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## **A Systematic Review of Wilderness Therapy: Theory, Practice and Outcomes**

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*St. Catherine University*

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A Systematic Review of Wilderness Therapy:  
Theory, Practice and Outcomes

by

Lindsey Jo Van Hoven, B.A.

MSW Clinical Research Paper

Presented to the Faculty of the  
School of Social Work  
St. Catherine University and the University of St. Thomas St. Paul, Minnesota  
in Partial fulfillment of the Requirements for the Degree of

Master of Social Work

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The Clinical Research Project is a graduation requirement for MSW students at St. Catherine University/University of St. Thomas School of Social Work in St. Paul, Minnesota and is conducted within a nine-month time frame to demonstrate facility with basic social research methods. Students must independently conceptualize a research problem, formulate a research design that is approved by a research committee and the university Institutional Review Board, implement the project, and publicly present the findings of the study. This project is neither a Master's thesis nor a dissertation.

## Abstract

The purpose of this study was to examine current literature on wilderness therapy in order to identify any consistent themes. Ten studies were located and key data was identified on theoretical foundations, therapy components, populations being served, as well as outcomes. Results identified six theoretical foundations of wilderness therapy: Systems Theory/Family Systems, Eclectic Framework, Attachment Theory and Family Systems Theory, Group Therapy Theory, Motivation to Change Theory and Psychodynamic Theory. Numerous consistent themes were identified within wilderness therapy components, in addition to several independent components. Wilderness therapy was identified as a treatment modality for a wide range of populations and identified client problems, but most often the client was identified as at risk youth. Six studies included data on program outcomes, which identified positive benefits of wilderness therapy including positive client change, better family and client functioning and a sustained decrease in problematic behavior. Since this study was exploratory in nature, future research should aim at duplication of this study as well as utilizing additional case studies to gain a better understanding of the use of theoretical foundations and components of wilderness therapy

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### A Systematic Review of Wilderness Therapy: Theory, Practice, and Outcomes

Social work has grown and developed within the last several decades into a profession whose primary aim is to “enhance human wellbeing and help meet the basic human needs of all people, with particular attention to the needs and empowerment of people who are vulnerable, oppressed, and living in poverty” (NASW, 2008, para. 1). This is especially important for clinical social work where, the application of “professional social work knowledge, skills, and values in the different diagnosis and treatment of psychosocial function, disability, or impairment, including addictions and emotional, mental, and behavioral disorders” occurs (Minnesota Statutes, Section 148E.010). With this mission in mind, clinical social workers extend services to a broad array of clients, in various situations and settings, who are coping with unique problems. It may seem as though the options are endless when selecting from therapeutic approaches and theories to utilize, but many important factors play a role when clinicians ultimately decide which to implement. There are a myriad of variables to take into consideration when evaluating a client and possible treatment options. Among other things, clients are often assessed for current risk of suicidality, homicidality, identifiable symptoms, and whether the client is requesting services voluntarily or involuntarily. After evaluating a client and their current situation, the clinician may turn to research in hopes of finding evidence that supports utilizing a specific approach. By examining in-depth research and finding supportive evidence, a clinician will feel encouraged and supported in their decision regarding which intervention to choose.

At present, the social work literature suggests that there are numerous therapeutic approaches and theories available for implementation for a variety of diverse client

populations. At a quick review, social workers may identify Cognitive Behavioral Therapy, Attachment Theory, Psychodynamic Therapy, and Behavior Theory as a few of the more mainstream approaches and theories they often apply to clients. Looking further beyond the well known, clinicians may discover alternative enigmatic approaches such as Aura Therapy, Yoga, Mindfulness, and Nature Therapy.

“Everybody had won and all must have prizes,” a quote from Lewis Carroll’s 1865 ‘Alice’s Adventure in Wonderland,’ is often used in the social work profession to explain that each of the theories within the multidisciplinary fields are valuable, even if their contributions only help one single client. However, regardless of a clinician’s decision, it is crucial to remember that strong, ethical social work practice, regardless of which therapeutic approach and theory are embraced, needs to be built on theory, research and evidence-based practice (Turner, 1996). If therapeutic approaches are developed and practiced without theory and research to support and guide them, potential dangers can develop. In addition, research regarding such approaches will remain limited to the overall knowledge of social work, which may delay possible advancement for other clients.

One of the more ambiguous of the alternative approaches involves the implementation of nature as a therapeutic component. While currently there appears to be a great deal of research available on wilderness therapy; each piece of research tends to highlight a new program, a different way of implementing nature with clients or exploring the use of wilderness therapy within a new population. While each of these studies present useful results, it is hard for wilderness therapy to gain more acknowledgement, acceptance and support as a viable therapeutic approach when current

research cannot coherently define wilderness therapy. Although it is clear from various studies that spending time in the wilderness does have psychological benefits, it is also necessary to note that simply spending time outside does not mean that therapy is occurring (Becker, 2010). Consequently, it is crucial to critically examine theory and research associated with wilderness therapy to try and clear up such variances.

Differentiating between therapy and what is therapeutic brings into discussion several ethical considerations, especially when exploring the options around nature-based interventions. With the development and implementation of therapeutic approaches which incorporate nature, it is essential that these approaches are grounded in both theory and research in order to prevent unnecessary harm to potential clients, to adhere to ethics within social work practice and to advance work with clients positively. Therapeutic approaches, including nature as a therapeutic tool, also need to embrace evidence-based practice so that clinicians may continue to utilize treatment and interventions based on the best available science (McNeece & Thyer, 2004). The research purpose of this project is to examine current literature on wilderness therapy in order to identify any consistent themes regarding what makes up wilderness therapy, identify if there is any consistency between the theories and the models/interventions used, as well as exploring the populations being served by wilderness therapy and current wilderness program outcomes data.

### **Literature Review**

In 1874, medical doctor Silas Weir Mitchell published an article titled ‘Camp Cure’ that presented a prescription for the emotionally and cognitively taxed. His prescription called for the use of wilderness with experienced guides to allow patients to

participate in solitude, reflection, and social connectivity, all while keeping mental and physical records of the sights, sounds and scents encountered while in nature (Selhub & Logan, 2012). While this prescription has expanded and transformed to a more commonly recognized concept of wilderness therapy, there still is vast uncertainty surrounding this as a therapeutic approach. Several important topics were identified throughout the literature review, which are relevant to the establishment of a good therapeutic intervention and the clarification of wilderness therapy. These topics include: the importance of taking into consideration any potential harm that may result from treatment, the importance of interventions that are informed and supported by theory, research, and evidence based practice which can be seen with Cognitive Behavioral Therapy and Dialectical Behavior Therapy, and finally an in-depth look at the current literature on wilderness therapy.

Research surrounding wilderness therapy has been and continues to be gaining popularity. There are numerous populations as well as client problems that are beginning to be treated through wilderness therapy. Additionally, “the therapeutic approach in wilderness therapy does not appear to force change, but instead allows the environment to influence client response through natural consequences (Russell, 2001, p. 74).

Over time, research has identified specific therapeutic approaches, which have been found to produce more positive outcomes for particular types of clients. For example, results from numerous in depth research experiments have identified Cognitive Behavioral Therapy (CBT) as effective in reducing both symptoms and relapse rates in a variety of psychiatric disorders (Beck, 2005; Cooper & Lesser, 2005). Additionally, CBT has been found to be especially beneficial with clients experiencing depression, anxiety

disorders as well as personality disorders (Wright, Basco & Thase, 2006). This is by no means a guarantee that if a client experiencing depression participates in CBT, they will experience a successful outcome; however, the current research based evidence highly supports the decision for a clinician to at least consider CBT as a treatment option.

Research is extremely valuable in helping to guide a clinician's decision in attempting to provide the therapeutic intervention best suited for a client's specific situation and needs.

### **The Potential for Harm**

More recent studies have been drawing attention to the potential for therapeutic interventions to result in adverse or neutral outcomes. Hansen, Lambert and Forman (2002) explored the psychotherapy dose-response effect and found that between 13 and 18 sessions of therapy are essential for 50% of clients to show improvement. However, after examining a national database of over 6,000 clients they found that the average number of sessions a client received was less than 5, with the rate of improvement at only 20%. This finding leads to the idea that clients are not being exposed to enough treatment sessions to result in beneficial therapeutic advances. Other recent literature evolving around the deterioration effects of psychotherapy outcomes have suggested that anywhere from 3% to 10% of clients become worse following psychotherapy (Mohr, 1995; Strupp, Hadley, & Gomes-Schwartz, 1977) while 35% to 40% do not receive any benefit at all from partaking in therapy (Hansen et al., 2002). Additionally, there have been numerous harmful effects of therapeutic interventions that have been specifically identified in recent research. Clients experiencing physical harm (Mercer, Sarner, & Rosa, 2003), a client's reluctance to seek further treatment (Boisvert, 2003), harm experienced by a client's friends and family, the appearance of new symptoms or worsening of current

symptoms, as well as a heightened reliance and dependence on the therapist (Lilienfeld, 2007) have been identified. In regards to wilderness therapy, a much more extreme concern has gained attention by Jon Krakauer (1995), who explored four deaths of teenagers during their stay at discipline styled boot camp schools. The potential for therapeutic interventions to result in harm to clients, of any definition of the term, raises a variety of ethical dilemmas and implications that clinicians need to be consciously aware of and continually addressing (Rhule, 2005). Moreover, with evidence that more mainstream approaches, which are supported by theory, research and evidence-based practice, can result in negative client outcomes, it is even more crucial for social work clinicians to be cognizant of these possibilities when they implement alternative therapeutic approaches that lack the same degree of empirical support.

