therapeutic engagement and SNS, as it

promoted the development of social skills and support groups and encouraged drug addicts to “come early [to treatment groups] and stay late” (p. 3).

However, several questions about the relationship between AR and addiction recovery still remain. For example, little is known about how and why AR positively influences treatment engagement, and new theories need to be tested (Hood, 2003). In addition, researchers have tested AR within the realm of drug addiction, but AR’s influence on behavioral addictions is virtually nonexistent (Carruthers, 1999).

Theories of AR and Addiction Treatment

Several theories attempt to explain why AR positively influences addiction treatment. The present review highlights three. The Theory of Process Addiction (TPA) postulates that all addictions, both drug and behavioral, share the same underlying biopsychological processes (Goodman, 2008; Grant, Brewer, & Potenza, 2006). According to TPA, the addicted brain does not distinguish between rewards, but the limbic system (the pleasure-reward pathway in the brain) fires similarly for both behavioral and chemical rewards (Brook, Whiteman, Flinch, & Cohen, 1998; Brook, Whiteman, Flinch, & Cohen, 2000; Slutske, 2006; Slutske, Caspi, Moffitt, & Poulton, 2005). Hence, TPA asserts that people who become addicted do not necessarily crave a drug or a certain behavior, per se, but the rush of dopamine (or similar pleasure chemicals) triggered by rewarding stimuli (Brewer & Potenza, 2008; Smith & Seymour, 2004). If all addictions affect the brain similarly, then the argument could be made that effective drug addiction treatments (e.g., AR) will most likely benefit behavioral addicts, even if such premises have never specifically been tested.

Itin (1995) proposes an alternative theory. He states the out-of-doors and natural settings are responsible for the subsequent remedial effects over addiction. Itin’s rationale is grounded in the biophilia hypothesis, which argues that all human beings have a genetic predisposition

towards and affection for life-like or nature processes (Wilson, 1984). Therefore, some argue it is “The awe of encountering an animal in the wild or a slug underfoot, of sleeping under the night sky, or of even seeing the night sky in our urban settings” (Kahn, Ruckert, Severson, Reichert, & Fowler, 2009, p. 59) that augments the addiction recovery process. According to Russell (2001) and Dupuy and Morelli (2007), nature influences addiction recovery because it is ideally situated to reconnect addicts with natural consequences, create isomorphic metaphors to life in general, and move participants from pathological eco-centrism to more caring responses to self and others. As addicts navigate the wild, the awe and wonder of nature can afford spiritual awakening and cleansing (Dupuy & Morelli, 2007; Russell, 2001). Thus, according to the Biophilia rationale, the prescription for recovery, and to several other deficits and related pathologies, is a heavy dose of outdoor-time, or experiences set in nature and its breathtaking scenery (Louv, 2005).

Meaningful Learning Experiences Model (MLEM). The MLEM (Taniguchi et al., 2005) is a third theory that may explain why AR influences addicts seeking recovery. This model stems from Palmer (2004) and his work on meaningful (or authentic) educative experiences. According to Palmer, people oftentimes lose touch with who they truly are, as their academic, professional, and social selves are but facades constructed to meet certain cultural affordances. He claims everyone is guilty of fronting false pretenses, seemingly necessary to live up to high societal and personal expectations. As such, Palmer asserts people are, in general, disingenuous and oftentimes have a personal and exigent need to be reacquainted with authenticity and their *whole* self. Addicts are no exception to Palmer’s observations, for they too are tangled up in chronic facades, created and maintained to meet addictive affordances (Failler, 2006; Young, 2009).

Thus, Palmer suggested meaningful learning experiences (MLE) as a possible remedy for a lost self. MLE are defined as experiences that lead a person to authentic change via the realization of their weaknesses, strengths, and potentials. MLE are more than just learning, they are guides to ‘people’s perceptions of who they really are and what they are capable of’ (Taniguchi et al., 2005, p. 136). The authenticity brought about by MLE could theoretically aid addiction remediation and the recovery process by shedding addictive facades and reaffording a more complete perspective of personal capabilities and potential.

Taniguchi et al. (2005) contributed to Palmer’s research by asking the question: what components make up an MLE? In a qualitative study, Taniguchi and colleagues investigated the experiences that took on meaning for participants who engaged in various group-based AR experiences. Results revealed two *experience arena* components (AR and a group setting) and five experiences phases (perceived risk, feelings of awkwardness, fractional sublimation, reconstructions, and growth) influence MLE (see Figure 1).

Adventure recreation. The venue for MLE is not explicitly defined in the literature; however, an adventurous outdoor setting is inferred as the arena of choice. Taniguchi (2004) argues an AR setting is oftentimes unpredictable and haphazard, full of novel and ruthless stimuli, both wanted and undesired. He continues by pointing out the natural environment inherently prompts participants to decide for themselves what to make of the oftentimes chaotic and/or unfamiliar terrain. This process tends to disrupt participants’ comfort zones, and in many cases, it forces them to ascribe relevant meaning to their experiences in the wild. Hence, if meaningfulness is a targeted participant outcome, an AR setting is among the most ideal arenas for such a result to occur.

Group setting. Group participation is the second arena component that tends to facilitate meaningfulness in participants. It should be noted that solo adventures can also afford meaningfulness; however, for solo exercises to reach full and meaningful potential, conditions must reach extreme limits (Allison, 2004), as with the Antarctic explorer Douglas Mawson, who, after being abandoned by his shipmates in the early 1800s, was left to endure the unforgiving tundra alone for several winter months. Only then did Mawson report the ability to step outside of himself to get a good view of who he really was. Extreme solo experiences are not feasible or reasonable for many in addiction treatment; thus, Allison (2004) suggested group debriefing as a viable alternative, as interactions and relationships can present people with insights not previously considered. In Taniguchi et al.'s (2005) study, participants repeatedly referenced how other group members helped shape their perspectives. Therefore, it is argued that group dynamics tend to broaden the paradigm individuals assess themselves with. In short, since solo extremes are by and large difficult to appropriately or even ethically replicate, a group setting should be considered as the second component: for it is amid a group of invested participants that deeper meaning and intrapersonal change often emerges.

Perceived risk. Subsequent to the two arena components (AR and group), five experience phases are also presented—the first of which is perceived risk. Taniguchi et al. (2005) reported participants who experienced moments of perceived danger and/or uneasiness, ranging from mild embarrassment among group members to perceived and sometimes actual life-threats, tended to encounter meaningfulness. Participants gleaned insights about their strengths and weaknesses due to perceptions of risk presented in their AR experiences. It should be noted, however, that risk perception is, in general, a tremendously subjective concept, influenced by numerous variables such as age, sex, education level, and life experiences

(Sjoberg, 2000). Therefore, for meaningfulness to accompany participation, it is imperative that the experience accounts for unfamiliar, novel, and/or precarious moments (perceived risk) on an individual level.

Feeling awkward. The second phase of the MLEM, feeling awkward, manifests when group participants encounter a state of discomfort and/or uneasiness due to unfamiliar, novel, precarious, and oftentimes inconvenient recreation activities. On the milder end of the spectrum, some participants report feeling out-of-place. At the other end of the spectrum, some participants experience a loss of control. Thus, when people are presented with experiences that are perceived as unfamiliar and risky, feelings of awkward uneasiness will commonly follow.

Fractional sublimation. Perceptions of risk and awkwardness contribute to the third MLEM phase—fractional sublimation. In chemistry, fractional sublimation is the process of separating impurities, through extreme pressure and temperatures, to form a purer element. In the behavioral sciences, fractional sublimation is shedding and leaving behind fabricated pretenses or facades (impurities) through risk and awkwardness, which uncovers a more whole and authentic (pure) self. Taniguchi et al. (2005) described two components that contributed to fractional sublimation. First is the immensity of the elements, also referenced in the literature as the indescribable or unexplainable experiences of nature. Nature's confrontation often compels participants to face their facades and oftentimes painfully and even frustratingly process aspects of the sublime (Kant, 1982).

Along with the power of nature, participants report being forced to shed their facades during group debriefs and processing. Group members observe each other's experiences with risky and awkward situations and watch during times of uneasiness and frustration. Observing group members expose participant facades and contribute to the process of fractional sublimation.

Hence, be it the immensity of the natural environment, facade exposure among observing group members, or more ideally a combination of both cues, participants who experience risk and awkwardness in a group-based AR setting will likely leave behind certain fabricated impurities and uncover a more whole and authentic self.

Reconstruction of self-image. The fourth phase of the MLEM, *reconstruction of self-image*, is accounted for by one of two subphases: *reflection* and/or *reformation*. Reflection is a casual introspection of performances and experiences. This can be accomplished through journaling or downtime, or wherever participants can reflect upon their experiences. Reformation is an extrospection of performances and experiences among group members. The group is invited to formally or informally disclose observations and conclusions about their experiences to each other, about self and others. Internal and external processing peels away facades and affords participants the information necessary to begin making sense of and ascribing meaning to themselves and their experiences.

Allowing for growth. Exposure to risk, awkwardness, fractional sublimation, and reconstruction primes participants for *growth*, the final phase of the MLEM. Growth is recognizing a personal change has occurred and the process yielded memorable and worthwhile results. In this phase, group members begin to recognize, appreciate, and to a certain extent implement introspective and extrospective observations gleaned from their participation. Facade layers are peeled back, and participants recognize certain layers have been shed. A more whole and authentic, less fabricated self emerges, and the MLE solidify.

The Present Study

The present study argues that addiction treatment and recovery are complex constructs; however, there is consolation for individuals in recovery. Among the research findings afforded to addicts in recovery, authenticity (Aames, 2011; Nixon, 2012; Van Deurzen, 2002), SNS

(Berscheid, 2003; Demetrius et al., 2010; Kelly et al., 2010; Litt et al., 2009; Project MATCH, 1997; Tiburcio, 2008), and therapeutic engagement (Kolden, 1996; Kostopoulos, 2000; Simpson, 2004; Stiles et al., 1994) appear to be the most salient therapeutic principles. In addition, research has found that group-based and multidimensional treatment methods are *practices-of-choice* (Brooke, 2009; Byrne et al., 2009; Chrismore et al., 2011; Flores, 1997; Hook et al., 2008; Kouimtsidis & Ford, 2011; Marceaux & Melville, 2011; Siegel, 2010; Slife, 2001; Wilson, 1999; Zucker & Waksman, 1972), and AR is one specific modality (both group-based and multidimensional) that provides therapeutic benefits for addicts seeking remediation (Baker et al., 1994; Bennett et al., 1998; Behavioral Health, 2013; English Mountain Recovery, 2013; Hood, 2003; Keesmaat, 1998). Furthermore, the MLEM is a theoretical framework that explains how AR could impact addiction treatment (Taniguchi et al., 2005); however, it is unclear exactly how MLE affects certain therapeutic principles or what sequence of effects will unfold. Therefore, these unique and intricate variable relationships warrant further examination.

Figure 2 illustrates the empirical and theorized relationships between the presented variables of interest and surfaces some of the questions that are unanswered in the literature. According to Taniguchi et al. (2005), MLE affects a participant's authenticity. And according to Aames (2011) and Van Deurzen (2002), increases in authenticity tend to lead to increases in SNS and therapeutic engagement. However, MLE are also considered AR-based methods, and several studies suggest that group-based AR directly influences, not only authenticity, but SNS and therapeutic engagement as well (Berscheid, 2003; Hatch, 2006; Hood, 2003; Keesmaat, 1998; Kolden, 1996; McEvoy & Buller, 1997; Simpson, 2004). Therefore, in conjunction with this extensive literature review, several questions are presented: if an addict engages in an MLE by him or herself, will their authenticity increase? And in accordance with Aames (2011) and

Van Deurzen (2002), if their authenticity increases (via an individual MLE) will addicts find deeper social networks of support and/or therapeutic engagement back in their treatment setting? Or, does a group of addicts who are engaged in treatment together need to experience an MLE together as a group in order for SNS and therapeutic engagement to take hold in treatment?

The present review argues that behavioral addicts in 12-Steps programming who supplement their treatment with MLE should not only shed certain psychological facades and emerge more authentic, but also they should then return to their treatment groups and experience increases in therapeutic engagement and deepened SNS. Thus, the following are the hypotheses being examined and empirically tested in this study:

H₀₁: Meaningful learning experiences do not affect addiction treatment outcomes: (a)

authenticity (comprised of self-alienation, accepting external influences, and inauthentic living), (b) therapeutic engagement (comprised of treatment participation and satisfaction), and (c) perceptions of SNS (comprised of peer and social support).

H₀₂: Time in treatment does not affect the addiction treatment outcomes listed above.

H₀₃: Meaningful learning experiences and time in treatment do not interact in affecting the addiction treatment outcomes listed above.

Method

The purpose of this study was to determine if MLE influences *behavioral* addicts' (a) authenticity (comprised of self-alienation, accepting external influences, and inauthentic living), (b) therapeutic engagement (comprised of treatment participation and satisfaction), and (c) perceptions of SNS (comprised of peer and social support). This section outlines the procedures used in the study, including (a) participant selection, (b) instrumentation, (c) procedures, and (d) method of data analysis.

Participant Selection

Volunteers for this study were recruited from a city in the Rocky Mountain West. A convenience sample of 75 participants was drawn from 12-Steps recovery groups focusing on sexually-oriented behavioral addictions. Initially, participants were recruited via an announcement at the beginning of SA meetings (12-Steps meetings for sexually-related addictions), but later, because of logistical challenges, snowball sampling was employed. Changes in sampling techniques were due to certain participants expressing that using group meetings to recruit participants could be a violation to some of the twelve traditions, i.e., recruiting could compromise anonymity and research could be considered an “endorsable outside entity,” which 12-Steps programs are counseled to avoid (“Twelve traditions,” 2012). Therefore, when it became apparent that recruiting methods might be encroaching on certain participants’ comfort levels and could be perceived as violating some of the twelve traditions, recruiting tactics were replaced and researchers collected as much data as logistical bounds permitted.

Instrumentation

In addition to general sociodemographic items, instrumentation included the following self-administered questionnaires: (a) an adapted 33-item version of the Client Evaluation of Self and Treatment (CEST; Texas Christian University, 2005; see Appendix B) and (b) the 12-item Authenticity Scale (AS) (Wood et al., 2008; see Appendix C). These measures are described in the following sections.