Ethical concerns are of high importance regarding social work practice because the subject matter involves human beings (Arkava & Lane, 1983). Social workers have developed and continued to adhere to the National Association of Social Workers (NASW) Code of Ethics. Within this Code of Ethics, clinicians can find relevant information relating to their commitment to clients, the importance and necessity of informed consent, privacy and confidentiality, as well as an overview of important ethical values and so much more. Within various subdivisions, the Code of Ethics addresses the clinician's responsibility to ensure that clients are not harmed. Specifically the Code of Ethics states that social workers' "primary responsibility is to promote the wellbeing of clients" and that "social workers engaged in evaluation or research should protect participants from unwarranted physical or mental distress, harm, danger, or deprivation" (NASW, 2008, 5.02). As the research continues to identify the possibility of therapeutic

harm, it is imperative that clinicians continue to utilize theory and research. Clinicians are also responsible for continuously adding to the knowledge base of social work to ensure the best care for their clients, along with providing the most opportunity for success with no acceptance of client harm or danger. Additionally, “professionals must remember that when they make decisions for which little or no evidence exists, they should exercise caution and perhaps be even more vigilant in monitoring outcomes” (Mullen & Streiner, 2004, p. 115).

### **Importance of Theory Informing Clinical Practice**

Theories can be “defined as generalized propositions and concepts that explain and predict the interactional events in practice” (Anderson, 1988, p. 18). Through these theories social workers can understand what is, what is possible, and how to achieve the possible (Turner, 1996). The use of theory within social work practice has many important functions. The ability to explain and predict phenomena is often considered the most essential function of theory (Monette et al., 2008; Turner, 1996). Turner (1996) suggests that theory in social work also helps clinicians to recognize patterns and relationships between variables, anticipate outcomes, and even speculate about unanticipated relationships between variables. Turner (1996) also notes that there are multiple functions of theory; a theory allows clinicians to carry knowledge from one situation to another, to transfer knowledge and skills in a testable and evaluative way and provide a sense of assurance for clinicians. Theories guide both research and practice, focusing social workers’ attention on specific phenomena that are relevant to areas of concern for clients (Monette et al., 2008). Theories can help locate and identify important gaps in current knowledge, as well as to bring order to practice (Arkava, & Lane, 1983).

Theory also can help integrate findings from multiple independent researchers in diverse settings to provide implications for future intervention strategies (Monette et al., 2008).

Even though theories are given a great deal of attention in social work, it may be necessary to also be cautious of them. Any given theory is always “tentative in nature,” meaning that the theory is only one possible explanation for the investigated phenomenon; it should not automatically be classified as the best and final solution (Monette et al. 2008, p. 28). Continuing research is essential in attempting to identify which theory may most accurately align with specific client situations and variables.

### **Importance of Research Informing Clinical Practice**

The building of a professional curriculum or of a total professional program should rest upon understanding of the basic knowledge, values, and skills essential for competent practice, which could not be attained until that practice could be analyzed in some comprehensive and penetrating manner (Bartlett, 1985, p.3)

Social workers are extremely dependent upon research to continue the furthering advancement of both the field and the clients. At the most fundamental level, research can be defined as the systematic examination and reexamination of empirical data, which has been collected to explore the social and psychological forces which may be operating in a given situation with the end goal of description, prediction, explanation and/or evaluation (Monette et al., 2008). Research allows clinicians to answer questions such as: How effective is an intervention? Or, could one intervention be more effective than another for this particular client (Arkava & Lane, 1983)? As the research continues to be conducted in the social work profession, the assumption is that people will gain specific

benefits as a result of the outcomes, as well as the advancement of overall knowledge regarding human behavior (Monette et al., 2008). In order to ascertain the “best evidence in making decisions about human service assessment and intervention,” which aids in the development of evidence-based practice, scientific research must continue to explore and add to social work knowledge (Monette et al. 2008, p.496).

### **Evidence-Based Practice**

Evidence-based practice can best be viewed as one specific component of research that helps guide the future use of research. Social work literature strongly suggests using evidence-based practice when choosing an intervention to address a client’s presenting problem effectively (Fong & Pomeroy, 2011). Evidence-based practice is described by Rubin and Parrish (2007) as the process by which clinicians use to amplify the likelihood that their clients will be involved in the most effective intervention possible. The evidence-based practice process includes five important steps. Clinicians must first formulate an answerable question. Second, they must identify the best evidence currently available to answer that question. Third, they appraise the validity and usefulness of the identified evidence. Fourth, clinicians integrate the appraisal into their practice decisions. Finally, clinicians must evaluate the outcome to gain an understanding of what they found as well as allowing for any necessary adjustments for future use (Rubin & Parrish, 2007). This entire evidence-based practice process highlights the importance of embracing social work practices that are grounded in both research and theory (Fong & Pomeroy, 2011).

In attempts to assist clients in progressing without any harmful results, clinicians can embrace the fundamental elements of evidence-based practice: providing informed

consent for treatment, relying on efficacy data when recommending and selecting treatments, using empirical literature to guide decision-making, as well as using a systematic hypothesis testing approach with each client (McNeece & Thyer, 2004).

McNeece and Thyer (2004) describe the evidence-based practice approach as beginning with a careful client assessment, followed by the setting of clear and measurable goals for treatment, the creation of an individualized plan based on the developed goals and the monitoring of progress towards these goals, including modifications as needed.

There are also strong critics of evidence-based practice who are drawing attention to several ethical considerations, limitations and misperceptions. Rubin and Parrish (2007) identify concerns regarding evidence-based practice as ignoring a clinician's expertise, ignoring the client's values, as well as conflicting with the importance of client empowerment. Clinicians may find themselves questioning if there are enough high-quality research studies available to allow for true evidence-based practice (Mullen & Streiner, 2004). There is also heightened controversy around the idea that the evidence-based practice literature lacks adequate consideration of socioeconomic status, ethnicity and culture (Dulcan, 2005; Rubin & Parrish, 2007). Dulcan (2005) points out that there is no current evidence supporting the use of evidence-based practice or evidence-based treatments as resulting in improved outcomes. And "an intervention, no matter how effective, will not benefit a client if the practitioner lacks the necessary social work skills to 'join' with the client in building a therapeutic, working relationship, beginning where the client is" (Fong & Pomeroy, 2011, p.5).

Despite these criticisms, and in order for a clinician to most successfully assist clients in progressing, the research presented identifies that there needs to be a healthy

balance of research and theory, of which one important paradigm for understanding this relationship is evidence-based practice. Research supports that no one of these variables is beneficial as a stand-alone approach; rather, each one provides important information that together can be used to enhance the advancement of clients. Evidence-based practice encompasses each of these variables by “integrating individual practice expertise with the best available external evidence from systematic research as well as considering the values and expectations from the clients” (Gambrill, 1999, p.346). The application of evidence-based practice to nature based therapeutic interventions can help to eliminate the potential harm to clients, strengthen the credibility of intervention process and outcomes and draw more positive attention to the overall importance and positive outcomes of wilderness therapy. It is also paramount that “clients are served first, foremost, and always by identifying accurate assessment procedures and effective interventions, and by integrating them with client preferences and values” (Shlonsky & Gibbs, 2004, p.151).

### **Models Supported by Theory and Research**

It would be an oversimplification to assume that one could quickly find a complete and concise generalization of what characteristics are included in current successful social work models that are supported by clear theories as well as research. Additionally, “we are hard-pressed to systematically articulate how and why a theory is good or better than an alternative theory,” and there is little attention given to “communicating and illustrating the criteria or characteristics of good theories” (Van De Ven, 1989, p. 486). Regardless, by exploring historically strong and sound therapeutic models it may be possible to identify important characteristics that may contribute to

their success. Cognitive Behavior Therapy and Dialectical Behavior Therapy are two examples of therapeutic models which are supported by theoretical foundation, extensive research, as well as evidence-based practice. These two approaches will be explored in depth with respect to the theoretical and research development of both theories.

### **Cognitive Behavior Therapy and Dialectical Behavior Therapy**

Cognitive Behavior Therapy (CBT) is a “structured, short-term, present-oriented psychotherapy for depression, directed toward solving current problems and modifying dysfunctional (inaccurate and/or unhelpful) thinking and behavior” that was designed using multidisciplinary concepts by Aaron T. Beck (Beck, 2011). There have been various adaptations to CBT over time which have changed some of the techniques, the length of time treatments last and sometimes the focus, but the theoretical assumptions have always remained the same (Beck, 2011). The cognitive model is the grounding theory of CBT, proposing that dysfunctional thinking is common to all psychological disturbances (Beck, 2011). While “therapy must be tailored to the individual, there are, nevertheless, certain principles that underlie cognitive behavior therapy for all patients” (Beck, 2011, p. 6). CBT has ten principles, which apply to all clients even though the actual therapy may vary considerably from client to client. The CBT principles are: it is based on an ever-evolving formulation of the clients’ problems and an individual conceptualization of each client in cognitive terms; it requires a sound therapeutic alliance between the client and the therapist; it emphasizes collaboration and active participation; it is goal oriented and problem focused; it initially emphasizes the present; it is educative and aims to teach the client to be their own therapist as well as emphasizing relapse prevention; it aims to be time limited; the therapy sessions are

structured; it teaches clients to identify, evaluate and respond to their dysfunctional thoughts and beliefs; and lastly, CBT uses a variety of techniques to change thinking, mood and behavior (Beck, 2011). Since CBT has been widely researched, it has been identified as an evidence-based practice, which has been successfully applied to clients experiencing depression, anxiety and obsessive-compulsive disorder among other diagnoses (Cooper & Lesser, 2005).

Marsha Linehan developed a cognitive-behavioral psychotherapy to treat clients suffering from borderline personality disorder who were also experiencing chronic suicidality and other difficult to treat mental disorders (Lynch, T.R., Trost, W. T., Salsman, N. L., & Linehan, M. M., 2008; Shearin & Linehan, 1994). This treatment came to be known as Dialectical Behavioral Therapy (DBT). The biosocial theory of personality functioning is the theoretical base for DBT, stating that borderline personality disorder is “primarily a systemic dysfunction of the emotion regulation system that stems from biological irregularities in conjunction with certain types of environments and their interaction over time” (Shearin & Linehan, 1994, p. 61). DBT assumes that the maladaptive behaviors a client displays were learned through respondent/classical conditioning, operant/instrumental conditioning, and modeling (Robins, Rosenthal & Cuper, 2010). It is through these same learning techniques that the therapist can help the client to learn and utilize more adaptive behaviors.

DBT is a manualized treatment consisting of four treatment modes designed to address a client’s emotional regulation. The four treatment modes include weekly individual psychotherapy, skills training, consultation/supervision for the therapist and telephone consultation/coaching as needed between the client and therapist (Shearin &

Linehan, 1994). During these treatment modes, therapists work to help their client's correct deficits in behavioral skills, motivate their clients by removing detractors from success and increase the reinforcement of effective behaviors (Lynch et al, 2007). DBT has been empirically evaluated numerous times and the outcome data support DBT as an empirically supported treatment approach (Robins et al., 2010).

Both CBT and DBT have identifiable theoretical foundations used to ground their treatment approaches. CBT and DBT have been empirically evaluated and identified as evidence-based practices. As the research has been conducted on both of these approaches, adaptations have been made allowing each treatment to be specifically adjusted to best treat designated populations and specific clients. An in-depth examination of CBT and DBT allows for the identification of principles, theories, core beliefs and therapeutic techniques that are essential to the definition of each treatment approach. It is difficult to identify specific characteristics of successful therapeutic approaches that are grounded in theory and research. By examining two strongly supported approaches and evaluating what is essential to their existence, social workers can observe and translate these concepts to less mainstream approaches, such as wilderness therapy, in hopes of gaining similar support and documented research.

### **Wilderness Therapy**

Unsurprisingly “natural environments offer unbelievable benefits for our health” (Selhub & Logan, 2012, p.6). Research has found that interaction with nature, domains of contact including animals, plants, landscapes, and wilderness experiences can provide benefits for one's mental health as well as one's physical health (Frumkin, 2001). Additionally “exposure to nature-based environments is associated with lower blood

pressure and reduced levels of the stress hormone cortisol (and other objective markers of stress)” (Selhub & Logan, 2012, p.7). Finally “on the clinical level, this may have implications for patient care. Perhaps we will advise patients to take a few days in the country, to spend time gardening, or adopt a pet” (Frumkin, 2001, p.239).

Other research about the benefits of nature on physical and mental health lends some support to implementing wilderness therapy approaches. Selhub & Logan, (2012) “Scientific researchers are investigating nature’s role in mental health at a time when humans are more distanced from the natural world than ever before” (p.5) As the technology has continued to advance, human interaction with nature and face to face experiences with other humans are dramatically being replaced with screen time, video games, computer web-surfing, and television among other gadgetry. The true effects of our increased screen time, and associated decrease of nature-based interactions are hard to decipher, but are currently being examined in great detail. Historically, evidence has been found in records, which show that “walking in gardens, exposure to rooms filled with light, staying close to water, and other nature-based activities were effective components of standardized plans to improve mental health and sleep” (Selhub & Logan, 2012, p.13). In 1865, landscape architect Frederick Law Olmsted completed a federal report, which found that “immersion in nature is favorable to health, vigor, intellect,” and “while obviously not a cure for mental illness, nature-based recreation was described as a means for reducing mental and nervous excitability, moroseness, melancholy, or irascibility that would diminish optimal mental functioning” (Selhub & Logan, 2012, p.14).

When attempting to explore wilderness therapy, an almost immediate dilemma will arise. Trying to define what exactly wilderness therapy is and what components it consists of proves to be extremely challenging. Although the research has identified contact with nature as a health promotion intervention, it is difficult to find a consistent and well-explained definition of what it looks like in a therapeutic context (Maller, Townsend, Pryor, Brown & St Leger 2005). In current literature, wilderness therapy is identified interchangeably with numerous terms such as challenge courses, wilderness experience programs (WEPs), adventure-based therapy, nature therapy, therapeutic camping, adventure camp, and outdoor behavioral healthcare among other labels. Along with variances in approach labels, there are multiple different definitions of wilderness therapy. It has presented difficult to compare and replicate research studies on wilderness therapy activities, processes and outcomes due to the volume of different definitions and approach labels (Russell, 2001).

Upon further in-depth research, it appears as though WEPs act as an umbrella, encompassing programs and approaches that include “outdoor programs in wilderness or comparable lands for the purposes of personal growth, therapy, rehabilitation, education or leadership/organizational development” (Friese, Hendee & Kinziger, 1998, p. 42).

Therapy and rehabilitation, changing delinquent behavior, chemical dependency recovery, acceptance and adjustment to disabilities and loss, spiritual renewal, team building, physical challenge, and character building are potential aims of wilderness experience programs which use the healing and inspirational elements of challenging opportunities of wilderness experience to accomplish these goals (Friese et al., 1998, p. 3)

Of particular concern regarding wilderness therapy is the most recent inaccurate portrayal of these programs as boot camps. Jon Krakauer (1995) wrote an article exploring the misrepresented wilderness therapy experience, noting that, “in the past five years at least four young people have died, the victims of alleged beatings, starvation, and emotional abuse” (p.1). At a quick glance, it is easy to translate these dramatic and extremely concerning outcomes to wilderness therapy as a whole; however, upon further investigation, these boot camp style behavioral modification camps are extremely different from wilderness therapy. Unlike the boot camp styled behavioral modification camps, “wilderness therapy programs are supervised by a licensed mental health practitioner, have trained clinical staff, develop individualized treatment plans monitored by licensed clinical staff, and conduct formal evaluations of treatment effectiveness”(Becker, 2010, p.61).

Additionally, there is considerable variability in the definitions, explanations, and therapeutic strategies utilized throughout the research exploring wilderness therapy. With the abundance of current available literature exploring topics surrounding the implementation of nature in therapy, it is important to analyze it for similarities, differences and overall gaps in hopes of strengthening the concept of wilderness therapy. In hopes of guiding future program designs, enhancing future research efforts, achieving recognition, accreditation and insurance authorization, it is important for wilderness therapy to work towards a consistent definition, theoretical base and use of the evidence-based practice model (Russell, 2001). In this study, I will seek to add to the literature on wilderness therapy by examining current research to identify uses of any theoretical bases that may be used to strengthen the field of wilderness therapy. By identifying common

themes among different wilderness therapy approaches, clinicians might better be able to consider defining the principles of wilderness therapy.

### **Conceptual Framework**

Evidence-based practice has provided a conceptual framework, which has helped to guide this research. At the most basic level, evidence-based practice is used to describe when clinicians use the best evidence possible in order to make clinical decisions (McKibbin, 1998). Evidence-based practice was selected because of its focus on a unique blend of scientific evidence, clinician expertise and client preferences together to provide each client with the best possible care. The purpose of this study is to examine the current literature on wilderness therapy through an evidence-based practice lens, to better define wilderness therapy, its theoretical foundation and its therapeutic techniques.

Evidence-based practice is rooted in medicine, where it was emphasized that clinicians should use their scientific training in combination with their judgment to interpret and individualize patient care. The use of evidence-based practice in social work is an alternative to authority-based decision making, which relies on consensus, anecdotal experience and tradition for client care (Cooper & Lesser, 2011). Evidence-based practice relies on a partnership of scientific evidence, the expertise of the clinician, in addition to the individual needs and choices of a client (McKibbin, 1998).

Conceptualizing this research with an evidence-based practice framework allows for the comparing and contrasting of numerous wilderness therapy approaches, program definitions, theoretical foundations, and therapeutic techniques. With this framework, the five evidence-based practice steps: formulating an answerable question, identifying the best currently available evidence for answering the question, evaluating the validity and

usefulness of the identified evidence, integrating this information into practice decisions and evaluating the outcomes, can be utilized to explore current wilderness therapy research and identify areas of strength, as well as areas of concern (Rubin & Parrish, 2007). Evidence-based practice “involves complex and conscientious decision-making based not only on the available evidence but also on patient characteristics, situations, and preferences” (McKibbin, 1998, p. 396).

Through the use of evidence-based practice skills, social workers attempt to provide quality services to clients that are informed by practice experience and critical thinking, supported by the evidence, consistent with clients’ personal and cultural values, and applied during all phases of the therapeutic work (Cournoyer, 2004, p. 19)

Evidence-based practice is not a new concept in the field of social work. Social workers use the NASW Code of Ethics for guidance to their work. Throughout the Code of Ethics, though not explicitly stated, the importance of evidence-based practice can be found. While exploring the Ethical Principles in the Code of Ethics, one will find that social workers should “act honestly and responsibly and promote ethical practices on the part of the organization with which they are affiliated” (Value: integrity). Social workers should also “practice within their areas of competence and develop and enhance their professional expertise” (Value: competence) (NASW, 2008). Further exploration of the Code of Ethics shows that numerous principles also relate to the importance of evidence-based practice. Section 4.01 (c) says, “social workers should base practice on recognized knowledge, including empirically based knowledge, relevant to social work and social work ethics”, while 5.02 (c) says “social workers should critically examine and keep

current with emerging knowledge relevant to social work and fully use evaluation and research evidence in their professional practice” (NASW, 2008). The NASW Code of Ethics supports the importance of using evidence-based practice throughout the field of social work, from school social workers to child protection social workers and even social workers involved in wilderness therapy.

### **Methods**

An examination of current literature on wilderness therapy identifies extensive diversity in the definition of the therapy, the application of models and techniques of the therapy, the populations and problems with which wilderness therapy is used, and the various documented outcomes. Due to the volume of current literature regarding wilderness therapy and a lack of identified themes, theories, and models/interventions, a systematic review was used to explore these issues because, “a systematic review aims to comprehensively locate and synthesize research that bears on a particular question, using organized, transparent, and replicable procedures at each step in the process”(Littell, Corcoran & Pillai, 2008, p.1).

There are several questions regarding wilderness therapy that this study aimed to explore. The main focus of this study was to explore and identify any consistency surrounding the use of theoretical frameworks and foundations for wilderness therapy that were discussed in current literature. Additionally this study explored and identify any consistency within the current literature around the components that are incorporated within wilderness therapy. Additionally, as with most any research, measured outcomes of the data reviewed were examined as well as the populations and problems that were treated with wilderness therapy.