Client Evaluation of Self and Treatment (CEST). The CEST has been applied to various populations in different settings and has been widely accepted as an assessment tool for measuring outcomes related to the addiction treatment process (Garner et al., 2007; Greener, Joe, Simpson, Rowan-Szal, & Lehman, 2007; Joe et al., 2002; Roberts, Contois, Willis, Worthington, & Knight, 2007; Simpson, 2004). The CEST is a 16-factor questionnaire, consisting of 130

items. It takes approximately 25 minutes to complete. The instrument assesses client performance, psychological change during treatment, and program-level functioning (Simpson, 2004). The CEST asks participants to rate each statement on a five-point Likert scale, 1 = *disagree strongly* to 5 = *agree strongly*. Examples of the items found in the CEST include *there is a sense of family (or community) in this program, this program expects you to learn responsibility and self-discipline, and time schedules for counseling sessions at this program are convenient for you.*

Previous research has evaluated the reliability of the CEST. Joe et al. (2002) administered the CEST to a national sample of over 1700 clients from 87 drug treatment programs and reported a satisfactory Cronbach's alpha for the overall instrument ($\alpha = 0.88$). Program-level alpha reliabilities were also satisfactory (α ranging from 0.71 to 0.96; see Table 1). Furthermore, the CEST model structure and scales had an acceptable fit (minimum fit $\chi^2(7260) = 19258.30$; RMSEA = .048; SRMR = .073).

The present study adapted the CEST from its original format to fit a 12-steps program setting. The modifications were minor and only pertained to terminology discrepancies and applicable domains. As an example, the original CEST is directed towards drug addicts admitted into a clinical or correctional setting. The population of interest in the current study is not clinical, correctional, or substance-related, but community-based, behaviorally oriented, 12-Steps programming. Therefore, certain terms such as *counselor, program, and drugs* were replaced with terms that fit the sample of interest (facilitator, group meetings, and addiction). The original CEST states: *time schedules for counseling sessions at this program are convenient for you.* The adapted CEST reads: *time schedules for group meetings are convenient for you.* As another example, the original CEST states: *you have made progress with your drug/alcohol*

problems, whereas the adapted-CEST states: *you have made progress with your addiction problems*.

In addition to minor terminology discrepancies, certain CEST program-level domains, such as *hostility* and *counseling rapport*, apply well in a clinical and correctional setting but do not fit with the community-based 12-Steps population of interest. Therefore, this study assessed the program-level indicators relevant to the population of interest, i.e., *treatment satisfaction*, *treatment participation*, *peer support*, and *social support*.

Treatment satisfaction contains seven items and uses statements such as *this program is organized and run well* and *this program's location is convenient for you*. Twelve items comprise the treatment participation indicator, measuring participants' agreeableness using items such as *you have made progress with your addiction problems* and *you always participate actively in your 12-Steps meetings*. Peer support implements five statements and includes items such as *you have developed positive trusting friendships while at this program*. And the fourth program-level indicator—social support—employs nine statements including the item *you have people close to you who motivate and encourage your recovery*.

Authenticity Scale (AS). The AS was developed in 2008 in response to Lopez and Rice's (2006) claim that there was a "virtual absence of available measures of the construct" (authenticity; p. 362). The 12-item AS has three domains that measure *inauthentic living*, *accepting external influences*, and *self-alienation*, with higher-scoring individuals exhibiting greater authenticity. The AS uses a seven point scale, from 1 = *does not describe me at all* to 7 = *describes me very well* (Wood et al., 2008). Two example items are: *I think it is better to be popular than to be yourself* and *other people influence me greatly*. As evidence of reliability, Wood et al. (2008) reported Cronbach alphas from $\alpha = .82$ to $.84$. In addition, test-retest

correlations ranged from $r = .79$ to $.91$. Discriminant validity was evaluated by comparing the scale to a social desirability scale. Correlation coefficients ranged from $r = .05$ to $.09$, $p > .05$. The psychometric properties for this scale were thus deemed satisfactory for use in the current study.

Procedures

Design. This study was originally designed as a classical, pretest, posttest, control group, quasi-experimental design (Campbell & Stanley, 1966). The intent was to randomly assign 60 participants to an intervention condition and 60 participants to a control condition (total $n = 120$). The *a priori* power estimate for that design was $.80$. Outcome measures were to be taken on both pre and post occasions. Unexpected issues related to research logistics arose in recruiting participants and securing permissions to recruit. As a result, only 75 individuals participated in the study. All of these participated in the MLE and completed the AS and CEST subscales on the pretest occasion. The design stipulated that post-occasion measures would be collected two weeks following the MLE. Post-intervention attrition, however, was substantial. Only 41 of the 75 participants, 45%, completed the AS and CEST subscales on the post-intervention occasion. Therefore, data were analyzed using a nonequivalent control design; the posttest outcomes from the participants who took both pre- and posttest measures were compared to the pretest outcomes of participants who took only the pretest measures.

Setting. The MLE took place at the Homestead caldera, also known as *The Crater*. The Crater is a 10,000 year-old, 55-foot tall, beehive-shaped, natural volcanic caldera and hot spring. Water erosion and pressure hollowed out the center of this conical structure and a thermal pocket keeps the water inside at 90-plus degrees year round. The caldera is privately owned and commercially operated for recreational use (most commonly swimming and scuba diving). Scuba instruction and certification are also available at The Crater.

Since this study attempted to test whether MLE influences authenticity, therapeutic engagement, and SNS, it was necessary for intervention to account for all seven components (two arena components and five experience phases) of the model. The study design attempted to include all the components of the MLEM. In the sections below, a detailed accounting of the model's components follows an overview of the intervention.

Meaningful learning experience. Scuba diving at The Crater was employed as this study's MLE. There were no prior diving experience prerequisites for participation. Completing pretest measures and passing a health questionnaire qualified participants to attend a free introductory diving instruction session and an approximately 20-30 minute, 15- to 35-foot dive at The Crater. Most participants signed up to dive with one or more fellow 12-Steps group members. Seventy out of the 75 participants reported never having dived before, with five participants having previous diving experience. Upon arrival at The Crater, participants were invited to swim at their leisure in the hot spring, while Certified Dive Instructors (CDI) prepared for instruction. Participants were instructed in groups of six or fewer and according to Discover Scuba guidelines. After instruction, participants in groups of three or fewer were invited to descend below the surface with an instructor by holding on to a fixed underwater rope line which led to a platform 20 feet beneath the surface. Nine of the 75 participants chose not to descend, but remained at the surface and watched the other divers. Divers who descended the rope and reached the platform were invited to let go of the rope and follow the instructor around The Crater and explore its features. The CDIs and group participant divers remained submerged for approximately 20 to 30 minutes at a depth between 15 and 35 feet.

Debrief. Within the first several minutes of resurfacing, the principal investigator (PI) invited divers to participate in a semi-structured debrief (based off of Flick's [2007] episodic

interview format; see DebriefScript in Appendix D). Most diving groups debriefed in the four-foot-deep training area in group sizes between four and six participants. The PI led the discussion and encouraged open dialog and attempted to involve all participants. Example debrief questions included (a) introduction: *rate your scuba experience here at The Crater with your thumbs (thumbs up = loved it; thumbs down = hated it; thumbs in between = neutral...or anywhere in between)*, (b) situational narrative: *how did you feel right as you were leaving the surface and beginning your official descent towards the first platform?*, (c) repisodes: *when other situations are similar to this scuba diving experience, novel, a little bit awkward, or risky or threatening, how do you usually cope or deal with the situation?*, (d) examples: *did you learn anything new or interesting about another member of this group that you would like to share that may be insightful or also interesting to that person or the group?*, (e) subjective definitions: *what did you learn about yourself during this experience?*, and (f) theoretical argumentations: *why do you think people act differently in a groups versus being alone?* Similar questions were asked as follow-up questions depending on responses. Addiction or treatment-related questions were not employed during the debrief. Following the debrief, participants were invited to continue debriefing, reenter the hot spring for leisure swimming, or conclude the treatment intervention and experience at The Crater.

Post intervention. Determining the amount of lag time between the intervention and posttest procedures is controversial in the literature. According to Raat, Mangunkusumo, Landgraf, Kloek, and Brug (2007), if participants take the follow up questionnaire immediately after the intervention, an exaggerated spike or primacy effect can occur, inflating the actual effect of the treatment upon the variable of interest. In contrast, a lengthy post-treatment delay can dampen results and misreport an intervention as non-influential, when in fact, the treatment

was significant. Therefore, the researchers of this study postponed posttest measures for two weeks following the participants' intervention to account for primacy and latency, justifying that two weeks was an intermediate time delay and would afford all participants the opportunity to attend at least two of their weekly 12-Steps meetings. Attending meetings prior to taking posttest measures allowed participants additional opportunities to glean meaningful insights, reconstruction, and growth. Participants were given six days from the two-week contact date to take the follow-up measures.

Accounting for MLEM components. This study went to great extents to make sure all seven components of the MLEM were included: (a) AR, (b) a group setting, (c) perceived risk, (d) feelings of awkwardness, (e) fractional sublimation, (f) reconstruction, and (g) allowing for growth. The following paragraphs explain how each model component was accounted for.

AR and group. Scuba diving in a natural hot spring inside a caldera meets all of the criteria for AR: it (a) takes place out-of-doors or in natural environment and (b) presents novelty, challenge, and uncertainty, especially for the 92% of participants who were first-time divers (Chase & Chase, 1996; Priest & Gass, 2005, Rossman & Elwood-Schlatter, 2008). In addition, scuba diving, leisure swimming, and group processing (debriefing) with other members of 12-Steps groups satisfied the model's call for a group-based setting.

Perceived risk. The observations of the PI, the structure of the debrief, and several anecdotal comments from the participants suggested the five experience phases were also accounted for. For example, each group debrief opened with statements and questions about participants' perceptions of risk. Even when accounting for participants who had previously scuba dived, not a single group's risk perception score (verbal report) averaged below a 6 (on a scale from 1 to 10; 1 = no risk at all, and 10 = I am certain I will lose my life if I continue). In

addition, several participants mentioned different phobias during the experience, such as fear of creatures in the water, fear of darkness, claustrophobia, fear of being unable to breathe or of choking, and fear of depth and sinking. Diving participants also reported certain levels of sensory deprivation and spatial disorientation, and a majority of the divers reported moments of panic. Thus, in spite of the gross subjectivity of risk perception, most participants appeared to experience reasonably elevated levels of risk perception at different points during the dive.

Awkwardness. Awkwardness was also observed, accounted for in the debrief, and audibly reported during scuba instruction, diving, and swimming. In the debrief, each group was asked a situational narrative question: How did you feel right as you were leaving the surface and beginning your official descent towards the first platform? Responses to this specific question included: “I probably looked so stupid,” “It was so weird,” and “I was thinking, why did I sign up for this, and you guys would have never let me live it down [if I didn’t dive].” One specific participant stated, “On the surface I felt so goofy, but when we went down, I turned into a little fish.”

Fractional sublimation. As noted in the literature review, it is often the immensity of the elements, natural surroundings, and indescribable and unexplainable experiences that compels participants to face their facades and sometimes painfully and even frustratingly process aspects of the sublime (Kant, 1982; Taniguchi et al., 2005). This actualization process, or fractional sublimation, likely took place introspectively throughout the intervention and tended to arise during four occasions: (a) as participants entered the door to the entrance tunnel to The Crater, (b) just before they began to descend the rope to the platform, (c) right as they resurfaced, and (d) during the debrief. One participant stated, right before she dived, “Will someone please take a picture of me before I dive? I want a picture of me now, and I want a picture of the new me at

the end, if I'm lucky enough to come up alive." Other participants stated, "I can't describe it, it's just so frustrating [trying to explain it]," and other related comments. Another announced, "How do I explain this to people? It's so freakin' cool and overwhelming."

Reconstruction and growth. The structure of the debrief provided participants a more formal setting to disclose personal observations about self and others. It is notable that the average debrief lasted longer than the intended 20 to 25 minutes, and on two different occasions, the PI became concerned about individuals' time constraints, but the group requested that the debrief continue, with one participant stating, "No, keep goin'! My brain needs more time to think about all of this." Furthermore, some group members made comments such as "I didn't know that, I should fix that," "Maybe that's the reason I got so pissed," and "Maybe I get quiet because I'm worried I'll say something wrong." It should also be noted that, at the conclusion of the intervention at The Crater, participants were encouraged to take some of their experiences back to their 12-Steps meetings and process the evening's events by sharing their insights with their groups. And though no data were collected during 12-Steps meetings, 94% of this study's participants attended two or more meetings after diving and prior to taking posttest measures. Hence, though the present study could have benefited from qualitative methods, anecdotal observations suggested most if not all participants, to a certain extent, navigated through the seven different components of MLEM, respectively.

Data Analysis Method

A nonequivalent control group design ($n = 75$) was used to test hypotheses. Participants who declined to complete the post-MLE measures ($n = 34$) served as the nonequivalent comparison group. Multivariate analysis of variance was used to test the preceding null hypotheses. Wilks lambda was used to evaluate effect sizes, and structure coefficients (correlations between original variables and the discriminant functions derived via MANOVA)

were calculated to identify the individual variables that were most strongly associated with the significant effects.

Due to the substantial loss of statistical power as compared to the original design, each hypothesis was tested at $p < .10$. Power was compromised due to the reduction in sample size from 120 to 75 participants. The original design was constructed such that power estimates met or exceeded .80. In contrast, post-hoc power from the multivariate analysis of variance of available data from the nonequivalent control group design was only .73 for the main effect of the MLE intervention and .15 for the time in 12-Steps treatment main effect. Post-hoc power of the MLE intervention by time-in-treatment interaction effect was .37. Type 2 error (failure to reject a false null) was thus a major concern. The consequences of concluding that this study's intervention condition was not effective were more substantial than concluding the intervention had an effect. MLE do not carry inherently damaging consequences, and participants may have experienced personal benefits for reasons other than those represented by the dependent variables in this study. Thus, the nontraditional alpha level of .10 was selected for omnibus hypothesis tests.

Results

The purpose of this study was to determine if MLE influences behavioral addicts' (a) authenticity (comprised of self-alienation, accepting external influences, and inauthentic living), (b) therapeutic engagement (comprised of treatment participation and satisfaction), and (c) perceptions of SNS (comprised of peer and social support). The analysis of the data is presented in this chapter according to the following topics: (a) descriptive statistics, (b) reliability of measures, and (c) hypothesis tests.