**Selection Criteria**

The objective was to review (1) all available published studies that explored wilderness therapy (2) theoretically or empirically, that identified (3) wilderness therapy theoretical foundations or frameworks and discussed (4) the specific components incorporated in wilderness therapy programs. Since the preliminary search for literature identified thousands of articles varying in relevance to this research projects questions, only articles that contained the words wilderness therapy in the title or abstract were considered for initial inclusion. Studies were also excluded if they were too specific, that is they focused on only one specific type of wilderness therapy rather than wilderness therapy in general. Unpublished studies, such as dissertations were also excluded. All studies that met search criteria were reviewed

**Search Strategy**

The literature search was carried out from May 2013 through May 2014 using two databases: Social Work Abstracts and CLICnet using the term wilderness therapy. The preliminary search results identified 3,222 studies.

The title and abstract of each identified article was reviewed. Those 3,192 articles that did not meet the inclusion criteria were eliminated. Of the 3,222 studies that were identified, 30 fit the preliminary criteria for inclusion. These 30 articles were then reviewed in full to ensure that they fit the search criteria, those that did not were discarded. Articles were excluded if they only included a vague mention of wilderness therapy theoretical frameworks or foundations, or if the exact same authors conducted a previously included article. Twenty articles were excluded during this assessment,

leaving 10 to be included in this systematic review. The outcome of the systematic search and selection process is summarized in Figure 1.

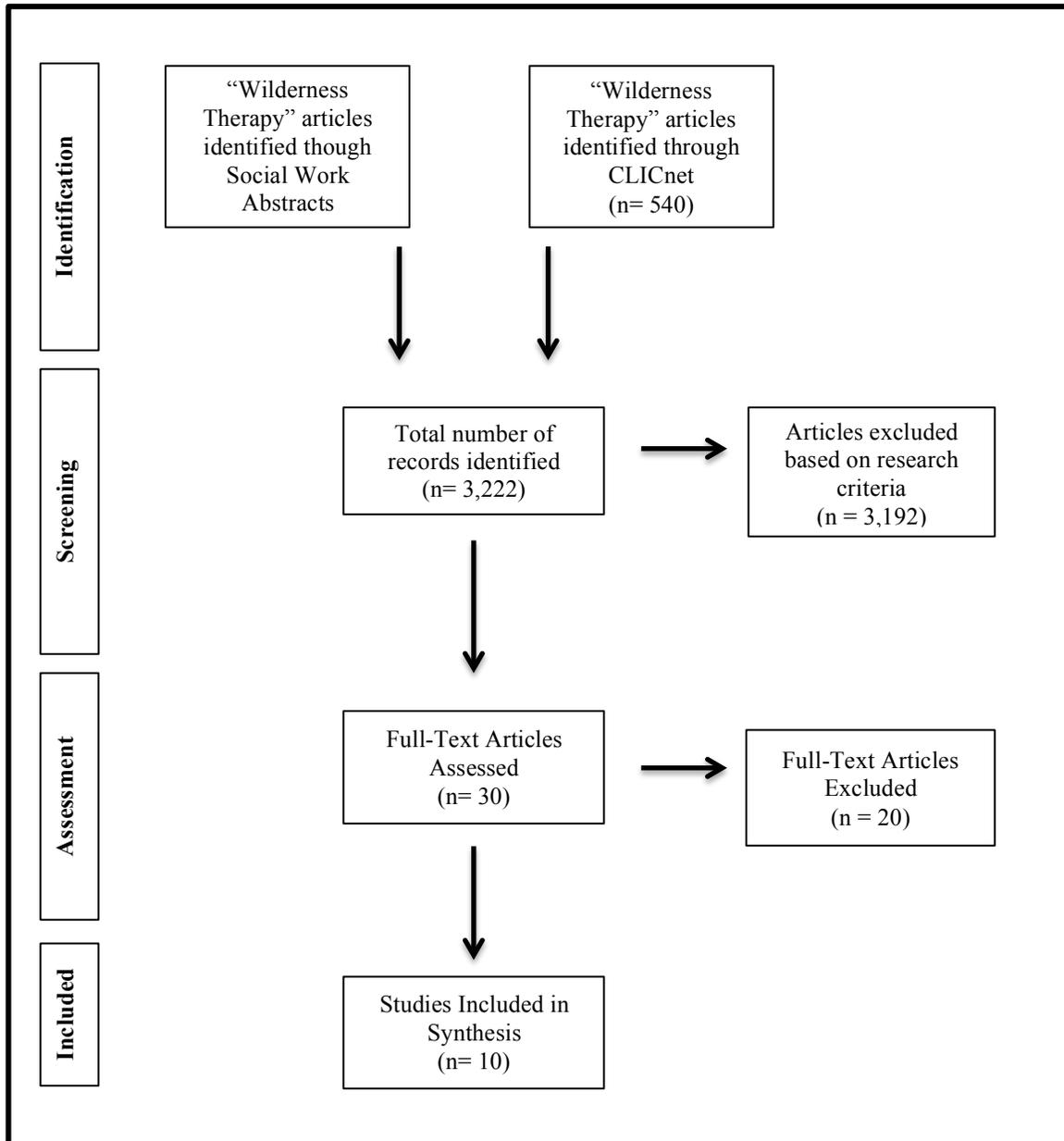


Figure 1. Flow diagram of studies throughout the selection process

**Data Abstraction and Analysis**

Each of the ten articles included were critically reviewed four separate times. Important data from each article was extracted during these reviews. During the first critical review data was extracted surrounding the theoretical foundation or framework used to inform the wilderness therapy approach. From the second critical review, data was extracted regarding any cited components of wilderness therapy. During the third critical review, data was extracted that referenced the populations and problems wilderness therapy has been used to treat. When applicable, during the fourth and final critical review, data was extracted that concerned wilderness therapy program outcomes. Once the data had been extracted it was compiled into summary tables for analysis and synthesis.

**Limitations**

Limitations of this study are related to the fact that there were only two data bases reviewed for article inclusion and that only ten articles were reviewed. There were a couple of occasions when articles appeared to fit the inclusion requirements but were not fully accessible between either of the two databases for full review. Additionally, while books were reviewed for general information, no review was conducted on current wilderness therapy books.

In the field of wilderness therapy there appears to be a couple of researchers who have dedicated their time and effort to conducting numerous research studies in hopes of advancing the field. Due to their dedication of furthering wilderness therapy, there were two authors, Joanna E. Bettmann and Keith C. Russell who were involved in the research and writing of more than one of these reviewed articles. Joanna E. Bettmann is listed as

an author on two of the ten articles while Keith C. Russell is listed as an author on three of the ten articles. This could result in a less diversified analysis of articles since their ideas, understandings and questions could be portrayed the same in each of their articles. There were also occasions when reviewed articles referenced or quoted other articles that were included in the review, again limiting the diversity of the included articles.

### **Findings**

Ten studies met selection criteria and fell into six specific groupings according to the wilderness therapy theoretical foundation identified:

- Systems Theory/Family Systems (4 articles)
  - With families (3 articles)
  - With groups (1 article)
- Eclectic Framework (2 articles)
- Attachment Theory and Family Systems Theory (1 article)
- Group Therapy Theory (1 article)
- Motivation to Change Theory (1 article)
- Psychodynamic Theory (1 articles)

While the majority of findings fell within these six distinct groupings, there were also additional findings worthy to make reference to. These additional findings explored the components that are incorporated in wilderness therapy, the populations served by wilderness therapy as well as wilderness therapy program outcomes.

#### **Systems Theory/Family Systems Theory (4 Articles)**

Of the ten identified articles identified that explore the theoretical foundation of wilderness therapy, three identified the use of family systems theory and one used a systems theory lens to explore the effects of adolescent wilderness therapy 25 years later. Of the four articles, three specifically looked at wilderness therapy as a treatment for adolescents and their families, and while the fourth article made no mention of family systems, it used a systems lens to explore the effects or lack of effects attributed to group

experiences. While each of these articles made mention of the use of either family systems theory or systems theory, none of them explicitly defines the theory. Not all of the ten articles referenced sources for theoretical foundation definitions and in order to better understand the use of these theories as wilderness therapy frameworks, some basic definition is necessary. Specifically, “biopsychosocial assessment and the development of appropriate intervention strategies for a particular client require consideration of the individual in relation to a larger social context” (Friedman & Neuman Allen, 2011, p3). Systems theory encompasses the person in the environment, elaborates on these increasingly complex systems and gives social workers the opportunity to understand the components and dynamics of a clients system (Friedman & Neuman Allen, 2011). Within the family systems theory, the family is a subsystem of the community where the whole is greater than the sum, a change in one part of the system will result in changes to other parts of the system, families develop and change over time, families represent a generally open system, as well as individual dysfunction is often reflective of an active emotional system (Turner, 1996).

**Family systems theory.** Three articles identified family systems theory as a part of the wilderness therapy framework when treating adolescents and their families. Harper, Russell, Cooley and Cupples (2007) conducted a case study using Catherine Freer Wilderness Therapy Expeditions (CFWTE). CFWTE is a short-term, 3-week treatment program for adolescents with emotional, behavioral and substance use problems which also focuses on the inclusion of families in both the treatment process as well as follow-up practices. One CFWTE site was chosen for this case study, which consisted of 252 adolescent participants enrolled in a 21-day expedition. A convenience

sample of admissions was taken between March 2001 and February 2002. Phone interviews and questionnaires were presented prior to the beginning of the treatment, two months post treatment and 12 months post treatment.

The family systems theory approach is used to guide the CFWTE, specifically in the program's adherence to the idea that change in the family system needs to occur in order to assist and support the individual changes of an adolescent that were made during treatment. "The family is reasoned to operate as a system and experience interactions and reactions among its members, and can be seen as the social institution with the most influence on individuals in modern society" (Harper et al., 2007, p. 113). Throughout the treatment process, the treatment groups as well as the staff create a metaphoric family system, which allows the adolescents to learn and practice new ways of communicating and behaving.

CFWTE incorporates challenging program activities; such as backpacking, hiking and rafting, adjustment to the intensive conditions of outdoor living as well as the participation in both group and individual counseling. Throughout this program, the wilderness is utilized as a healing factor, self-efficacy is promoted through task accomplishment, a therapeutic social group is developed and the therapeutic relationship is restructured.

CFTWE has been found to significantly reduce scores in substance, mood, and behavior problems as reported by both adolescents and their parents. Additionally, CFTWE showed maintenance of some of these changes at a twelve-month follow up with significant improvement of school performance and suicide thoughts and ideation. Although there is limited understanding of both the family involvement variables and

subsequent outcomes, the findings of this study suggest that the family systems theory framework and the inclusion of families throughout treatment, as a part of the wilderness therapy program, can result in the stabilization and lasting change of adolescent problem behavior for both the adolescent and the family.

Bandoroff and Scherer (1994) studied a treatment program called The Family Wheel. Adolescents completed a 21-day traditional wilderness therapy program and were then joined by their parents for an additional four-day program. Families who agreed to participate in the Family Wheel program had originally been referred to a wilderness program for the treatment of their problem adolescents. All families who had adolescents participating in the wilderness expedition were invited to participate in the follow up Family Wheel program, with a total of 27 families agreeing to participate. Information regarding adolescent behavior, family functioning, and adolescent self-esteem was collected from families who had an adolescent in the wilderness expedition but who did not participate in the Family Wheel program as well as from families who had an adolescent in the wilderness expedition and who did participate in the Family Wheel program. Questionnaires were sent on the first day of the wilderness expedition, prior to completing the expedition, and again at a 6-week follow up from the completion of the Family Wheel program.

The traditional wilderness therapy program was a survival expedition that took place in the high desert terrain of southern Idaho. Each adolescent was given the basic survival necessities, which included but was not limited to a blanket, one set of clothing, a journal, survival rations and a knife. Each day the adolescents hiked several miles as a group while working to master primitive living skills such as starting matchless fires and

setting up camps. During the last 3 days of this program, adolescents participated in a 'solo' where they had the opportunity to experience intensive reflection and self-introspection. Throughout the 21-day expedition individual therapy sessions were conducted with each adolescent on three separate occasions. Following the expedition, adolescents were reunited with their families for a four-day program, which blended wilderness therapy interventions with family therapy in hopes of reorganizing the family system to maintain the beneficial changes of problematic behaviors. During these last four days themes were introduced and demonstrated to the families through exercises and experiential activities as metaphors for family functioning. These themes centered on lessons the adolescent had learned during their expedition, allowing the adolescents to display their mastery while helping to teach the skills and lessons to their family. Family therapy was provided to individual families throughout this process.

The four-day family program, the Family Wheel, utilizes structural family therapy tools such as unbalancing, joining, and enactment to promote change among participants. The authors imply the influence of the family systems theory as more important than the wilderness therapy experience by stating, "the salience and power of the family system may override the beneficial effects that the individual experienced in the wilderness" (Bandoroff & Scherer, 1994, p. 177). At the conclusion of the program each participant completed program evaluation questionnaires. "Many respondents commented that the experimental activities, the metaphors, and the processing sessions were particularly meaningful and outstanding aspects of the program" (Bandoroff & Scherer, 1994, p.185). The results of this study found that adolescent ratings of delinquency dropped, families described functioning within the normal range, parent rating of problem behavior

improved, police and court contacts were decreased, and the adolescent's ratings of their self concept increased. Although there is again a limited understanding of both the family involvement variables and subsequent outcomes, the findings of this study also suggest that the family systems theory framework and the inclusion of families throughout treatment can result in the change of adolescent problem behavior for both the adolescent and their family.

**Systems theory with families.** Mason (1987) identified and described the integration of systems theory in wilderness therapy when working with families. "The relevance of changing the family context through a new and natural environment allows family members to experience deeper levels of intimacy" (Mason, 1987, p. 91). In this particular model, wilderness family therapy works with the systems theory framework to develop trust within the family, deepen family support as well as to aid in open communication.

Systems theorists have long held that an increase in anxiety can produce change; in the wilderness setting, a heightening of anxiety would be quite natural given the stress brought on by the new experience as well as the unfamiliar environment (Mason, 1987, p.92)

She examines the participation of families in wilderness family therapy, and identifies the beneficial inclusion of the basic concepts of the systems theory and nature. "This ecosystem approach incorporates the symbolic experiential therapy of Carl Whitaker with the basic tenets of systems theory" (Mason, 1987, p.91).

In wilderness family therapy, family members participate in wilderness experiences, which can include rafting, hiking, canoeing, rock climbing, biking, along

with various other activities. These experiences are then combined with family group discussions and/or family therapy to help build trust, communication, physical development, social development and emotional development. “Here they faced their vulnerabilities, and consequently deepened their self-awareness through facing trust, fear, and control issues” (Mason, 1987, p.91).

In addition to having a strong tie to systems theory, this detailed exploration identified numerous premises and principles that have helped form the basis for wilderness family therapy. There were seven premises identified, which include the immediacy of effects of a wilderness experience, the important reliance upon trust, learning to differentiate between real fear and perceived fear, the benefits from positive uses of stress, the ability for each client to find their own ‘edge’, the ability to find the natural caring that lies within each person, and the use of equality. Additionally, there were important eight principles which include the unlocking of the unconscious, the conversion of energy: multi-system integration, the building of family strengths through an individual’s growth, the use of our-selves, the important value of metaphors, brain expansion, and the importance of role flexibility along with content, process and circularity.

According to the author, the use of wilderness metaphors throughout wilderness family therapy is very influential. These wilderness metaphors are translated into everyday life to help deepen the understanding of self-knowledge, self-esteem and intimacy between the individual and the family unit. For example, when rock climbing, it is rather clear when a participant is on top of the rock, stuck in the middle, or frozen at the bottom looking up to where one wants to be. This rock climbing metaphor can then

be translated into a participants' everyday life and help them to become more honest with themselves and their family. Importantly, no data were reported to support this particular component of wilderness therapy.

**Systems theory with groups.** Three of the four articles presented evidence to support the inclusion of the basic tenets of the family systems theory and systems theory as a framework for wilderness therapy with families. However, one article began by questioning the benefits of using systems theory as a framework for wilderness therapy when used with groups. Davis-Berman and Berman (2012) conducted a follow up study of four adults who participated in a wilderness therapy program 25 years ago. Through semi-structured interviews, they found conflicting evidence about the importance and role of relationships among participants in addition to the group experience. Using a systems theory framework, group dynamics are of critical importance, and the group experience is often attributed to the change experience. However, while reflecting on the past wilderness therapy experiences, these participants made little reference to the group or relationships. "It was quite revealing that very little, if any, reference was made to other participants and the power of the group experience by the interviewees" (Davis-Berman & Berman, 2012, p.336). Although this was the only article identified that explored the use of wilderness therapy with a foundation in systems theory for the treatment of groups, this finding contrasts with other research cited in Davis-Berman and Berman regarding the identified importance of the relationships and group experiences on change during therapy.

While this article questions previous research supporting the importance of the group experience, the researchers did find four powerful themes relating to the long-term

meaning of a wilderness therapy experience. The first theme they identified was a sense of time, “the timing of the wilderness therapy experience in their lives was crucial to its impact. All were experiencing family and personal problems at the time, so they were ready for this therapy experience and were open to change” (Davis-Berman & Berman, 2012, p. 331). The second theme was the importance of relationships. This theme embraced conflicting information; some of the participants focused on their relationships during their wilderness therapy experiences, while others identified it as a much more personal and individual experience. The third theme they discovered was a sense of place. “The wilderness setting was mentioned as a high point of the experience by all the interviewees” (Davis-Berman & Berman, 2012, p. 333). The last theme identified was labeled lessons for life. “All the interviewees talked about the wilderness therapy program as having an impact on their lives, even after nearly 25 years” (Davis-Berman & Berman, 2012, p. 334). While no participants expressed that their wilderness therapy experience was life changing they noted that they felt it was valuable nonetheless.

These four articles have identified systems theory and family systems theory as frameworks that have been used to help design and formulate wilderness therapy programs. While together they have the identification of these theories in common, they also have allowed for numerous variances to be identified between all four articles. Mason (1987) was the one article that presented the most in-depth detail, helping to create a rather sound image of what wilderness family therapy could look like and involve. Only one article explored the systems theory framework to examine the use of wilderness therapy with groups, and it questioned the importance of the use of systems theory when respondents identified a lack of the overall group importance to their

success. Three of the four articles defined wilderness therapy or experiences in terms of hiking, canoeing, biking and other such activities. The fourth article by Bandoroff and Scherer (1994) identified the 'traditional' wilderness therapy experience as more of a survival hike and skill building experience with no mention of the incorporation of activities such as rock climbing or biking. This suggests a lack in coherence as to what wilderness therapy really is and makes it difficult to compare different wilderness therapy experiences. All four articles identified as least one, but often more, positive outcomes for participants of wilderness therapy developed with a systems theory or family systems theory foundation. However, based on the presented articles, it still remains unclear as to whether the positive results are a consequence of one specific aspect of the intervention, and if so which aspect, or if these are simply overall outcomes.

#### **Eclectic Framework (2 articles)**

While each of the articles identified thus far have made mention of the use of more than just one theory as successful contributing frameworks for wilderness therapy, there were two research articles that provided a more thorough identification and explanation of an eclectic theoretical framework. In the first of these articles, Hill (2007) notes, "many wilderness therapy programs emphasize an eclectic approach to working with at-risk youth" (Hill, 2007, p.339). Adolescents have historically been identified as difficult population to work with, regardless of their presenting concern(s). Wilderness therapy offers a unique opportunity to work with adolescents by adjusting treatment to their specific needs. Wilderness therapy can vary widely in terms of the population served, the wilderness activities included, the duration of stay and so on. However,

“despite these difference, the common elements are the natural setting, the reliance on group interactions, and the perception of risk in activities” (Hill, 2007, p. 338).