Descriptive Statistics

The study included 58 males and 17 females. The mean age and education level were 31 and 3+ years of college. Eighty-nine percent (89%) of the sample identified as Caucasian, 5.3% Hispanic, 2% Pacific Islander, and 2% other. Ninety-three percent (93%) of participants reported seeking treatment specifically for pornography addiction and 88% of the subjects participated in this study's intervention with an acquaintance, i.e., one or more fellow recovering addicts; however, only 19% reported diving with a direct member of their treatment group. Participants' mean time in 12-Steps treatment and average monthly attendance was 30.5 months ($SD = 3.48$) and 4 meetings per month, respectively.

Table 2 provides a summary of descriptive statistics of the AS and CEST subscales. The set of subscales from the CEST all had small negative skewness, and three of the four scales were slightly platykurtic. Visual examination of the data, however, suggested the distributions did not depart dramatically from normality. Among the three authenticity scale measures (derived from principal components analysis), inauthentic living had the largest skewness (-.73). Both self-alienation and inauthentic living produced kurtosis values in excess of .6 in absolute value (-.70 and .63, respectively). Skewness was influenced by a small number of outliers identified in the data. Inspection of the data indicated that two of the outliers were female participants in predominantly male 12-Steps and diving groups. In addition, a third outlier dived with five participants who had pre-established relationships and were attending the same 12-Steps addiction group. These outliers suggested group dynamics might have played an integral role in determining intervention effects.

Group means and Cohen's d values (effect sizes in the sample data) are reported in Table 3. The patterns of all seven mean differences were consistent with the theory presented in this study and a conclusion that the intervention yielded positive effects. As Stevens (1999) pointed

out, “[a]n effect size around .20 is considered small, an effect size around .50, medium, and an effect size $> .80$ is large” (p. 124). All effect sizes were greater than .02, but less than .50, and were thus considered “small to medium.” The largest effect size was for the measure of inauthentic living (.48).

Reliability of Measurement

Table 3 also provides internal consistency measures for the CEST scales constructed in a manner consistent with Classical Test Theory: peer support, social support, treatment satisfaction, and treatment participation. Alpha reliability coefficients for the measures of peer support, social support, treatment satisfaction, and treatment participation ranged from .78 (social support) to .87 (treatment participation).

In order to be consistent with previous research (Wood et al., 2008), a congeneric measurement model (differential weighting of items in calculating subscale scores) was used to measure the quality of the authenticity scale. Different from Classical Test Theory which assumes all the factors (or scale items in this case) in the measurement are alike, congeneric measurement assumes all factors (scale items) relate, however, it also explores how well different components group together via factor loadings (Joreskog & Sorbom, 2006). The matrix of correlations among authenticity items was analyzed through principal components analysis, and component scores were calculated and retained for hypothesis testing. Consistent with Wood et al. (2008), three components were extracted: self-alienation, accepting external influences, and inauthentic living. Internal consistency of those measures is reflected in loadings of individual items on the components that were extracted.

Results of the principal components analysis are presented in Table 4. The principal component analysis results from analysis of the authenticity scale items were fully consistent with Wood’s et al. (2008) study. Three components accounted for 73% of the variance. Four

self-alienation items had substantial loadings on the first component: *I feel out of touch with the real "me"* (.88), *I feel alienated from myself* (.86), *I don't know how I really feel inside* (.83), and *I feel as if I don't know myself very well* (.82). The second component had substantial loadings from four accepting external influences items: *I usually do what other people tell me to do* (.84), *I always feel I need to do what others expect me to do* (.83), *other people influence me greatly* (.81), and *I am strongly influenced by the opinions of others* (.78). A third component was also loaded by four inauthentic living items: *I am not true to myself in most situations* (.79), *I usually do not stand by what I believe in* (.77), *I do not live in accordance with my values and beliefs* (.77), and *I think it is better to be popular than to be yourself* (.56).

Hypothesis Tests

To justify the use of a nonequivalent control design, the seven pre-occasion measures and certain sociodemographic variables (age, race, etc.) for the "pre only" participants were compared to those of the "pre and post" participants. Results revealed no significant differences between the two comparison groups. This finding adds support to the assumption that the two participant groups were alike and worthy of comparison.

Results of the multivariate analysis of variance (MANOVA) are presented in Table 5. This analysis tested (a) the effects of the MLE intervention, (b) time in treatment, and (c) the interaction of the MLE intervention by time in treatment. The interaction effect and the main effect of time in treatment were nonsignificant. The main effect of the intervention, however, was found to be significant at $p < .10$ ($\lambda = .82$, $F(7, 65) = 1.98$, $p = .07$). To determine the relative impact of the intervention on the individual outcome variables, a structure matrix was calculated. Loadings (i.e., correlations between the outcome variables and the variate constructed by MANOVA to optimally discriminate between the groups) are reported in Table 5. Inauthentic living had the largest loading ($r = -.62$), followed by social support ($r = .54$) and peer support (r

= .38). All other loadings were less than .26. Note the MLE intervention group scored lower than the control group on the variable *inauthentic living*. This result was a positive, desired outcome because a high score on this variable equals less authentic living.

Discussion

The purpose of this study was to understand the relationship between AR and recovery principles pertaining to addiction treatment. Specifically, the study sought to determine if MLE influenced behavioral addicts' (a) authenticity (comprised of self-alienation, accepting external influences, and inauthentic living), (b) therapeutic engagement (comprised of treatment participation and satisfaction), and (c) perceptions of SNS (comprised of peer and social support). Although additional research is needed to further understand this relationship, this study's findings present evidence that AR (MLE) provides supplemental benefits to behavioral addicts seeking group-based treatment through 12-Steps programming. Specifically, results suggest that MLE decreases inauthentic living and enhances social and peer support. The following sections provide further dissemination of the study's results.

Findings

The study tested three research hypotheses:

H₀₁: Meaningful learning experiences do not affect addiction treatment outcomes: (a) authenticity (comprised of self-alienation, accepting external influences, and inauthentic living), (b) therapeutic engagement (comprised of treatment participation and satisfaction), and (c) perceptions of SNS (comprised of peer and social support).

H₀₂: Time in treatment does not affect the addiction treatment outcomes listed above.

H₀₃: Meaningful learning experiences and time in treatment do not interact in affecting the addiction treatment outcomes listed above.

Analysis resulted in the rejection of H₀₁, and the null was retained for both H₀₂ and H₀₃.

Multivariate analysis of variance revealed a significant difference ($p < .10$) between the intervention and nonequivalent control groups. These results suggest that AR positively impacts certain therapeutic outcomes in participants who identify as having a sexually related addiction. The most salient effects seem to be on inauthentic living, social support, and peer support. It is also interesting to note that all seven outcome variables changed in the direction that the literature and this study's rationale predicted; however, inauthentic living, social support, and peer support were most influential and noteworthy.

Relevance to Research

The findings of this study are relevant to addiction and recreation researchers for a few reasons. First, the study answers Carruther's (1999) call for research pertaining to recreation's influence on behavioral addiction treatment and recovery, and suggests that AR has therapeutic potential for various types of addicts, including those who are seeking behavioral addiction treatment. A handful of scholars are pursuing related research (specifically recreation and gambling addiction; Aquadro, 2008; Carruthers, 2006); however this is the first identified study of its kind, i.e., it examines AR's influence on sexually related or behavioral addictions.

In addition, based on the study's results, a reasonable case can be made for the value of the Meaningful Learning Experience Model as an additive treatment component for addicts seeking recovery. As hypothesized by Taniguchi et al. (2005), MLE appear to contribute to reported authenticity. It should be noted, however, the individual components of the MLEM need to be further developed in order to understand the model and its implications more fully. For example, if levels of risk perception, feelings of awkwardness, fractional sublimation, reconstruction, and individual growth were quantified, researchers could gain a greater understanding about the influence of individual model components on authenticity. With measurable model components, researchers could also account for and potentially decrease

individual variability and certain study biases, yielding more accurate interpretations of the influence of AR (as specified by the MLEM) on participants and addiction treatment.

The findings of this study, that recreation influences components of authenticity and SNS, also substantiate previous research. For example, Hood (2003) found that recreation participation was correlated with alcoholics' authenticity and self-learning, while Keesmaat (1998) stated that recreation promotes the development of social skills and support during drug treatment. Aames (2011) also reported authenticity developed trustfulness in self and others and was a key aspect of forming therapeutic alliances, and in a recreation-based study looking at authenticity and a genuine self, Houchin (2011) found authenticity predicted higher levels of group trust and cohesion. Therefore, previous research supports the results of this study, and the results of this study add support for findings of previous research.

It is interesting to note, however, the present study also introduces results that extend beyond what has been examined and reported in the past. Previous research suggests AR is beneficial for addicts in recovery for several reasons; however, AR influencing a mediating variable, i.e., authenticity as the mediator between recreation and SNS, has not been analyzed. This study's design recruited SA members out of their respective meetings and introduced them to an AR intervention that was irrespective of their individual treatment groups. In other words, subjects signed up for diving times and participated in the intervention based upon individual convenience and not in conjunction with their respective treatment groups. Eighty-eight percent of the participants did report diving with a friend/acquaintance or a fellow recovering addict; however, only 19% participated with a direct member of their treatment group. Therefore, perhaps increases in peer and social support could be explained, not only by group members recreating together, as previous research suggests, but also by individual or authentic changes

that occur during MLE. In other words, this study supplies evidence that increases in authenticity may act as a mediating variable to certain therapeutic variables, such as SNS and therapeutic engagement.

Relevance to Practice

In addition to benefiting research, this study also has relevance in practice. The findings suggest multidimensional treatment methods, specifically AR, have certain supplemental and therapeutic benefits for individuals seeking treatment for addictive behaviors that traditional talk therapies and treatments may not be able to provide. More specifically, these results suggest 12-Steps attendees can benefit additively from group-based AR experiences because MLE seem to afford addicts decreases in inauthentic living and increases in peer and social support. Therefore, the findings begin to provide clinicians and recovering addicts with specific programming components (i.e., experience phases; perceived risk, awkwardness, fractional sublimation, etc. and experience arenas) that can augment therapeutic outcomes.

However, alternative explanations for the observed phenomena should also be considered. During the early phases of conceptualizing this study, some concern was expressed by researchers about a scuba diving experience not providing participants with enough perceived risk, awkwardness, and fractional sublimation to have an impact. However, researchers involved in this study have since considered that just the opposite might be true. The Homestead Crater was such an exceptionally unique research lab that the observed outcomes might be less about AR or the MLEM, and more about the uniqueness and overwhelming sensations that accompany being a first-time diver in the mouth of a volcano. Perhaps considering the biophilia hypothesis and the awe and wonder that accompany the grandeur of natural phenomenological settings could add richness and understanding to the present results.

Limitations

In addition to insightful results, the present study had several noteworthy limitations. First, logistical concerns arose during recruitment and created several methodological constraints. Only 75 of the 120 originally planned participants could be recruited after some participants expressed that they felt recruiting methods violated some of the twelve traditions. Second, the pre- to posttest attrition rate was substantial, which limited the comparison group design. Limitations in recruiting and attrition resulted in substantial loss of statistical power and also yielded notable threats to the internal validity of the original design. Adopting a new nonequivalent control group design accounted for some of these constraints but presented new limitations. For example, it had to be assumed that the two comparison groups were alike and similar enough to compare. It is also notable that use of the nonequivalent control group design yielded threats to the internal validity of the experiment. Threats of history, maturation, attrition, testing, and selection bias were evaluated as a result of the compromised design (Campbell & Stanley, 1966; Maxwell & Delaney, 2004). And third, mixed-methods designs, i.e., qualitative techniques and transcriptions of the debrief, were not employed in this study. Qualitative data could have assisted researchers in empirically examining participants' experiences with the various phases of the MLEM.

Future Research

Although the present study provides valuable information, several questions about the relationship between AR and behavioral addiction still remain. For example: do the components of the MLEM influence participants if a different AR venue (rock climbing, backpacking, spelunking, etc.) is utilized, or was it the uniqueness of The Crater that accounted for the study findings? In other words, though the activity components might match those prescribed by the MLEM, do the actual activity and setting make a difference? A second issue for future

researchers to consider is the sequence of relationships between AR (via the MLEM) and the outcome variables and the individual AR experience (outside the addict's treatment context) versus AR experiences within the group treatment context. In other words, how are recovery outcome variables influenced differently by an in-treatment AR experience as opposed to an out-of-treatment AR experience? A third question for future research is, does AR have treatment application across various types of addictions (gaming addiction, eating disorders, etc.)? In addition, it would be useful to look at the residual effects of the AR experience on authenticity and addiction treatment outcome variable past two weeks. Do these effects, specifically inauthentic living, social support, and peer support, extend into week three and beyond? Perhaps most importantly, and as mention above, studies should also attempt to quantify the individual components of the MLEM to give researchers a fuller understanding about the components of AR that tend to influence authenticity and individuals in addiction recovery.

Summary

The present study provides some valuable answers about AR and the addiction treatment process. Namely, the study's quantitative findings suggest AR (as defined by the MLEM) positively impacts certain therapeutic outcomes in participants who identify as having a sexually related addiction. A significant difference was found between participants in the intervention group and the nonequivalent control group, and all seven outcome variables changed in the predicted direction, with inauthentic living, social support, and peer support being most noteworthy and influential. Therefore, there is support for the position that AR and the MLEM have potential for therapeutic value among individuals seeking remediation and recovery from behavioral addiction.

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Tables

Table 1

16 Program-Level Alpha Reliability Coefficients for the CEST Instrument

Program-Level Indicator	α	Program-Level Indicator	α
Tx Motivation		Social Functioning	
1. Desire for Help	0.88	9. Hostility	0.91
2. Tx Readiness	0.90	10. Risk Taking	0.87
3. Tx Needs	0.90	11. Social Consciousness	0.71
Pressures for Tx Index	N/A	Therapeutic Engagement	
Psychological Functioning		<i>12. Tx Satisfaction</i>	<i>0.88</i>
4. Self-Esteem	0.91	13. Counseling Rapport	0.96
5. Depression	0.87	<i>14. Tx Participation</i>	<i>0.92</i>
6. Anxiety	0.93	Social Network Support	
7. Decision Making	0.87	<i>15. Peer Support</i>	<i>0.94</i>
8. Self-Efficacy	0.80	<i>16. Social Support</i>	<i>0.84</i>

Note. Tx = treatment, and the program-level factors of interest for this study are italicized.