Hill (2007) explores the philosophical foundations of wilderness therapy in an article created to give an overview of wilderness therapy and to prepare wilderness therapy youth mental health counselors. The first framework she identifies is ‘challenge by choice’, where participants commit to working together with the group to achieve both individual and group goals. In ‘challenge by choice’, adolescents are voluntary participants, and they may withdraw from the activities at any time. Hill (2007) also identifies that wilderness therapy has been known to integrate tenets of behavioral therapy, Adlerian therapy, and reality therapy. These tenets include but are not limited to the concepts of natural consequences, encouragement, modeling, reinforcement, problem solving, behavior rehearsal, and group work.

Adolescents are naturally seeking a success identity; however, their progress may be hindered by the lack of experiences of love and worth.

The group experience in wilderness therapy provides a medium to experience being worthwhile and valued, while the initiatives and camping provide opportunities to be successful (Hill, 2007, p. 340)

Wilderness therapy has been offered as a treatment option for adolescents across a wide array of concerns ranging from mental health to substance use and abuse. While overall the research findings suggest positive outcomes and evidence of these eclectic frameworks, Hill (2007) concludes that there is an extremely important gap in understanding how exactly wilderness therapy works, who it works best for and under which circumstances.

Russell (2001) also presents a more eclectic theoretical framework for wilderness therapy. While working to define wilderness therapy, the author includes an analysis of four other articles, what theoretical foundation they utilize, what the key components of their program are, if they require any licensed staff members and if they are dependent on being conducted in the wilderness. Of these four articles, two identify the Outward Bound model as their theoretical foundation, one identifies the importance of systems theory but does not actually reference a specific therapeutic approach noting that it should be left up to the individual program, and the last article notes generic group therapy, group system model, inter-personal behavioral models, the experience of natural consequences and a modified form of group psychotherapy.

Russell (2001) acknowledges the importance of establishing theoretic frameworks on the current aim towards validating wilderness therapy as a viable treatment option. Many of these common concepts are based on traditional wilderness programming ideas dating back to the 1960s in programs such as Outward Bound, but which are then integrated with an eclectic therapeutic model based on a family systems perspective with a cognitive behavioral treatment emphasis (Russell, 2001, p.74)

Outward Bound was designed as an alternative treatment for adolescent delinquents by Kurt Han in the late 1960s, early 1970s and is often referred to as the ‘Hahnian’ approach. This approach is known to include a group process, a series of challenges to be conducted in the wilderness or unfamiliar environment, various therapeutic techniques and flexibility in length of time and population served. In addition to the Outward Bound approach, Russell (2001) identifies frameworks based on natural

consequences, the use of metaphors, and rites of passage. Of the ten articles reviewed, this article was unique in that it was the only article to discuss the importance of wilderness therapy programs having theoretical foundations, as well as identifying the progression of the wilderness therapy process through phases or stages. Russell (2001) identified three important stages experienced by wilderness therapy participants. The first stage is a cleansing phase, which begins with a healthy diet, physical exercise and the teaching of both survival skills and self-care skills. Once the cleansing stage is completed, participants enter phase two, which is identified as a personal and social responsibility phase. During this time metaphors are used to transfer learning from the wilderness into everyday life, new behaviors can be modeled and practiced with peers and staff, all which are reinforced with natural consequences. During the last phase, or the transitional and aftercare phase, participants learn how to bring these newly learned lessons home, set goals, and working with staff to facilitate outpatient resources.

These two articles present the theoretical and philosophical premises of wilderness therapy. While they both examine wilderness therapy in terms of theoretical foundation, they are both more elusive when it comes to identifying what exactly wilderness therapy incorporates. Russell (2001) speaks to the incorporation of a group process and series of challenges within wilderness therapy, but with very basic explanations as to what exactly this means. Hill (2007) does identify some experiences that are often included in wilderness expeditions such as camping and backpacking, but little more of the wilderness therapy experience is identified. As a more unique component of wilderness therapy through Russell's (2001) review of other current literature is the importance of careful screening and selection of potential candidates, as

well as the creation of individualized treatment plans. It is interesting to note that although these articles are unique in the way in which they define the theoretical foundation of wilderness therapy, they do have similarities to the other articles, which identify more specific theoretical foundations. Both Hill (2007) and Russell (2001) make mention of the use of metaphors within wilderness therapy. Russell (2001) notes that one goal is to help clients to generalize metaphors to real life, for example metaphors about natural consequences or metaphors used to represent their family. Hill (2007) also notes the important integration of metaphors as a way to transfer learning from the wilderness therapy experience back into the client's real life experience.

#### **Attachment Theory (1 Article)**

One article identified attachment theory as part of a useful framework for working with adolescents through wilderness therapy. "Attachment theory hypothesizes that our early relationship experiences create the context from which our later understanding and use of important relationships occur" (Bettmann, Olson-Morrison & Jaspersen, 2011, p. 183). When exploring the study's findings, the authors went further to identify the benefits of a unique combination of attachment theory with family systems theory to create an attachment-based family systems theory framework. Bettman et al., (2011) noted that previous research has found that attachment theory can help clinicians to better dissect and understand adolescent relationships. Additionally, family systems theory can be used to support goal corrected partnership, where both the adolescent as well as the adult present flexibility together to make the necessary changes to reach the healthy goals of their relationship.

In this study, the attachment and attitudes of adolescents participating in wilderness therapy towards their parents, other adult figures and therapists were explored. It is believed that a disruptive event is necessary in order to begin to alter attachment patterns, which for many participants was experienced because they were not informed ahead of time of their required participation in treatment. When using the attachment theory as a framework for wilderness therapy, the authors emphasized small treatment groups with a high staff to client ratio. Additionally, by its very nature, wilderness therapy provides numerous opportunities to observe the many attachment needs through separation, loss and reunion. “In wilderness therapy programs, clients must face regular losses, separations, and reunions with program staff and peers, as students graduate from programs and staff finish their weeklong shifts”, which activates the client’s attachment system (Bettman et al., 2011, p. 185).

Semi-structured interviews were conducted with thirteen adolescents between 14 and 17 years old who participated in a wilderness therapy program in southern Utah. This wilderness therapy program ranged from five to twelve weeks and participants spent most of their days hiking to new campsites. Each day also included participation in an academic curriculum, which was based on the wilderness experiences and allowed the clients to receive school credit upon completion of the program. Results of this study found that the wilderness program helped the adolescents to improve their perspectives on parental relationships as well as feelings of trust within parental relationships. Participants also expressed that the wilderness program had helped them to develop an increased openness and trust.

While exploring this wilderness therapy program in Utah, it is rather unclear as to what was included in the wilderness therapy experience other than hiking and schoolwork. The findings of this study also recommended the implementation of relational interventions in wilderness therapy to help clients form healthy relational dynamics, but failed to elaborate what this might look like or what it should include.

### **Group Therapy Theory (1 Article)**

Of the ten articles, one article identified that the wilderness therapy framework can be strongly influenced by group therapy theory. Wilderness therapy is a unique treatment option due to the inability to clearly separate therapeutic moments from non-therapeutic moments, which presents numerous ethical considerations and concerns. While discussing this along with various ethical considerations for mental health professionals working in wilderness therapy, Becker (2009) briefly explores the theoretical integration of wilderness therapy. He notes specifically that current wilderness programs vary widely in both structure and focus; however, regardless of the wide variances, group therapy theory is identified as an important part of the theoretical foundation for wilderness therapy. Throughout the treatment process “wilderness therapists must be highly attuned to both the state of the individual and the group” (Becker, 2009, p.54).

While this article does identify group therapy theory as a theoretical foundation of wilderness therapy, it fails to explore what this looks like, how it impacts treatment outcome or why it is beneficial. Although no specific mention was made in this article to family systems theory, there was a section that discussed the importance of the involvement and support of the parents and family throughout the treatment and aftercare

process. The involvement of parents and family has been positively related to the adolescent's ability to maintain the changes and advancements made during treatment. While this article does identify important key components of wilderness therapy such as the group process and the benefits of family involvement, it fails to discuss these ideas in further detail. It is unclear what the important aspects of the group process are and what part of family involvement is beneficial. Similar to some of the other articles that have been explored, little detail is mentioned regarding the wilderness therapy components besides hiking, camping and backpacking.

### **Motivation to Change Theory (1 article)**

One article identified the motivation to change theory as a piece of wilderness therapy framework. Motivation to change relies heavily on a client's desire to change, to seek treatment, and to accept help. While articles previously identified have implied positive benefits of basing wilderness therapy in specific theoretical foundations, this article begins by exploring a possible problem associated with the use of the motivation to change theory as a wilderness therapy framework. Bettmann, Russell and Parry (2013) identify a specific concern regarding voluntary versus involuntary clients of wilderness therapy. The assumption that individuals are seeking any therapeutic intervention willingly and with a desire to change is often inaccurate in wilderness therapy. Wilderness therapy for the treatment of substance use disorders often has a high potential to be involuntary with clients often coerced into treatment. This coercion can create a barrier to the motivation to change. "Can adolescents change even if they don't want to?" (Bettmann et al. 2013, p.1041).

To further explore this and other concerns, 41 adolescents who were admitted to an eight-week wilderness therapy program in Colorado completed a set of assessments upon admission, discharge and six-month post treatment. During this treatment program, participants lived in a wilderness environment where they received treatment daily. During this wilderness treatment experience participants lived without most modern conveniences such as electricity, plumbing and electronics. Participants were provided a unique opportunity to depend upon each other along with program staff while they learned primitive living skills. It was determined that the adolescent's readiness to change was not necessary for the wilderness therapy experience to be effective. These findings contradict concerns regarding the usefulness of the motivation to change theory as a framework for wilderness therapy when working with adolescents who might not be prepared to want to change, such as those struggling with substance use and abuse.

In addition to finding support for using the motivation to change theory as a part of the wilderness therapy framework, this study also found that wilderness therapy resulted in effective reductions of mental health symptomology in the treatment of adolescents with substance use disorders. Specifically these adolescents reported reduced symptoms in their interpersonal distress, social problems, suicidality, interpersonal relations, and behavioral dysfunction. While the motivation to change theory was discussed as part of the wilderness therapy framework, little more explanation was provided as to how it is specifically incorporated, what other specific framework pieces might be included, and how it looks in program form. It is also interesting to note that this specific wilderness therapy intervention identified the inclusion of a strong family component both throughout the treatment process and the aftercare planning, which

focused on rebuilding attachment relationships, though no specific mention was made to attachment theory or family systems theory.

### **Psychodynamic Theory (1 article)**

One of the ten articles, a case study, explored the implementation of wilderness therapy to treat adolescent depression, with psychodynamic theory as a foundation piece. Similar to Harper et al. (2007), Norton (2010) presents the benefits and successes of treating adolescent depression with a psychodynamic framework, and then explores the application of that framework to wilderness therapy for the treatment of adolescent depression. “The psychodynamics of adolescent depression involve unresolved developmental conflicts, issues of separation/individuation, the search for identity and the development of the true self” (Norton, 2010, p.232). With adolescent depression being an epidemic in the United States, Norton (2010) presents wilderness therapy as a “holistic intervention that may begin to address the intrapsychic, interpersonal, and existential aspects of adolescent depression by experientially increasing an adolescent’s capacity for relatedness” (Norton, 2010, p.230). By using a psychodynamic theory framework, attention is paid to developmental, psychosocial and relational aspects of the intervention in addition to promoting positive self-image and enhanced coping skills.

This article presented a case study of a 16 year old, Caucasian female named Lisa. Lisa had been experiencing substance use problems, school attendance issues and overall family conflict. She was enrolled in a 28-day therapeutic wilderness program that was followed by a community service project and a parent/guardian seminar. During one particular wilderness activity, rock climbing, Lisa experienced a turning point. While attempting to cope with the natural challenges rock climbing was providing, and with the

support of her climbing partner, she was able to uncover and develop her true self.

“During Lisa’s participation in the wilderness therapy program, she began to face her illusory self by confronting opportunities to attempt and complete tasks that were difficult for her” (Norton, 2010, p.232). At the completion of treatment, Lisa successfully transferred to a new school, began complying with mental health medications while agreeing to work on decreasing her recreational drug use, as well as working to establish more open and productive communication with her family.

While this article specifically explored the use of a psychodynamic theory framework, it also less explicitly alluded to treatment focuses on relationships through attachment and group process, the use of object relations as a framework, as well as the importance of family involvement and support.

### **Components of Wilderness Therapy**

The ten articles chosen to review wilderness therapy theoretical foundations also identified countless wilderness therapy components. While each of the ten articles explored different wilderness therapy programs, approaches, models and techniques, numerous program components were found to overlap between articles. Figure 2 shows the wilderness therapy components identified within each article. Components that are underlined signify duplications that were found between at least two articles.

Multiple articles noted the importance of simply being in nature and wilderness as a healing factor, outdoor living, individual and group therapy, removal from the primary living situation, and aftercare. Each article also identified at least one unique wilderness therapy component that was not supported by any other of the ten articles. Some of the more unique components included the use of isolated wilderness areas, the need for

excitement, the importance of sequencing of activities, a high staff to client ration, abstinence-focused coping strategies and the correction of negative relational patterns. There are multiple wilderness therapy components that were mentioned in more than two of the ten articles. For example, the use of metaphors was identified in five of the ten articles as well as the importance of both trust and challenge throughout the wilderness therapy experience. Four of the ten articles noted the importance of aftercare while three articles spoke to the importance of participant reflection. Although there were a high number of similarities between wilderness therapy components, no single component was identified in all ten articles.

### **Populations Served Through Wilderness Therapy**

All of the ten articles systematically reviewed identified specific populations, sometimes more than one, for which wilderness therapy had been applied. Nine of the ten articles explored wilderness therapy specifically for adolescent populations, two articles explored wilderness therapy for families and one article identified the use of wilderness therapy for adults. The adolescent population was described between nine articles as delinquent, troubled youth ranging in age from 13 years to 18 years. Mason (1987) identified wilderness therapy for families including single parents, couples, singles and entire families. Russell (2001) notes that wilderness therapy can be a treatment option for adolescents, families as well as adults.

Nine of the ten articles identified specific client problems that have been treated through wilderness therapy. These client problems include but are not limited to emotional problems, behavioral problems, substance use and abuse, poor school performance, delinquent activity, family conflict, destructive behaviors and depression.

Of the ten articles, four identified the use of wilderness therapy for the treatment of drug and alcohol use and abuse, four articles identified wilderness therapy as treatment for behavior problems, and three articles identified wilderness therapy as treatment for emotional distress. Of the ten articles, only Mason (1987) failed to specifically identify client problems when discussing and exploring wilderness therapy.

### **Wilderness Therapy Outcomes**

Of the ten articles systematically reviewed, six articles contained information regarding wilderness therapy outcomes. Figure 3 shows the specific outcomes documented within each of six the articles. Harper et al. (2007) found significant positive changes at a two-month follow up of adolescents and their families who participated in wilderness therapy. Family functioning, adolescent behavior as well as mental health issues all showed signs of improvement. These findings suggest that wilderness therapy, specifically the CFWT intervention, may contribute significantly to the stabilization of problem behaviors as well as lasting change for adolescents and their families. Bandoroff & Scherer (1994) found that wilderness therapy participants moved their family functioning from the clinical range at pretest to the normal range at posttest. There were adolescent reported drops in delinquency, an improved parental rating of problem behaviors, a decrease in police and court contact as well as an increase in adolescent ratings of self concept. In addition to these findings, the researchers also discovered that participants found the experiential activities, metaphors, processing sessions, opportunity for family intimacy, relationship skills training, and the opportunity to share their experiences with other families to be especially helpful. Davis-Berman & Berman (2012) found that in reflecting on their past experience in wilderness therapy several years ago,

participants found that the trip and the experiences had a lasting impact on their lives including lessons for life, a better relationships with a sibling, lessons to share with a child, self-confidence to persevere through difficult times and the use of a coping skill with journaling. Bettmann et al. (2011) found that wilderness therapy could support the development of healthy relationships for participants with past attachment relationships that provoke anxiety or distrust. Their findings also suggest that wilderness therapy works for a population of adolescents who have highly conflicted family relationships. Bettman et al. (2013) found that wilderness therapy is effective for treating a wide range of problems with positive changes that are maintained at six months. Norton (2010) found that wilderness therapy could promote a positive self-image, enhance coping skills and can be an effective intervention for adolescents suffering from depression. The remaining four articles explored wilderness therapy theoretically and did not specifically discuss any wilderness therapy program outcomes. All of these findings are summarized in Table 1 and 2.

Author(s)	Main Theoretical Foundation Identified	Additional Theoretical Foundations Identified	Identified Wilderness Therapy Components
Harper, Russell, Cooley & Cupples (2007)	Family Systems Theory	Group work, Outward Bound model	Human-powered expeditions, isolated wilderness areas, individual counseling, group counseling, challenging activities, outdoor living skills, adventure recreation activities, family involvement throughout treatment, wilderness as a healing factor, promotion of self-efficacy through task completion, restructuring of the therapeutic relationships development of a therapeutic social group, the use of metaphors to help adolescents learn and practice new ways of communicating and behaving, communal outdoor living, intensive group activities, relationship with counselor and therapist, strong peer supported group dynamic
Mason (1987)	Systems Theory	Ecosystem approach, symbolic experiential therapy, behavioral theory	Developing trust, support, and open communication, trekking, rafting, canoeing, dog-sledding, rock climbing, biking, sailing, crater hiking, cross country skiing, take risks, high-stress situations, group discussion, family therapy, metaphors, face vulnerabilities, immediate feedback, real vs. perceived fear, eustress, facing edges, physiological empathy, equality, unlocking of the unconscious, multi-system integration, building family strengths through individual growth, using our-selves, brain expansion, role flexibility, content, process and circularity, self-esteem, experiential
Bandoroff & Scherer (1994)	Family Systems Theory, Structural family therapy	Ecological approach, Outward Bound model, Group work, Healthy family process, Multiple family therapy, Attachment	Challenging, physical stress, emotional stress, excitement, perceived risk, group experience, developing trust, problem-solving skills, removal from a dysfunctional home environment, communication trust
Davis-Berman & Berman (2012)	Systems Theory		Motivation, trust, respect, treks, being away, group peers, nature primitive, sense of self, staff support, backpacking, reflection, self-efficacy, timelessness, perceived competence, family, new beginnings challenging assumptions about self and others, self-esteem, locus of control, life lessons, sense of time, readiness for change, relationships, journaling, physical activity, climbing, group sessions, hiking, coping skills, licensed mental health therapist
Hill (2007)	Eclectic approach	Outward Bound model, Group work, Adlerian Therapy, Behavioral Therapy, Reality Therapy, Challenge by Choice	Self-disclosure, traditional counseling techniques, adventure-based activities, psychological principles chance according to the individuals unique needs, assessment, treatment planning, trained and credentialed mental health practitioner, nature setting, reliance on the group interactions, perception of risk in activities, trust building and team building, develop interpersonal skills, develop a sense of group belonging, focus on solutions and success rather than on the problems, promote feelings of empowerment responsibility, confidence and group cohesion, goal setting, problem solving, fun, challenge, positive stress (eustress), aftercare, camping, backpacking, sequencing of activities, the use of transference, encouragement, holism, natural consequences, modeling, reinforcement, behavioral rehearsal problem solving, metaphorical framing, universality, individual counseling, group counseling