Table 2

Descriptive Statistics

<i>Between Subjects</i>					
Variable	<i>N</i>	Mean	S.D.	Skewness	Kurtosis
Client Eval. of Self & Tx					
Peer Support	75	20.19	3.07	-.10	-.73
Social Support	75	36.24	4.71	-.36	.21
Treatment Satisfaction	75	27.81	3.91	-.47	-.03
Treatment Participation	75	48.73	6.15	-.32	-.71
Authenticity Scale ¹					
Self-Alienation	75	0	1.00	.25	-.69
Accepting External Influences	75	0	1.00	.09	-.17
Inauthentic Living	75	0	1.00	-.73	.63

¹Authenticity scale scores are principal components

Table 3

Effect Size and Reliability Analysis

Variable	<i>N</i> items	Tx Mean	Control Mean	<i>D</i>	α
Client Eval of Self & Tx					
Peer Support	5	20.61	19.68	.30	.84
Social Support	9	36.02	34.74	.27	.78
Treatment Satisfaction	7	28.22	27.32	.23	.81
Treatment Participation	12	49.61	47.68	.31	.87
Authenticity Scale					
Self-Alienation	12	-.08	.1	.18	*
Accepting External Influences	12	.01	-.01	.02	*
Inauthentic Living	12	-.22	.26	.48	*

*Authenticity measures are derived from principal components analysis. They are congeneric measures, so alpha reliability coefficients are not reported (Joreskog & Sorbom, 2006). Loadings are reported in Table 4.

Table 4

Authenticity Scale Principal Components

Item	Self- Alienation	Accepting External Influences	In- authentic Living	Communalities
10. I feel out of touch with the real me.	.88	.13	-.21	.84
12. I feel alienated from myself.	.86	.13	-.27	.82
2. I don't know how I really feel inside.	.83	.17	-.12	.73
7. I feel as if I don't know myself very well.	.82	.35	-.14	.82
4. I usually do what other people tell me to do.	.07	.84	-.04	.72
5. I always feel I need to do what others expect me to do.	.24	.83	.02	.74
6. Other people influence me greatly.	.17	.81	-.04	.69
3. I am strongly influenced by the opinions of others.	.27	.78	-.16	.70
9. I am not true to myself in most situations.	-.29	-.16	.80	.74
8. I usually do not stand by what I believe in.	-.36	-.05	.77	.73
11. I do not live in accordance with my values and beliefs.	-.14	.09	.77	.62
1. I think it is better to be popular than to be yourself.	.33	-.47	.56	.64
Eigen Value (% Variance)	3.36 (28.03%)	3.09 (25.78%)	2.31 (19.21%)	8.76 (73.02%)

Table 5

Hypothesis Tests: Multivariate ANOVA Results & Structure Matrix

Effect	Wilks'			
	Lambda	df	F	p
Intervention	.82	7, 65	1.98	.07
Time in Treatment	.96	7, 65	.35	.93
Intervention by Time in Treatment	.91	7, 65	.94	.48
Structure Matrix	R			
Peer Support	.38			
Social Support	.54			
Tx Satisfaction	.14			
Tx Engagement	.26			
Self-Alienation	-.12			
Accepting External Influences	-.15			
Inauthentic Living	-.62			

Figures

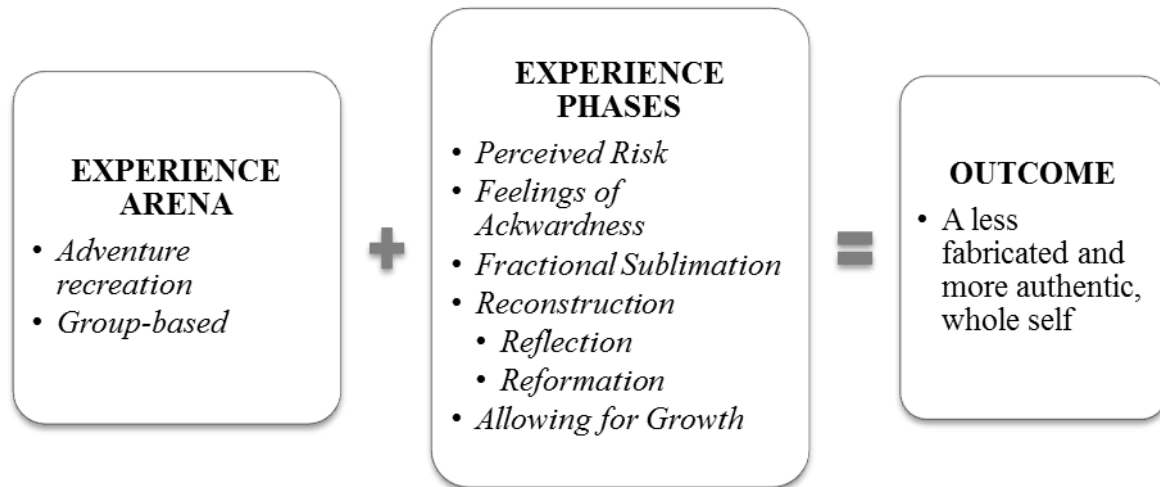


Figure 1. The Meaningful Learning Experience Model (Taniguchi et al., 2005) suggests if a subject participates in a group-based AR experience that accounts for five attribute phases, that person will exit less fabricated and more authentic.

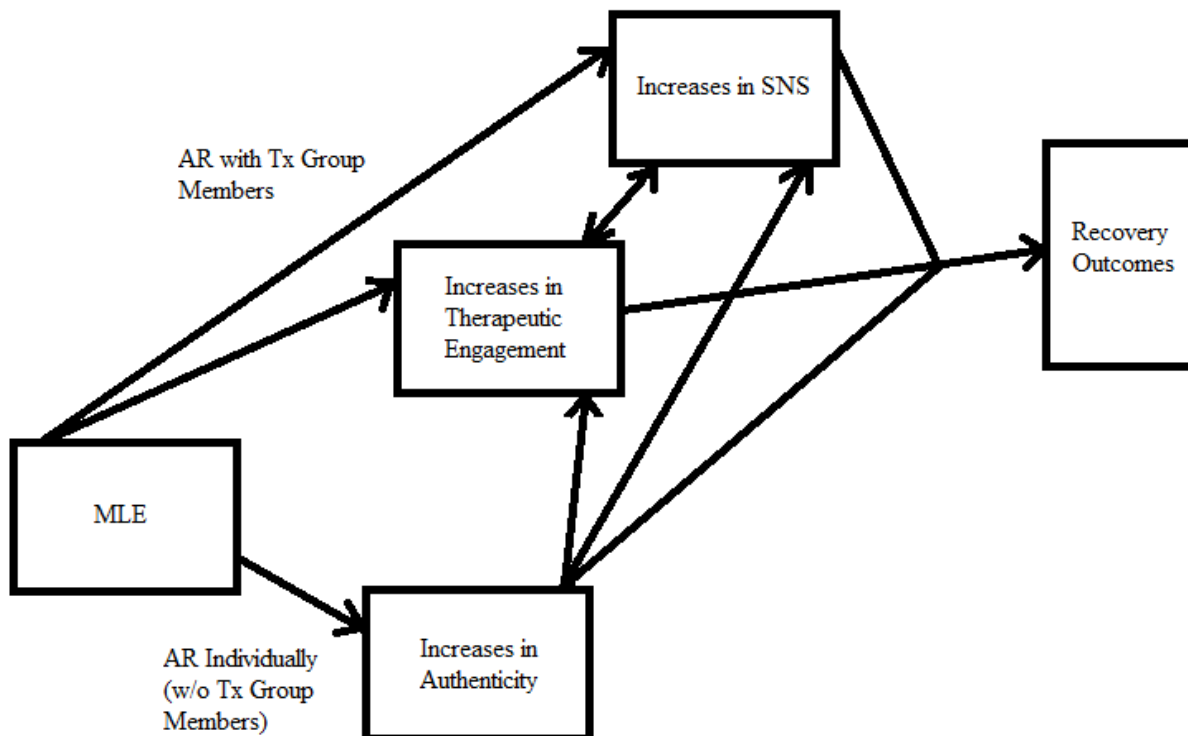


Figure 2. The intricate pathways and variable relationships as presented in the AR and addiction remediation literature.

Body of Work and Appendices

Appendix A: Prospectus

An increasing number of people are being overexposed to and becoming entangled in addiction—“the leading public health problem in America” (Coombs, 2004, p. xiii). *Drug* addiction, however, is not the only issue at hand, for *behavioral* addictions (pathological dependencies on behaviors such as sex, Internet or pornography usage, video gaming, eating, gambling, etc.) are also insidious in their own right and must be considered (Carruthers, 1999; Goodman, 2008; Grant, Potenza, Weinstein, & Gorelick, 2010). As an example, the National Association of *Anorexia Nervosa* and *Associated Disorders* (2011) noted 1 in 5 women manifested addictive forms of anorexia or bulimia. Furthermore, the average American boy views 50 pornographic clips per week (Zimbardo, 2011), contributing to the projected 25 million Americans who meet the criteria for cyber-sex addiction (The Society for the Advancement of Sexual Health, 2011).

Adventure recreation (AR) has been suggested as one remedial modality for substance-related addictions (Armitage, Lyons, & Moore, 2010; Baker, Harding, & Hadwen, 1994). Scholars report AR influences recovery from drug addiction in numerous ways (Armitage et al., 2010), such as reaffording sober leisure (Mooney, Eisenberg, & Eisenberg, 1992) and positively influencing behavioral and attitudinal change (Hwang, 2002; Priest & Gass, 2005). Furthermore, AR in a group setting is reported to increase authenticity (Hood, 2003; McEvoy & Buller, 1997; Taniguchi, Freeman, & Richards, 2005), strengthen relationships and social support (Hatch, 2006; Keesmaat, 1998), and influence therapeutic engagement in treatment settings and recovery groups (Bennett, Cardone, & Jarczyk, 1998; Demetrius, Ja, & Wilson, 2010; Kostopoulos, 2000). In short, the literature confirms AR as a therapeutic resource, with specific evidence-based benefits for individuals seeking substance-related addiction remediation.

Carruthers (1999), however, in her review of gambling addiction (an example of a behavioral addiction), exposed a hole in the literature. She stated empirical evidence was incomplete, as studies evaluated recreation's influence upon recovery from alcoholism and drug-related addictions, but forsook the therapeutic benefits of recreation on *behavioral* addictions. Few, if any, empirical studies have tested recreation's therapeutic value on sex addiction, video gaming addiction, eating disorders, pathological gambling, etc. Therefore, Carruthers suggested more research is needed in this area.

However, the Meaningful Learning Experiences Model (MLEM) (Taniguchi et al., 2005) contributes to the present discussion because it offers an explanation for *how* AR influences the treatment of addiction. The MLEM suggests group-based AR participants who experience five attribute phases (i.e., perceived risk, feelings of awkwardness, factional sublimation, reconstruction of self-image, and growth) will shed psychological facades, increase in authenticity, and therefore assign meaningfulness to their learning experience—which “go beyond just learning something... [they] guide people's perceptions of who they really are and what they are capable of” (Taniguchi et al., 2005, p. 136). And consequently, authenticity and AR have both been reported to set the foreground for a more intentional therapeutic experience (Hood, 2003), as they tend to positively influence certain group addiction treatment variables, such as therapeutic alliances, networks of social support (Aames, 2011), and variables related to an addict's engagement in treatment (Keesmaat, 1998; Van Deurzen, 2002).

Although studies looking at the relationship between AR and behavioral addiction treatment and recovery are absent, addicts in treatment who participate in meaningful learning experiences (MLE) together (as outlined by the MLEM) will likely report numerous therapeutic benefits, such as increases in *authenticity* (Houchin, 2011; Taniguchi et al., 2005), *therapeutic*

engagement, and *social network support* (SNS) (Demetrius et al., 2010; Hatch, 2006; Kostopoulos, 2000). This rationale, however, will remain hypothetical unless it is empirically tested.

Statement of the Problem

Therefore, the problem of the study is threefold:

1. To determine if MLE influence a *behavioral* addict's ability to be more *authentic*.
2. To determine if MLE influence certain *therapeutic engagement* attributes for *behavioral* addicts enrolled in treatment programming.
3. To determine if MLE influence a *behavioral* addict's perceptions of *SNS*.

Hypotheses

Authenticity, *therapeutic engagement*, and *SNS* are the dependent variables of interest in this study. The *therapeutic engagement* and *SNS* domains both collapse into two separate program-level indicators. *Therapeutic engagement* comprises the factors *treatment participation* and *treatment satisfaction*, and *SNS* includes the indicators *peer support* and *social support*.

Therefore, this study was designed to test the following 5 hypotheses at the factor level:

MLE – authenticity H_0 .

H_{01} : There is no effect difference between addiction group members who *participate* in MLE and addiction group members who *do not*, and reported *authenticity*.

MLE – therapeutic engagement H_0 s.

H_{02} : There is no effect difference between addiction group members who *participate* in MLE and addiction group members who *do not*, and reported *treatment participation*.

H_{03} : There is no effect difference between addiction group members who *participate* in MLE and addiction group members who *do not*, and reported *treatment satisfaction*.

MLE – SNS H₀s.

H₀₄: There is no effect difference between addiction group members who *participate* in MLE and addiction group members who *do not*, and reported perception of *peer support* within the group.

H₀₅: There is no effect difference between addiction group members who *participate* in MLE and addiction group members who *do not*, and reported perception of *social support* outside the group.

Importance of the Study

Addiction is “the leading public health problem in America” (Coombs, 2004, p. xiii) and the subdomain of *behavioral* addiction is grossly under-researched. And though our nation’s malign relationship with addiction is ubiquitous and well established, our understanding of pathological and behavioral dependencies are not much past infancy (Grant et al, 2010). Very little is actually known about addiction, an addict’s brain, or to what degree certain treatments or therapies are responsible for recovery (Simpson, 2004; Hser & Anglin, 2011). Exploring the relationship between AR and behavioral addiction treatment will not only directly answer Carruthers’ (1999) impetus for further research, but it will also render scholars, clinicians, addicts, and supporters alike further awareness and predictability information. Perhaps most importantly, however, research in this area might well advance the healing, treatment, and recovery process for those who are tangled in the tentacles of addiction.

Purpose of the Study

Using recreation as a supplemental treatment modality for behavioral addiction has had little, if any, genuine attention (Carruthers, 1999). In addition, the MLEM is a rational framework needing further development. An empirical investigation testing if MLE influence

authenticity, therapeutic engagement, and SNS (among behavioral addicts) will not only satisfy the academy's call for further understanding, but it will also advance the development of a theory-based model.

Delimitations

The scope of this study is delimited to the following:

1. A sample size of 120 participants between the ages of 18 and 55.
2. Participants residing in a major western-state metropolitan area who are seeking addiction treatment through 12-Steps programming.
3. Participants with a specific type of behavioral addiction—sexual addiction (manifesting through unhealthy and compulsive dependence on behaviors such as sex, pornography usage, masturbation, sexual anorexia, etc.).
4. Participants who have access to Qualtrics (a web-based survey suite) and an email account.
5. Self-reported survey data, the designated MLE, and researcher interpretations.
6. The dates and duration of data collection (spring of 2012).

Limitations

This study is limited to the following:

1. The preexisting degree to which participants naturally and forthrightly engage in treatment.
2. The type, amount, and degree of sexually-oriented behaviors participants view as addictive and/or debilitating and desire to cease..
3. The multilayered and predetermined nesting of 12-Steps memberships and accompanying faction affiliations (i.e., criteria related to addiction orientation, faction variations,

demographics, availability, time spent in recovery, years of sobriety, therapeutic milieu, and other like factors).

4. The participant's degree of perceived risk towards the assigned MLE.

Assumptions

The study will be conducted upon the following assumptions:

1. All addictions, regardless of the substance or behavioral orientation, share underlying biopsychological processes and therefore behave similarly and respond likewise to various treatment modalities (Goodman, 2008; Smith & Seymour, 2004).
2. The 12-Steps factions Sexaholics Anonymous and The Church of Jesus Christ of Latter-Day Saints' Sexaholics Anonymous are highly homogeneous: only subtle, nonsignificant differences exist.
3. The more an addict engages in formal group-based treatment (as opposed to self-help and isolated practices), the better remedial outcomes will be (White, 1998).
4. Sexual behaviors (e.g., viewing pornography and masturbation), have potentially addictive qualities and, when pathological, can be classified as behavioral addictions.
5. Because of the AR and group-based components presented in the MLEM, MLE are inherently and therapeutically beneficial.
6. Participants will have good intentions and desire recovery and as such contribute constructively in treatment and to the group dynamic.
7. Despite the sensitive nature of the questionnaire and/or personal vulnerability, participants of this study will engage openly and honestly, answering all questions truthfully, not influenced by social desirability or fear of a breach in confidentiality.

Review of Literature

Addiction research may well be our era's most dynamic field of scientific inquiry (Goodman, 2008), and this past decade has brought a surge of understanding to the forefront. Yet, in the face of recent advancements, some suggest addiction research is still in early stages of development (Grant et al., 2010). More specifically, *behavioral* addiction (different from *drug* addiction) remains under-researched and implicit (Thalemann, Wölfling, & Grüsser, 2007). Examples of behaviors with addictive potential include gambling, sexual activity, Internet or pornography usage, video gaming, eating patterns, and even tanning. In the United States, addictive behaviors are not only widespread, but are also on the rise, with an approximate 2% increase per year (U.S. Department of Health and Human Services, 2010). Such reports plead for action (Kourosch, Harrington, & Adinoff, 2010; Reynaud, Karila, Blecha, & Benyamina, 2010), and it is the intent of this literature chapter to review the abundant body of addiction research and outline theoretical concepts pertaining to addiction and recovery, namely remediation through meaningful learning experiences.

Addiction

According to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) (American Psychiatric Association, 2000) and the World Health Organization (1992), addiction is present if a person can answer yes to three of the following seven criteria:

- h) *Tolerance*. Has your use or participation increased over time?
- i) *Withdrawal*. When you stop using or participating, have you ever experienced physical or emotional withdrawal (symptoms such as irritability, anxiety, mood shifts, shakes, sweats, nausea, or vomiting)?

- j) *Difficulty controlling your use.* Do you sometimes use more or participate for longer amounts of time than originally intended?
- k) *Negative consequences.* Have you continued to use or participate despite negative consequences to your mood, self-esteem, health, job, or family?
- l) *Neglecting or postponing activities.* Have you ever put off or reduced social, recreational, work, or household activities because of your use or participation?
- m) *Spending significant time or emotional energy.* Have you spent a significant amount of time thinking about, obtaining, using, concealing, scheming, minimizing, or recovering from your use or participation?
- n) *Desire to cut down.* Have you thought about cutting down or controlling your use or participation *and* had unsuccessful attempts to cut down or control your use or participation?

Though the current diagnostic system has its advantages, one does not read far into the seven criteria before recognizing that labeling addiction is weighted with anomalies and quite abstruse. For one, many nonaddicts with a heightened behavior could answer yes to several of the seven criteria and therefore be misdiagnosed as addicted, when addiction is not present. Moreover, the DSM-IV identifies certain addictions and compulsions (e.g., substance abuse, gambling, eating disorders, kleptomania, and hoarding), but leaves Internet, pornography, video gaming, and sexual addictions unmentioned or *not otherwise specified* (NOS) (American Psychiatric Association, 2000; Grant et al., 2010). Such omissions make it difficult for practitioners and individuals seeking remediation to determine when a behavior is habitual, compulsive, or addictive.

Amid the ambiguity and debates, however, two clear distinctions are generally accepted among most addiction researchers; that is, addiction can be teased apart into two subcategories: substance-related and behavioral addictions. *Substance-related addictions* require psychoactive substances be administered into the body (American Psychiatric Association, 2000). *Drug addiction, substance abuse, chemical dependency, and substance-related addiction* are by and large synonymous terms, as they attribute compulsive and habitual usage to psychoactive substances. A *psychoactive substance* is any drug or chemical that, if taken into the body, crosses the blood-brain barrier and influences cognition via perception, mood, or affect (Miller & Plant, 2010). Psychoactive substances come in many forms but are divided into eight overarching categories: depressants, stimulants, opiates, hallucinogens, cannabinoids, anabolic steroids, inhalants, and prescription drugs (National Institute, 2009). Nicotine and alcohol are examples of psychoactive substances, as are *harder* drugs such as heroin and cocaine. Caffeine and most over-the-counter and prescription medications such as Vicodin, Ritalin, and even ibuprofen are also examples of psychoactive substances with addictive potential.

Behavioral or natural addictions, the second sub-classification of addiction, differ from drug addictions because psychoactive substances are not the sources of stimuli. Instead, specific behaviors are the source of stimulation and are responsible for igniting the pleasure-reward pathway (the limbic system) in the brain (Doidge, 2007; Hilton, 2010; Kourosh et al., 2010). Zimbardo (2011), who prefers the term *arousal addiction*, reported behavioral addiction is induced and also maintained by experiences of novelty and variety. Therefore, instead of seeking out more of the same, as with a heroin user who seeks the same form of heroin to *get high*, behavioral addicts desire unique alternatives for maintained arousal. As an illustration, a person with a cyber-sex addiction does not tend to revisit the same pornographic clips, but

sustains arousal by exploring various pornographic sub-genres (e.g., teen, interracial, or animated pornography—three examples among many hundreds of sub-genres) (“List of pornographic,” 2011).

Although more attention and concern is generally directed towards drug addiction, behavioral addictions are unique and perilous in their own right. For instance, the signs and symptoms of behavioral addictions are generally more concealable, earning them the title *invisible addictions* (Morgan, 1996; Wexler & Wexler, 2004; Wilson, 1999). In general, invisible addicts do not display the same degree of flagrant physical markers, as with alcoholics who exhibit beer-soaked breath or intravenous drug users who have forearm track-marks. Thus, it is argued that invisible addicts can more easily cloak addictive signs and symptoms. Moreover, invisible addictions are considered more pervasive than drug addictions because they are more socially acceptable, oftentimes more easily and instantaneously accessed, relatively inexpensive, and therefore, also introduced to younger and more vulnerable populations.

Pornography, defined here as media used or intended to increase sexual arousal (Carroll et al., 2008), is a good example of a behavioral addiction with invisible traits. Pornography is highly addictive (Doidge, 2007; Hilton, 2010; Paul, 2005), it is becoming more socially acceptable (Eberstadt, 2010), it can be accessed in almost any home at the click of a mouse, it is affordable (Carroll et al., 2008) and oftentimes free, and, on average, at eleven years of age, children have already been exposed numerous times to this stimulus (Wolak, Mitchell, & Finkelhor, 2007). Because of the qualities accompanying behavioral addictions, invisible addicts may be at greater risk than many substance abusers, for by the time they are discovered and/or help arrives, addiction may be too deeply entrenched and invasive for willpower or ad interim solutions to suffice.

Yet, in spite of the distinctions between substance-related and behavioral addictions, there is a growing body of evidence in the behavioral sciences suggesting both subcategories of addiction are strikingly similar in natural history, phenomenology, and adverse consequences (Grant et al., 2010). Case in point, both types of addicts experience chronic relapse patterns and spontaneous quitting without formal treatment (Slutske, 2006). In addition, both drug and behavioral addicts often report arousal and/or tension prior to committing *the act* and immediate relief and pleasure when *the act* is committed (American Psychiatric Association, 2000). Furthermore, as addiction progresses, behavioral and drug addicts tend to experience less pleasure (egosyntonicity) and more compulsion (egodystonicity); in other words, addicts from both subcategories are motivated more by negative reinforcement and less by positive reinforcement (Brewer & Potenza, 2008; Potenza, Koran, & Pallanti, 2009). And the commonalities continue, for both types of addicts report forms of tolerance and withdrawal (Grant, Brewer, & Potenza, 2006; Grant et al., 2010) and often go to great extents, even illegal and antisocial behaviors (e.g., lying, theft, embezzlement, writing bad checks, etc.), to satisfy their addiction (Ledgerwood, Weinstock, Morasco, & Petry, 2007). In short, striking similarities between addiction typologies is a key finding in the behavioral sciences because it sets the foreground for different types of addictions to be treated in similar fashions.

Addiction Treatment

While the ill effects and pervasiveness of addiction are concerning, there is also great promise for addicts seeking treatment and recovery. The questions are then posed: what sustains remediation and what keeps an addict engaged in recovery? Washton and Boundy (1990) suggest there is more to recovery than desire, motivation, and a change of heart; for self-help factors will simply not suffice. Addicts attempting to recover must also employ more formal and

collective treatment practices so the burdens of addiction can be distributed and shared by others (Gladwell, 2005). *Formal/collective treatment practices* are any addiction-treatment method which employs resources for recovery outside of or in addition to self-help or personally motivating practices (i.e., relying on willpower, self-restraint, or self-control alone). Timothy Sheehan, an addiction psychologist, confirmed this line of thinking when he stated, “If you have an addiction that has multidimensional causes and impact you need a multidimensional treatment approach” (personal communication, November 4, 2011). Therefore, though willpower and personal desire (internal motives) are encouraged and beneficial, meaningful and sustained addiction recovery must also include engagement in formal and collective treatment practices.

However, attempting to create a list of treatment modalities that sustain recovery introduces another layer of complexity, for it is not entirely clear to what degree specific practices account for the recovery process. Simpson (2004) offers a fitting retrospection about this complexity by citing Jaffe (1979), one of the first visionaries who studied the process of treatment and recovery:

The evidence is overwhelming that while in treatment in a variety of programs, and for varying periods thereafter, a significant proportion of drug users (addicts) exhibit substantial improvement in a number of areas. What is still at issue is not that change occurs, but rather the degree of change which can be attributed to the treatment process. (p. 9)

Thirty-plus years following Jaffe’s conclusion, researchers generally confirm, due to social factors and individual variability, not much has changed (Simpson, 2004; Hser & Anglin, 2011).

Over the years our understanding of addiction and treatment has developed and improved

(White, 1998), but it still remains debatable what percentage of recoverability can be attributed to various treatment practices or other factors.

Authenticity. Yet, in spite of this disclaimer, certain principles contribute to sustained remediation more convincingly than others. Three prominent components emerge from the literature: authenticity, social network support, and therapeutic engagement. *Authenticity* is being fully aware in the moment, accepting responsibility for personal choices and actions, and accepting the possibilities as well as the limits of existence (Aames, 2011). Also referred to in the literature as *self-disclosure*, authenticity sets the foreground for sustained recovery, as it deepens therapeutic engagement (Van Deurzen, 2002), develops trustfulness in self and others, and is key to forming therapeutic alliances (Aames, 2011). Case in point, Houchin (2011), in a recreation-based study looking at authentic leaders in organized sports, found authenticity predicted higher levels of group trust, cohesion, and performance, key ingredients for addicts in group-based recovery. Some researchers have even inferred the therapeutic process approaches meaningless if authenticity is not present (Aames, 2011; Van Deurzen, 2002). Therefore, among the many addiction treatment factors available for consideration, authenticity is a foundational principle for sustained remediation.

Social network support (SNS). According to Garner, Knight, Flynn, Morey, and Simpson (2007) and Joe, Broome, Rowan-Szal, and Simpson (2002), another foundational principle for achieving sustainable recovery is a network of social supporters. *SNS* is defined as the ability to link up with, seek support from, and offer support to others on the basis of commonly agreed standards and goals (Garner et al., 2007; Joe et al., 2002; Mettler & Rohner, 2009). Simpson (2004) collapses SNS into two domains: peer and social support. *Peer support* accounts for the relationships established within the addiction recovery support group (e.g.,

fellow 12-Steppers). *Social support* refers to the relationships established with friends and family members outside of the treatment group.

A supportive social network has long been regarded as an important locus for behavioral reinforcement (Litt, Kadden, Kabela-Cormier, & Petry, 2009). If people in a social sphere are casual drinkers, it is likely inductees will also adopt casual or social drinking (Project MATCH, 1997). Likewise, if surrounded by friends or family who promote the cessation of a behavior, individuals are significantly more likely to at minimum decrease the behavior, but more commonly expire it altogether (Kelly et al., 2010; Tiburcio, 2008). In addition, Hatch (2006), in a study about outdoor recreation's influence on interpersonal relationships, found teamwork was one of the only response variables being sustained over time, and Berscheid (2003) concluded the reason SNS (or teamwork) is so imperative to sustained behavioral change, and subsequently prolonged recovery from addiction, is because a human's greatest strength is other humans.

12-Steps programming. One of the more predominant examples of people relying on other people, or SNS in addiction treatment, is 12-Steps programming. 12-Steps programming is a set of guiding principles outlining a course of action for recovery from addiction and/or compulsion. Temperance clubs and societies date back to the Washingtonian Movement in the late 1700s, however, it was not until 1935 that Bill Wilson and Dr. Bob Smith founded Alcoholics Anonymous (AA) and 12-Steps programming—the most involved, universally accepted, and profound mutual-aid movement in history (White, 1998). Three-quarters of a century later, 12-Steps methods provide the foundation for numerous addiction recovery factions (AA, Narcotics Anonymous [NA], Sexaholics Anonymous [SA], etc.), with 25 million Americans regularly attending these types of groups for addiction recovery support (Kessler, Mickelson, & Zhao, 1997).

Compared with other treatment modalities, 12-Steps programming works exceptionally well because of the network of social support built within. In fact, so effectual are 12-Steps programs, the American Psychiatric Association (APA) (2000) officially recognizes them as one of the most robust venues for addiction treatment. The following six AA philosophies hint as to why:

1. Admitting one cannot control one's addiction or compulsion
2. Recognizing a higher power as a source of greater strength
3. With the help of a sponsor (experienced member), examining past errors related to addictive patterns
4. Making amends for the accompanying errors
5. Learning to live a new life with a new code of behavior
6. Helping and supporting others who suffer from the same addictions or compulsions

Three of the six items are directly relationally-oriented. Therefore, 12-Steps' success, both in attendance and in sustaining recovery, is strongly associated with SNS—what the literature also refers to as *kinship in common suffering*, or what fellow 12-Steppers have tagged as sponsorship (Galanter & Brook, 2001; White, 1998). More simply put:

An alcoholic [addict] could lose his [or her] job and his family, he could be hospitalized, he could be warned by half a dozen doctors—and go on drinking [using/participating]. But put him in a room of his peers once a week—make him share the burdens of others and have his burdens shared by others—and he could do something that once seemed impossible. (Gladwell, 2005, p. 351)

Be it family, friends, clinicians, teammates, mentors, or fellow 12-Steppers, research confirms a network of invested relationships, or SNS, makes the difference between ad interim symptom relief and sustainable remediation from addiction.

Therapeutic engagement. In addition to authenticity and SNS, much scientific attention has also been given to a third treatment principle—*therapeutic engagement*—because of its influence on sustained addiction recovery. According to Simpson (2004), therapeutic engagement is affected by treatment satisfaction (Stiles et al., 1994) and treatment participation. *Treatment satisfaction* is defined as happiness with the overall philosophies, services, and convenience of the addiction treatment programming. *Treatment participation* is defined as the extent to which addicts use and apply treatment resources, contribute in and to group meetings, and essentially assume the role of *addict-in-recovery*.

Therapeutic engagement is encouraged for those in recovery because addicts with greater engagement practices are twice as likely to develop enduring therapeutic relationships, with both practitioner/facilitator and other treatment group members (Kolden, 1996; Simpson, 2004). Therapeutic engagement is also correlated with retention and is positively associated with indices of therapeutic outcomes, including cognitive understanding and problem solving skills (Stiles et al., 1994). In short, researchers note that as therapeutic engagement increases, so do desired treatment outcomes and sustained recoverability for individuals with addictions.

Group treatment. Amid the various treatment modalities available, group treatment appears to be, above all, the method of choice for *all* addictions (Flores, 1997). For the purposes of this study, *group treatment* is defined as an assembly of two or more people who have established a safe and cohesive milieu for addiction recovery, with a leadership structure at the onset, development of a working alliance, conflict resolution, and termination (Pressman,

Kymissis, & Hauben, 2001). Decades of research have reported group-based treatment as an effective modality for substance-related addictions, such as alcoholism (Kouimtsidis & Ford, 2011), heroin addiction (Zucker & Waksman, 1972), prescription medication addiction (Byrne, Lander, & Ferris, 2009), and others. In addition, group-based treatment has also been well substantiated with behavioral addictions. Studies have looked at Internet addiction (Chrismore, Betzelberger, Bier, & Camacho, 2011), sex addiction (Hook, Hook, & Hines, 2008), gambling addiction (Marceaux & Melville, 2011), and more and have reported group treatment as a key ingredient for recovery and remediation. Addicts respond more favorably to treatment in a group setting and are more likely to remain sober and committed to abstinence amid groups (Flores, 2001; Khantzian, 2001). Suffice it to say, “The very nature of addiction (regardless of the typology) lends itself to group” (Flores, 1997, p. 1).

Adventure recreation. Adventure recreation (AR) is an additional modality with a strong line of evidence supporting its efficacy on substance addiction treatment. AR is defined as leisure activities which (a) commonly take place out-of-doors or in a natural environment, (b) present novelty and challenge, (c) participants perceive as having uncertain outcomes, and (d) are organized for personal and social benefits (Chase & Chase, 1996; Priest & Gass, 2005). As an example of AR’s influence on chemical dependency, Homewood Alcohol and Drug Service in Guelph, Ontario implements AR to promote individual growth and behavioral change among clients seeking substance-related remediation (Baker et al., 1994). In addition, Bennett et al. (1998) found therapeutic camping significantly decreased autonomic arousal (craving and withdrawal), frequency of negative thoughts, and relapse up to 10 months after treatment.

AR has also been found to influence the more prominent principles of addiction treatment (i.e., authenticity, therapeutic engagement, and SNS). Hood (2003) found recreation was

correlated with alcoholics' authenticity and self-learning via accepting and appreciating individual attributes and weaknesses. In addition, Keesmaat (1998) found recreation influenced therapeutic engagement and SNS, as it promoted the development of social skills and support groups and encouraged drug addicts to "come early [to treatment groups] and stay late" (p. 3). Hence, in the world of chemical addictions, AR has been substantiated as a viable treatment modality for sustained remediation.

For reasons that are somewhat unclear, however, no apparent studies attend to the question: does AR (or any form of recreation-based programming) positively influence *behavioral* addiction treatment as it does for chemical dependency? Carruthers (1999) is one among a few scholars who confirmed this oversight when she reported, in her study about gambling addiction, that empirical research was incomplete because it had only evaluated recreation's influence upon substance abusers and neglected the implications of recreation upon behavioral addiction recovery. Carruthers further recommended researchers ought to explore recreation as a treatment modality for not just drug addicts, but behavioral addicts as well.

Theories explaining recreation's role in addiction recovery. AR's efficacy on the treatment of addiction can be explained via several frameworks. The present review highlights three particular theories. *Leisurability* models suggest addictive tendencies emerge from the lack of leisure education and peoples' inabilities to access and engage in appropriate recreation (Robertson, 2001). Mooney et al. (1992) suggested many drug addicts in early recovery found it difficult to create or engage *normal* leisure patterns and often reported struggling to imagine fun without substances or highly stimulating and addictive routines. Therefore, leisure education is suggested for reintroducing addicts to life's subtle joys and re-affording sober pleasures on the road to recovery.

Itin (1995) prescribes to an alternative theory by stating it is the out-of-doors and natural setting of AR responsible for the subsequent remedial effects over addiction. This rationale stems from and is grounded in the biophilia hypothesis, which argues all human beings have a genetic predisposition towards and affection for life-like or nature processes (Wilson, 1984). A researcher prescribing to the biophilia framework claims it is the lack of wilderness experiences in the first place that creates susceptibility to addiction and additionally argues excessive amounts of indoors time (recently coined as nature-deficit disorder; Louv, 2005) impoverishes us from “The awe of encountering an animal in the wild or a slug underfoot, of sleeping under the night sky, or of even seeing the night sky in our urban settings” (Kahn, Ruckert, Severson, Reichert, & Fowler, 2009, p. 59). Therefore, the prescription for recovery, according to this particular theory, is a heavy dose of AR, or experiences set amid the elements, in nature’s scene.

Meaningful Learning Experiences Model (MLEM). The MLEM (Taniguchi et al., 2005) is a third theoretical concept offering an explanation for the question: why does recreation positively influence addiction treatment and sustained remediation? This model stems from Palmer (2004) and his work on meaningful (or authentic) educative experiences. According to Palmer, people oftentimes lose touch with who they truly are, as their academic, professional, and social selves are but facades constructed to meet certain cultural affordances. He claims everyone is guilty of fronting false pretences, seemingly necessary to live up to high societal and personal expectations. As such, he asserts people are, in general, (intentionally or unintentionally) disingenuous and oftentimes have a personal and exigent need to be reacquainted with authenticity and their *whole* self. And addicts are no exception to Palmer’s observations, for they too are tangled in a web of chronic facades, created and maintained to meet addictive affordances (Failer, 2006; Young, 2009).

Thus, Palmer suggested meaningful learning experiences (MLE) as a remedy for a lost self, for these types of experiences are more than just learning: they also cultivate authenticity and “guide people’s perceptions of who they really are and what they are capable of” (Taniguchi et al., 2005, p. 136). MLE are defined as experiences (commonly facilitated through group-based AR) that lead a person to authentic change via the realization of their weaknesses, strengths, and potentials. Therefore, the authenticity brought about by MLE could theoretically aid addiction remediation and the recovery process by shedding addictive facades and reaffording a more complete perspective of personal capabilities and potential.

Furthering Palmer’s premises about MLE, Taniguchi et al. (2005) contributed to this body of literature by asking the question: what attributes are found within MLE? In a qualitative study, Taniguchi and colleagues investigated the attributes that took on meaning for participants who engaged in various group-based AR experiences. Results revealed two *experience arena* components (AR and a group setting) and five experiences phases (perceived risk, feelings of awkwardness, fractional sublimation, reconstructions, and growth) influencing MLE.

Adventure recreation. Preliminary to the five attribute phases of the MLEM, two components about the experience arena emerged from Taniguchi et al.’s (2005) study: AR and the group setting. The venue for MLE is not strictly defined in the literature; however, an adventurous outdoor experience is inferred as the arena of choice. Taniguchi (2004) argues an AR setting is oftentimes unpredictable and haphazard, full of novel and ruthless stimuli, both wanted and undesired. He continues by pointing out the natural environment inherently prompts participants to decide for themselves what to make of the oftentimes chaotic and/or unfamiliar terrain. This process tends to disrupt participants’ comfort zones, and in many cases, forces them to ascribe relevant meaning to their experiences in the wild. Hence, if meaningfulness is a

targeted participant outcome, an AR setting is among the most ideal arenas for such a result to occur.

Group setting. A second arena component worthy of note is group participation. There are arguments stating MLE do *not* have to take place in a group, because meaning often accompanies solo exercises or unaccompanied expeditions. It should also be addressed, however, that for solo exercises to reach high levels of meaningfulness, conditions must reach extreme limits (Allison, 2004), as with the Antarctic explorer Douglas Mawson, who, after being abandoned by his shipmates in the early 1800s, was left to endure the unforgiving tundra alone for several winter months. Only then did Mawson report the ability to step outside of himself to get a good view of who he really was. Allison (2004) suggested, however, participation and reformation via collective debriefing is a viable alternative to extreme, solo, and potentially life-threatening conditions, as interactions and relationships can present people with insights not previously considered. In Taniguchi et al.'s (2005) study, participants repeatedly referenced how other group members helped shape their perspectives. Therefore, it is argued the group dynamic tends to broaden the paradigm wherewith individuals can assess themselves. In short, since solo extremes are by and large difficult to appropriately or even ethically replicate, a group setting should be considered as an alternative: for it is amid a group of invested participants that deeper meaning often emerges.

Perceived risk. Subsequent to the two arena components of AR and group, five attribute phases are also presented—the first of which is perceived risk. Taniguchi et al. (2005) reported participants who experienced moments of perceived danger and/or uneasiness, ranging from mild embarrassment among group members to perceived and sometimes actual life-threats, tended to encounter meaningfulness. Participants gleaned insights about their strengths and weaknesses

due to perceptions of risk presented in their experiences. As a side note, however, risk perception is, in general, a tremendously subjective concept, influenced by numerous variables such as age, sex, education level, and life experiences (Sjoberg, 2000). Therefore, for meaningfulness to accompany participation, it is imperative the experience accounts for unfamiliar, novel, and/or precarious moments (perceived risk) on an individual level.

Feeling awkward. The second phase of the MLEM, feeling awkward, manifested when group participants encountered a state of discomfort and/or uneasiness due to unfamiliar, novel, precarious, and oftentimes inconvenient recreation activities. On the milder end of the spectrum, some participants reported feeling out of place. At the other end of the spectrum, some participants experienced a loss-of-control. Thus, when people are presented with experiences that are perceived as unfamiliar and risky, feelings of awkward uneasiness will commonly follow.

Fractional sublimation. Susceptibility, perceptions of risk, and awkwardness contribute to the third MLEM phase—fractional sublimation. In chemistry, fractional sublimation is the process of separating impurities, through extreme pressure and temperatures, to form a purer element. In the behavioral sciences, fractional sublimation is shedding and leaving behind fabricated pretenses or facades (impurities) through risk and awkwardness, which uncovers a more whole and authentic (pure) self. Taniguchi et al. (2005) described two components that contribute to fractional sublimation. First is the immensity of the elements, also referenced in the literature as the indescribable or unexplainable experiences of nature. Nature's confrontation often compels participants to face their facades and oftentimes painfully and even frustratingly process aspects of the sublime (Kant, 1982). And along with the power of nature, AR experienced in a group setting also tends to peel facades away. Group members observe each

other's experiences with risky and awkward situations and watch each other's experiences with uneasiness and frustration. Observing group members begin to expose participant facades and contribute to the process of fractional sublimation. Hence, be it the immensity of the natural environment, facade exposure among observing group members, or more ideally, a combination of both cues, participants who experience risk and awkwardness in a group-based AR setting will likely leave behind certain fabricated impurities and uncover a more whole and authentic self.

Reconstruction of self-image. The fourth phase of the MLEM, *reconstruction of self-image*, is accounted for by one of two subphases: *reflection* and/or *reformation*. Reflection is a casual introspection of performances and experiences. This can be accomplished through journaling, downtime, or wherever participants can reflect upon their experiences. Reformation is an extrospection of performances and experiences among group members. The group is invited to formally or informally disclose observations and conclusions about their experiences to each other, about self and others. Internal and external processing peels away facades and affords participants the information necessary to begin making sense of and ascribing meaning to their experiences.

Allowing for growth. Exposure to risk, awkwardness, fractional sublimation, and reconstruction primes participants for *growth*, the final phase of the MLEM. Growth is recognizing that a personal change has occurred and that the process yielded memorable and worthwhile results. In this phase, group members begin to recognize, appreciate, and, to a certain extent, implement introspective and extrospective observations gleaned from their participation. Facade layers are peeled back, and participants recognize certain layers have been shed. A more whole, authentic, less fabricated self emerges, and the MLE solidifies.

This model, with its accompanying five phases and two arena components, affords recreation and addiction researchers a testable framework whereby they can examine recreation's influence on addiction remediation. Couched beneath the Theory of Process Addiction, AR, via the MLEM, will likely benefit behavioral addicts as it has addicts with drug dependencies. Participants with behavioral addictions will likely not only shed facades and emerge more authentic (Hood, 2003; McEvoy & Buller, 1997; Taniguchi et al., 2005), but also increase in therapeutic engagement and SNS (Berscheid, 2003; Hatch, 2006; Keesmaat, 1998; Kolden, 1996; Simpson, 2004). The MLEM and the accompanying rationale, however, have yet to be quantified and need to be empirically tested.

The Present Study

In summary, the present literature review suggests if an addict in recovery participates with fellow addicts in an MLE (as outlined by the MLEM), they will likely report an increase in three foundational treatment variables: authenticity (Hood, 2003; Houchin, 2011; McEvoy & Buller, 1997; Taniguchi et al., 2005), therapeutic engagement, and SNS (Berscheid, 2003; Demetrius et al., 2010; Hatch, 2006; Keesmaat, 1998; Kolden, 1996; Kostopoulos, 2000; Simpson, 2004). The MLEM, however, has not been tested. In addition, this literature chapter has also exposed a gap in the research because there appears to be little, if any, empirical evidence testing recreation's therapeutic influence on *behavioral* addictions and the accompanying recovery process (Carruthers, 1999). Evidence, however, suggests *all* addictions tend to behave similarly in the brain (Goodman, 2008; Smith & Seymour, 2004). And because studies have already established AR as a beneficial *drug* treatment modality (Baker et al., 1994; Hood, 2003; Keesmaat, 1998), *behavioral* addicts should likewise encounter remedial benefits from MLE. These lines of reasoning, however, have yet to be tested; and therefore, it is the

purpose of the study to (a) to determine if MLE influence a *behavioral* addict's ability to be more *authentic*, (b) to determine if MLE influence certain *therapeutic engagement* variables for *behavioral* addicts enrolled in treatment programming, and (c) to determine if MLE influence a *behavioral* addict's perceptions of *SNS*.

Methods

The problem of the present study is threefold: (a) to determine if MLE influence a *behavioral* addict's ability to be more *authentic*, (b) to determine if MLE influence certain *therapeutic engagement* variables for *behavioral* addicts enrolled in treatment programming, and (c) to determine if MLE influence a *behavioral* addict's perceptions of *SNS*. The conduct of the study will be as follows: (a) selection of subjects, (b) instrumentation, (c) study design, (d) study procedures, and (e) data analysis.

Selection of Subjects

Volunteers for this study will be recruited from the Wasatch Front: Utah, Salt Lake, Summit, Davis, and Weber Counties. A convenience sample of 120 participants will be drawn from two 12-Steps recovery factions focusing on sexually-oriented behavioral addictions: Sexaholics Anonymous (SA) and The Church of Jesus Christ of Latter-day Saints' (LDS church) Sexaholics Anonymous (SA-LDS). *Sexual addiction* is being defined as an unhealthy relationship with sexual experiences (thoughts, activities, fantasies, etc.) marked by a loss of control and continuation in spite negative and adverse consequences (Carnes, 2011), which is, by definition, a behavioral addiction.

12-Step factions. SA is a fellowship of men and women who identify as being powerless over sex addictions (Utah 12-Step, 2012). SA group members achieve kinship in common suffering through concepts pertaining to a higher power, sharing experiences in group meetings,

and sponsorship. SA's primary purpose is to help its members maintain sexual sobriety (as defined by SA) and to provide resources for other sexaholics. The basic methods of SA are grounded in 12-Steps programming and *in the* 12 Traditions of AA. There are no dues or fees for SA membership, as they are self-supporting through their own contributions.

SA-LDS is a close replica of the above mentioned 12-Steps faction; however, it has two notable distinctions. SA-LDS openly affiliates with The Church of Jesus Christ of Latter-day Saints and therefore seeks the church's doctrine for dictations on the (in)appropriateness of certain sexual behaviors. Because of this affiliation, SA-LDS also differs from other factions by explicitly defining Jesus Christ as the higher power and source for greater strength (The Church, 2011). Similar to SA, however, SA-LDS *employs all other* 12-Steps/12 Traditions in a like manner, promoting powerlessness over addiction, group sharing, no membership fees, sponsorship, etc.

The descriptions above suggest the two 12-Steps factions of interest are much more alike than dissimilar. While a few subtle distinctions are noted, the discrepancies appear to be superseded by striking similarities such as both factions relate in 12-Steps, 12 Traditions, powerlessness over addiction, kinship in common suffering, sponsorship/networkability, seeking a higher power, and no membership fees. Even though the study will account for the individual factions, the two group types are expected to be highly correlated and collapse into one group.

Based off of the assumption that both 12-Steps factions will collapse into one similar sample of participants, a power analysis was conducted to determine an appropriate sample size. Using Joe et al.'s (2002) reported standard deviation ($SD = 2.36$), a sample size of 60 participants appears satisfactory and powerful enough to detect a significant two point difference at a 0.05 level. Therefore, an n of 60 treatment participants is being recruited.

Participant characteristics. Twenty-five facilitators were randomly selected from the Wasatch Front: 15 SA and ten SA-LDS and asked to describe the participants in their groups. The facilitators described *typical* group participants as white or Caucasian, Christian, and predominantly male. Participants' mean age was projected to be between 25 and 35 years. It was also reported that the most common sexual behavior being treated was associated with the combination of uncontrollable pornography usage and masturbation. Facilitators reported participants usually attended one, sometimes two one-hour 12-Steps meetings per week with group sizes averaging between eight to twelve participants, though the SA-LDS groups tended to average about twenty participants per meeting.

Instrumentation

This study's research instrumentation includes the following self-administered questionnaires: (a) an adapted 33 item version of the Client Evaluation of Self and Treatment (CEST) (Texas Christian University, 2005) and (b) the 12-item Authenticity Scale (AS) (Wood, Linley, Maltby, Baliousis, & Joseph, 2008).

Client Evaluation of Self and Treatment (CEST). The CEST is a 16-factor, approximately 25-minute questionnaire, consisting of 130-items. The instrument assesses client performance, psychological change during treatment, and program-level functioning (Simpson, 2004). The CEST asks participants to rate each statement on a five-point Likert scale, 1 being *disagree strongly* to 5 being *agree strongly*. Examples of the types of items found in the CEST include: *there is a sense of family (or community) in this program, this program expects you to learn responsibility and self-discipline, and time schedules for counseling sessions at this program are convenient for you.*

As evidence of reliability, Joe et al. (2002) administered the CEST to a national sample of over 1700 clients from 87 drug treatment programs and reported a satisfactory Cronbach's alpha for the overall instrument ($\alpha = 0.88$), and program-level alpha reliabilities were also satisfactory (α ranging from 0.71 to 0.96). Furthermore, the CEST model structure and scales had an acceptable fit (minimum fit $X^2(7260) = 19258.30$; RMSEA = .048; SRMR = .073). In addition to model fit, the CEST has been applied to various populations in different settings and has been widely accepted as an assessment tool for measuring outcomes related to the addiction treatment process (Garner et al., 2007; Greener, Joe, Simpson, Rowan-Szal, & Lehman, 2007; Joe et al., 2002; Roberts, Contois, Willis, Worthington, & Knight, 2007; Simpson, 2004).

The present study adapted the CEST from its original format to fit a 12-Steps program setting. The modifications were minor and pertained only to terminology discrepancies and applicable domains. The original CEST is directed towards drug addicts admitted into a clinical or correctional setting. The population of interest in this study is neither clinically or correctionally based, nor substance-related, but community-based, behaviorally oriented, 12-Steps programs. Therefore, certain terms such as *counselor*, *program*, and *drugs* were replaced with terms that fit this study's sample (e.g., *facilitator*, *group meetings*, and *addiction*). For example, the original CEST states: *time schedules for counseling sessions at this program are convenient for you*. The adapted CEST accounts for traditional 12-Steps programming by revising the item to read: *time schedules for group meetings are convenient for you*. As another example, the original CEST states: *you have made progress with your drug/alcohol problems*, whereas the adapted CEST states: *you have made progress with your addiction problems*.

In addition to minor terminology discrepancies, certain CEST program-level domains, such as *hostility* and *counseling rapport*, apply well in a clinical and correctional setting but do

not fit with the community-based 12-Steps population of interest. Therefore, this study will assess the program-level indicators relevant to the population of interest: *treatment satisfaction*, *treatment participation*, *peer support*, and *social support*. Treatment satisfaction contains seven items and uses statements such as *this program is organized and run well* and *this program location is convenient for you*. Twelve items comprise the treatment participation indicator, measuring participants' agreeableness using items such as *you have made progress with your addiction problems* and *you always participate actively in your 12-Steps meetings*. Peer support implements five statements and includes items such as *you have developed positive trusting friendships while at this program*. And the fourth program-level indicator—social support—employs nine statements such as *you have people close to you who motivate and encourage your recovery*.

Authenticity Scale (AS). The AS was developed in 2008 in response to Lopez and Rice's (2006) claim that there was a "virtual absence of available measures of the construct [authenticity]" (p. 362). The 12-item AS has three domains that measure an individual's ability to *live inauthentically*, *accept external influences*, and *self-alienate* with higher-scoring individuals exhibiting greater authenticity. The AS uses a seven-point Likert scale, 1 signifying *does not describe me at all* to 7, *describes me very well* (Wood et al., 2008). Two example items are: *I think it is better to be popular, than to be yourself* and *other people influence me greatly*. As evidence of reliability, Wood et al. (2008) reported Cronbach's alphas range from $\alpha = .82$ to $.84$. In addition, test-retest validity has been established ranging from $r = .79$ to $.91$. Discriminant validity was established by comparing the scale to a social desirability scale with $r = .05$ to $.09$, $p = .19$. The psychometric properties for this scale are satisfactory for use in research.

Study Design

Treatment groups will be conveniently selected from several sexually-related addiction 12-Steps factions on the Wasatch Front. All participants will be recruited in a similar fashion and they will randomly assigned to one of two groups: the treatment or the control. All participants will take the pre- and posttest at similar times. The treatment group, however, will attend an intervention between the pre- and posttest. The intervention is intentionally programmed to be an MLE. The treatment group will participate in a four-hour scuba diving experience at the Homestead Crater in Midway Utah.

Study Procedures

Recruiting. The PI will recruit participants by attending various open-meeting SA groups throughout Utah, Salt Lake, Summit, Davis, and Weber Counties. During the opening procedures and traditional introductions of the respective SA meetings, the PI will state his name, introduce himself as a visitor, present the study details, and invite group members to sign up via an online Qualtrics survey.

Intervention. Sixty of the SA members who create an account on Qualtrics and complete pretest procedures will be randomly assigned as the intervention group. The remainder will be assigned as the control. After participants sign up on Qualtrics and take the pretest, they will be sent an invitation to participate in the MLE and will be allowed to sign up for a day and a time most convenient to their schedule. Procedures, such as participant instructions, directions to the facility, available dates and times for group scuba diving, a liability waiver, and the evening's activity schedule, will be attached to the invitation. The procedures attachment will also let participants know they are individually responsible for transportation to and from the activity site.

The recreation site. Also known as *The Crater*, the Homestead caldera is a 10,000-year-old, 55-foot tall, beehive-shaped, natural volcanic crater and hot spring located in Midway, Utah. Water erosion and pressure hollowed out the center of this conical structure and a thermal pocket keeps the water inside at 90+ degrees. The caldera is privately owned and commercially operated year round for recreational use (most commonly swimming and scuba diving). Scuba instruction and certification are also available at The Crater. Overall, The Crater is a novel and unique experience for participants, as they are surrounded in a cave-like setting, when in actuality they are recreating and swimming inside the mouth of a volcano.

As a side note, since this study will attempt to quantify the MLEM and test whether MLE influences authenticity, therapeutic engagement, and SNS, it is necessary for this methods chapter to reintroduce related concepts and account for all seven components (two arena components and five attribute phases) of the model. The present study goes to great lengths to stay true to all the components of the MLEM, and an itemized accounting of the model's components will follow an overview of the intervention.

Scuba diving. Scuba diving at The Crater is this study's MLE. Upon arriving at The Crater, participants will be escorted by The Crater's director to meet the staff of certified diving instructors (CDI), briefly tour the facility, and review the facilities guidelines. Following this instruction, participants will be asked to take the risk portion of the sociodemographic questionnaire for a measure of perceived risk prior to entering the water. This risk assessment will also account for those participants who may be experiencing high levels of anxiety about scuba diving. Following the introduction and test procedures, participants will be invited to swim in the hot spring at their leisure.

While participants are arriving to The Crater and swimming at their leisure, preassigned 12-Steps faction groups of seven or fewer will be asked to exit the swimming area and enter the four-foot deep training area where they will participate in a 30-minute scuba instruction course provided by a CDI. The participants will be suited in the appropriate scuba gear during this training session and practice proper breathing and scuba-related techniques. After receiving the proper instruction and also after expressing the appropriate level of comfort with the scuba gear and diving process (to be determined by the CDI), each participant in the group will pair up with one CDI. Pairs will exit the training area and swim five feet to the buoys and the group will prepare to descend below the surface. The group will descend below the surface via a fixed underwater rope line to a platform 20 feet beneath the surface. Upon reaching the targeted platform, the participant divers will let go of the rope, visually locate their CDI partner, and prepare for all underwater facility lights to be shut off, potentially leaving the participants sensory deprived and spatial disoriented. As a side note, ambient lighting will remain for the surface participants who are training or swimming at their leisure. Following several seconds of darkness, each CDI will then turn on a personal lighted night marker and, as a pair, commence an underwater scuba tour of the caldera, swimming and exploring the crater at an introductory depth. The CDIs and group participant divers will remain submerged for 20 to 35 minutes, at which time the CDIs will signal for the facility lights to be turned back on and the group will safely and properly make their way back to the surface. Every 30 to 40 minutes, preassigned groups of seven will continue to cycle through the scuba diving experience in this same sequence.

Debrief. Within the first five minutes of the diving group resurfacing, the PI will gather the participants together and read the first portion of the Debrief Script, which invites

participants to separate again from the body of swimmers and meet for a short debrief. Upon group members convening for the debrief, the PI will facilitate a semi-structured debrief based on Flick's (2007) episodic interview format (i.e., accounting for five data sorts: situational narrative, repisodes, examples, subjective definitions, and theoretical argumentations). The PI will include some ice-breaking questions as part of the introduction. The following are sample questions from each of the various debriefing categories: (a) introduction: *rate your scuba experience here at The Crater with your thumbs (thumbs up = loved it; thumbs down = hated it; thumbs in between = neutral...or anywhere in between)*, (b) situational narrative: *how did you feel right as you were leaving the surface and beginning your official descent towards the first platform?*, (c) repisodes: *when other situations are similar to this scuba diving experience, novel, a little bit awkward, or risky or threatening, how do you usually cope or deal with the situation?*, (d) examples: *did you learn anything new or interesting about another member of this group that you would like to share that may be insightful or also interesting to that person or the group?*, (e) subjective definitions: *what did you learn about yourself during this experience?*, and (f) theoretical argumentations: *why do you think people act differently in a groups versus being alone?* Other like questions will be asked if the group discussion so directs. Following the debrief, participants will be invited to reenter the hot spring for leisure swimming or conclude their experience at The Crater and leave. This pattern of diving and debriefing will repeat approximately five or six times per night for four nights, and the overall intervention procedures will conclude when the last group of seven, on day four, completes their debrief.

Post intervention. Determining the amount of lag time between the intervention and posttest procedures is not easy to determine. According to Raat, Mangunkusumo, Landgraf, Kloek, & Brug (2007), if participants were to take the follow-up questionnaire immediately after

the scuba intervention, an exaggerated spike might manifest, inflating the actual effect of the treatment upon the variable of interest. On the other hand, a lengthy delay could dampen results and misreport an intervention as non-significant, when in fact, the treatment was significantly impactful.

Therefore, in this study, posttest procedures will be postponed for two weeks following the last intervention. Two weeks following the scuba diving experience, the PI will send out an electronic reminder through Qualtrics, directing all subjects (both treatment and control) to the available posttest. This time delay will afford all participants the ability to attend at least two of their weekly SA group meetings after their intervention but prior to taking the follow-up questionnaire. Participants will be strongly encouraged to attend their weekly meetings before taking the posttest assessments because the meeting may afford participants an additional opportunity for meaningful insights, reconstruction, and growth.

Accounting for MLEM components. As previously mentioned, seven MLEM components are being accounted for in this study (two arena components and five attribute phases). Scuba diving in a natural hot spring inside a caldera meets all of the criteria for AR: (a) it takes place out-of-doors or in natural environments, (b) it presents novelty and challenge, (c) participants are likely to perceive outcomes as uncertain, and (d) the activity was organized for personal and social benefits (Chase & Chase, 1996; Priest & Gass, 2005; Rossman & Elwood-Schlatter, 2008). In addition scuba diving and leisure swimming with other members of 12-Steps factions satisfies the model's call for a group-based setting. Therefore, the two arena components of the MLEM are accounted for.

Perceived risk. In addition to arena components, this study also goes to great lengths to account for the five individual attribute phases of the MLEM (risk, awkwardness, fractional

sublimation, reconstruction, and growth). Scuba diving at The Crater exposes participants to the first phase, perceptions of risk, on several levels. Case in point, the Divers Alert Network (DAN), a non-profit and research organization dedicated to the safety and health of recreational scuba divers, reported that several psychological phobias contributed to and were responsible for the overall fear of scuba diving: fear of water (hydrophobia), fear of creatures in the water (ichthyophobia), fear of darkness (nyctophobia), fear of being enclosed or enveloped (claustrophobia), fear of being unable to breathe or of choking (pnigophobia), and fear of depth and sinking (bathophobia) (Divers Alert Network, 2008). In addition to specific phobias, participants who are predisposed to feeling abnormally heightened anxiety (approximately 40 million Americans) are significantly more likely to perceive underwater activities as life threatening (Kessler, Chiu, Demler, & Watlers, 2005). Diving in murky or poorly lit water, as found specifically at The Crater, and specifically when the lights are turned off, also exposes participants to sensory deprivation and spatial disorientation (Campbell, 2008), increasing the likelihood of risk perceptions. Inexperience with diving, foreign scuba gear, and unfamiliar CDIs, likely with this study's landlocked demographic, may also increase risk perceptions. Thus, in spite of the gross subjectivity of risk perception, it is likely most if not all subjects of this study will perceive scuba diving at The Crater, at night, in murky dark water as a risky recreation experience.

Awkwardness. Awkwardness, the second phase of the MLEM, will manifest during scuba instruction, diving, and swimming. Participants will be performing unfamiliar and foreign tasks, and it is expected most will not have the skills necessary to properly and flawlessly execute diving procedures. Adding to feelings of awkwardness, participants will be performing unfamiliar diving tasks in front of other participants and acquaintances. Participants will likely

encounter an additional state of discomfort and awkwardness as they watch each other labor and struggle to scuba dive proficiently. In short, because of the uniqueness of the experience and the high potential for perceived risk, it is likely participants will encounter more than one moment of uneasy awkwardness.

Fractional sublimation. Perceived risk, awkwardness, and many of the responses accompanying these phases such as susceptibility, uneasiness, and even frustration are also the selfsame attributes leading participants to fractional sublimation. Revisiting some points from the literature chapter, it is often the immensity of the elements, natural surroundings, and the indescribable and unexplainable experiences that compels participants to face their facades and, sometimes painfully and even frustratingly, process aspects of the sublime (Kant, 1982; Taniguchi et al., 2005). This actualization process is synonymous with fractional sublimation and is brought about by risk and awkwardness. In this study, the overwhelming and potentially immense environment of the intervention, such as being in the mouth of a volcano, 20 feet beneath the surface in unilluminated, murky water for half an hour, potentially for the first time, will likely guide participants to be fractionally sublimated, confronting facades and surrendering certain pretenses.

Reconstruction and growth. According to the literature, debriefing is key to contriving meaning from group-based AR experiences (Rohnke & Butler, 1995; Taniguchi et al., 2005) and is being implemented in the present study to account for the last two experiences phases of the MLEM: reconstruction and growth. Proper debriefing can resurface awkward moments and catalyze fractional sublimation at a deeper level and will provide participants more formal and structured disclosure of personal observations concerning self *and* group dynamics. As the debrief is facilitated by the PI, participants can begin to recognize, maybe even appreciate, and,

to a certain extent, implement insights gleaned from their scuba diving experience and accompanying discussion. Thus, debriefing will facilitate deeper participant intro- and extrospection and afford opportunities for subjects to experience authenticity and growth. They will likely learn more about their whole self and assign meaningfulness to their experiences.

Data Analysis

Following data collection procedures, data points will be entered into SPSS, a statistical software package, to test the hypotheses that there are no significant differences between control and treatments groups' authenticity, therapeutic engagement, and SNS. Once entered, data points will be cleaned and screened for gross outliers. Once cleaned, one of the first analyses will test for significant differences between 12-Steps factions. No significant differences between factions are expected to exist. Following testing for differences between factions, potentially confounding variables such as time in treatment and risk perception will be analyzed and controlled. Following these first steps, a block regression analysis will be created using demographic control variables for each of the dependent variables in the study to test for significant covariates. An example of a covariate that may be included in a regression equation to prevent confounds is *years of sobriety* and/or *time in addiction treatment*. Variables in the regression analysis with significant covariation will be carried over to an analysis of covariance (ANCOVA). The ANCOVA will compare pre- and posttest scores between groups while controlling for the significant covariates. A .05 significance level will be used. It is speculated a significant difference will be found between treatment and control groups on the dependent variables authenticity, therapeutic engagement, and SNS.

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Appendix B: Adapted Client Evaluation of Self and Treatment (CEST)

Instructions: Please read each of the following statements about how you see yourself or your 12-Steps group. Indicate how strongly you *Agree* or *Disagree* with the statement by providing a rating from 1 to 5, using the following scale:

1	2	3	4	5
Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
-1.	You have people close to you who motivate and encourage your recovery.....			
-2.	Time schedules for group meetings are convenient for you*.....			
-3.	Your group expects you to take responsibility and learn self-discipline*.....			
-4.	You have close family members who help you stay away from your addiction*.....			
-5.	You are willing to talk about your feelings during group meetings*.....			
-6.	Your 12-Steps program is organized and run well*.....			
-7.	You have made progress with your addiction problems*.....			
-8.	You have good friends who do not struggle with the same addiction that you struggle with*.....			
-9.	You have people close to you who can always be trusted.....			
-10.	You are satisfied with your 12-Steps program*.....			
-11.	You have learned to analyze and plan ways to solve your problems.....			
-12.	You have made progress toward your goals in your 12-Steps program*.....			
-13.	You always attend group meetings*.....			
-14.	Other members of your group care about you and your problems*.....			
-15.	You have stopped or greatly reduced your addictive behaviors while in this 12-Steps group*.....			
-16.	You have people close to you who understand your situation and problems.....			
-17.	You always participate actively in group meetings.....			
-18.	You have made progress in understanding your feelings and behavior.....			
-19.	Other members of your 12-Steps group are helpful to you*.....			
-20.	You have improved your relations with other people because of your 12-Steps group..._____			
-21.	Your group is efficient at doing its job*.....			
-22.	You are similar to (or like) other people in your group*.....			
-23.	You have made progress with your emotional or psychological issues.....			
-24.	You work in an environment that does not support your recovery efforts*.....			
-25.	You have people close to you who expect you to make positive changes in your life...._____			
-26.	You have people close to you who help you develop confidence in yourself.....			
-27.	You have developed positive trusting friendships while in this 12-Steps program*.....			
-28.	You give honest feedback during group meetings*.....			

1	2	3	4	5
Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree

- 29. You have people close to you who respect you and your efforts in this
12 Step program*....._____
- 30. There is a sense of family (or community) in your 12-Steps program*....._____
- 31. You get plenty of personal support from your group members*....._____
- 32. The location of group meetings is convenient for you*....._____
- 33. You are following the guidance of 12-Steps group members....._____

Appendix C: Authenticity Scale (AS)

All items are presented on a 1 (does not describe me at all) to 7 (describes me very well) scale. Total Items 1, 8, 9, and 11 for Inauthentic Living; Items 3, 4, 5, and 6 for Accepting External Influence; and Items 2, 7, 10, and 12 for Self-Alienation.

1. I think it is better to be popular, than to be yourself.
2. I don't know how I really feel inside.
3. I am strongly influenced by the opinions of others.
4. I usually do what other people tell me to do.
5. I always feel I need to do what others expect me to do.
6. Other people influence me greatly.
7. I feel as if I don't know myself very well.
8. I usually do not stand by what I believe in.
9. I am not true to myself in most situations.
10. I feel out of touch with the 'real me'.
11. I do not live in accordance with my values and beliefs.
12. I feel alienated from myself.

Appendix D: Debrief Script

Ice-breakers

1. Rate your scuba experience here at The Crater with your thumbs. Thumbs up = loved it; thumbs down = hated it; thumbs in between = neutral; (or anywhere in between).
 - a. Why did you rate your scuba experience that way?
2. Each of us experienced different levels of concern or risk during this experience. I'm interested in the highest level of risk you experienced at any given point during this whole process. Some people reported lots of anxiety when they entered the door/tunnel to The Crater. Others panicked when they tried to breathe through their regulators for the first time, and so on. On a scale from 1 to 10, 1 = no risk at all, and 10 = I am certain I might lose my life if I continue, what was your highest level of anxiety/risk during this whole experience and when was that?
 - a. Why were you so nervous (or not nervous)?
 - b. Now that it's over, would you do it again?
 - c. If you had a chance to go again, what would you change about the experience?

Situational narratives

1. How did you feel right as you were leaving the surface and beginning your official descent towards the first platform?
 - a. Can anyone else in the group relate to that experience? In what ways?
 - b. Did anyone have a different experience when they left the surface and descended for the first time?
2. How did you feel when you descended deeper under water?
 - a. Can anyone else in the group relate to that experience? In what ways?
 - b. Did anyone have a different experience as they descended deeper?

Repsisodes

1. When other situations are kind of like this scuba diving experience, novel, a little bit awkward, or risky or threatening, how do you usually cope or deal with the situation?
 - a. Does anyone else deal with novel, awkward, or risky situations differently? What do you tend to do?
2. Think back for a moment on your life, what experiences, or types of experiences, have taught you the most about yourself?
 - a. (see Argumentation theoretical question #2)

Examples

1. When the group that followed us resurfaces from their dive, what would you guess was the most meaningful part for them? Why?
 - a. Does anybody else think that those divers who are about ready to resurface would say that it was not _____ that was the most meaningful to them, but it was something else? What do you think the most meaningful part of the dive was for them? Why?

2. Did you learn anything new or interesting about another member of this group that you would like to share that may be insightful or also interesting to that person?
 - a. Did anyone notice something different about another person that may be insightful or also interesting to that person? Tell us about it.

Subjective definitions

1. What did you learn about yourself during this experience?
 - a. Did anyone learn something about themselves that was different from _____ experience? What did you learn about yourself?
2. What does the term recreation mean to you? (defined as personally or socially beneficial, Rossman & Schlatter, 2011)
 - a. Do you feel an experience like this (scuba diving inside a volcano) is beneficial? In what ways?

Argumentation theoretical

1. Did it make a difference that we were scuba diving as a group? Would you have acted differently if it were just you and an instructor? In what ways?
 - a. Why do you think you act differently in a group?
 - b. Why do you think people in general do that, act differently in a group setting?
2. (Related to Repisodic question #2) Think back again on your life, and those life experiences, or types of experiences that have taught you the most about yourself; what made those experiences so meaningful?
 - a. Do recreation or leisure experiences make your list of experiences that have taught you about yourself?
 - i. (If yes) what is it about those leisure or recreation experiences that does that: teaches us so much about ourselves?