Table 1. Wilderness Therapy Theoretical Foundations and components

Author(s)	Main Theoretical Foundation Identified	Additional Theoretical Foundations Identified	Identified Wilderness Therapy Components
Russell (2001)	Eclectic approach	Outward Bound model, Systems Theory, healthy family process, multiple family therapy, group systems, interpersonal behavioral natural consequences, family systems, cognitive behavioral	Experience-centered, value-centered, learning through doing, mastery, group process, series of challenges that increase in difficulty and are perceived to be high in perceived risk while actually being low risk, wilderness environment or unfamiliar environment, therapeutic techniques, reflection, journal writing, individual counseling, self-disclosure, confronting fear, trust, immediacy of concreteness of feedback, even-handedness of consequences, methodical, planned and systematic approach, careful selection of potential candidates based on clinical assessment, individual treatment plans, evaluation of progress, family involvement, aftercare, base camping, backpacking, rafting, canoeing, theoretical foundation, ceremony and ritual, solos, metaphor, communication skills, traditional educational and psycho-educational lessons, guided by phases, removing the client from destructive environments, healthy diet, physical exercise, removal from intensive cultural stimuli, self care, modeling, practicing goals
Bettmann, Olson-Morrison & Jasperson (2011)	Attachment Theory	Family Systems Theory	Therapeutic experiential and educational means, away from home environment, small treatment groups, high staff-client ratio, challenge relational patterns and behaviors, connect with peers, face regular losses, separations and reunions, trust, family involvement
Becker (2010)	Group Therapy Theory and process	Family Systems Theory	Outdoor living, wilderness skills, group dynamics, supervised by licensed mental health practitioner trained clinical staff, develop individualized treatment plans that are monitored by clinical staff, works with families, unique staff-client relationships, removal from primary living situation, success at outdoor challenges, aftercare
Betmann, Russell & Parry (2013)	Motivation to Change Theory	Attachment Theory	Unique opportunity for clients to depend upon each other and program staff, live without buildings, plumbing and electricity, pack building, shelter construction, primitive fire making and meal preparation program licensure by the state and regular medical assessments to ensure client safety, licensed mental health professionals, individualized treatment plans and interventions, individual therapy, group therapy, family therapy, aftercare, use formal evaluations and analyses of treatment to measure and improve quality of care, specially trained field staff, live in a wilderness environment family components, abstinence-focused coping strategies, weekly individual and group substance abuse counseling, using 'addiction-as-disease' model, regular feelings checks, mindfulness practices such as meditation an yoga, relational oriented interventions, rebuilding attachment relationships, behavior rehearsal
Norton (2010)	Psychodynamic Theory	Group work, experiential reconstruction, object relations, narrative theory, integration of theory	Challenges, adventure, group work/group process, addressing intrapsychic, developmental and relation factors, takes place outdoors, 'simply being in nature', structured clinical interventions and therapeutic techniques, reflection, journal writing, individual counseling, self disclosure, mountaineering backpacking, rock climbing, paddling, high ropes courses, building relationships with the self, others and the natural world, social learning, metaphors, experiential learning, correction of negative relational patterns, hope, build a sense of mastery, reconstruct the story or dominant narrative theory one holds about themselves, holistic, follow up treatment

**Table 1 (Continued).** Wilderness Therapy Theoretical Foundations and components

Author(s)	Client Population	Identified Client Problems	Outcomes
Harper, Russell, Cooley & Cupples (2007)	Adolescents (13 -18 years) and their families	Emotional, behavioral and substance use problems	Significant positive changes two-months post treatment in family functioning, adolescent behavior and mental health issues
Mason (1987)	Single parents, couples, singles and entire families		
Bandoroff & Scherer (1994)	Adolescents (13 -18 years) and their parents	Substance abuse, behavior problems, poor school performance, and delinquent activity	95% of participants rated the content of the program as most or very helpful. At pretest participants rated their family functioning within the clinical range, by follow up they were functioning within the normal range. Adolescent ratings of delinquency dropped, parent ratings of problem behavior improved, police and court contacts decreased, and adolescent ratings of self concept increased
Davis-Berman & Berman (2012)	Adolescents (14 -16 years)	Ongoing family conflict, especially with parents, psychological and sexual abuse, drug and alcohol abuse	All participants noted that their wilderness therapy trip had a lasting impact on their lives, though not dramatically life changing or life altering. Effects of the trip included a better relationship with a sibling, the use of a coping skill with journaling, lessons to share with a child and self-confidence to persevere through difficult times
Hill (2007)	Adolescents	At risk youth	

**Table 2.** Wilderness Therapy Populations, Problems and Outcomes

Author(s)	Client Population	Identified Client Problems	Outcomes
Russell (2001)	Delinquent adolescents, troubled youth, adults, families	The goal of wilderness treatment is to address the client's 'presenting issues' and chemical dependency	
Bettmann, Olson-Morrison & Jasperson (2011)	Adolescents (14 - 17 years)	Emotional and behavioral issues, destructive behaviors	Suggests that wilderness therapy works with a population of adolescents with highly conflicted family relationship, wilderness therapy can support the development of healthy relationships in clients whose past experiences of attachment relationships provoke anxiety or distrust
Becker (2010)	Primarily utilized for adolescents	Clients presenting with a variety of clinical concerns	
Betmann, Russell & Parry (2013)	Adolescents	Clients enter treatment for a variety of problems including: intrapersonal distress, somatic, interpersonal relations, critical items, social problems, and behavioral dysfunction	Wilderness therapy is effective at treating a range of problem behaviors including reducing mental health symptomology, reduced symptoms in intrapersonal distress, somatic, interpersonal relations, critic items (such as suicidality), social problems and behavior dysfunction. These outcomes were maintained at the 6-month follow up while clients continued to improve on the social problems subscale, indicating sustained change. Participants in wilderness therapy do not necessarily need to want to change in order to do so
Norton (2010)	Adolescents	Depression	This clinical case study presents wilderness therapy as an effective intervention for adolescent depression. Wilderness therapy can promote a positive self-image and enhance coping skills

Table 2 (Continued). Wilderness Therapy Populations, Problems and Outcomes

### Discussion

Through a review of ten articles, both research and theoretical that acknowledged wilderness therapy theoretical frameworks, numerous similarities, differences, as well as possible future questions were identified. These ten articles identified the use of wilderness therapy with various populations to treat various problems. Populations included families, individual adolescents, and adults, with problems ranging from drug and alcohol use and abuse issues, delinquency, legal trouble, family dysfunction and overall mental health treatment. No two articles presented a wilderness therapy program identical to another, though numerous aspects were replicated in a number of the articles. All of the research articles reviewed identified some degree of positive effects for participants who were involved in a wilderness therapy experience. It is impossible to compare the positive findings from these research experiments due to the lack of cohesion regarding what wilderness therapy is. Mason (1987) gave the clearest picture as to what the wilderness therapy experience could include: activities such as rock climbing, canoeing, biking, dog-sledding, rafting, hiking all in combination with group discussions, therapy and a heavy dependence on translating wilderness metaphors into daily life. Other articles like Bettmann et al. (2011) only defined a wilderness therapy program as including activities such as hiking and completing schoolwork.

It is interesting that Bandoroff and Scherer (1994) identified their program as a ‘traditional’ wilderness therapy program, which involved a survival expedition where participants spent their days hiking numerous miles with only the basic survival necessities. During this intense program, participants were involved with individual therapeutic sessions on three occasions. It is unclear as to what exactly makes this type of

program a 'traditional' wilderness program versus the programs identified in the other articles whose programs tended to have more wilderness therapy components in common. Also, based off of the program description, this appears to rather closely resemble the negatively publicized boot camp programs. There is a possibility that Bettmann et al. (2011) was referring to a similar wilderness program as the survival expedition Bandoroff and Scherer (1994) described, but not enough detail was presented to be sure.

The length of time spent in the wilderness therapy program, the location of the program, admission requirements, type of staff working for the program (licensed/non-licensed) and aftercare planning are all variables that would be important to know when attempting to compare programs. However, as can be seen with these article reviews, these details are often only provided in the most basic form, if provided at all. It is clear after reviewing these ten different articles that wilderness therapy is in fact lacking a concrete definition. Along with a lack of a concrete definition, this research identifies a lack of a coherent theory base of wilderness therapy. Because of this, wilderness therapy cannot be considered an evidence-based approach, which, according to Grady and Drisko (2014), could result in clients receiving sub-par services: "Without the skills, knowledge and accurate assessment, the evidence based practice process and any proposed plan for intervention will fall short of the potential beneficial impact it could have with the client(s) seeking assistance" (p.2).

Alternatively, a review of current research identifies the possibility of it being beneficial to have some flexibility based on the numerous variables that can affect how the wilderness therapy program is designed and executed, such as population being served and voluntary versus involuntary clients. However, the differences between a

survival hike in conjunction with therapy styled expedition and a camping, canoeing, fire building in conjunction with therapy styled expedition are incomparable.

Each article that was reviewed identified at least one specific theoretical foundation that has been applied to a wilderness therapy program. It is interesting to note that while each article seemed to mainly focus on one theory, they often eluded to various other important theoretical foundation pieces. There were a couple of theoretical foundations and wilderness therapy components that came up in several articles. While only three of the ten articles specifically identified the importance and benefits of utilizing family systems theory in the wilderness therapy foundation, other articles spoke to the importance of family involvement in the treatment process and the aftercare planning. Group work theory was another idea that appeared as an identified framework within six of the ten articles, though only one article identified it as a main foundation piece.

There appeared countless wilderness therapy components that were identified through the reviewed articles. Several articles spoke to the benefits of nature itself within wilderness therapy: “simply being in nature was one of the most important components of the wilderness therapy experience” (Norton, 2010, p. 230). Numerous activities were referenced in more than one of the reviewed articles, including but not limited to rock climbing, hiking, biking, camping, learning primitive living skills, canoeing and rafting. Therapeutic components of wilderness therapy, also tending to appear within more than one article, included the use of journaling, self-disclosure, individual counseling, group counseling, family counseling, treatment plans and communication. Although several

wilderness therapy activities and therapeutic components were identified, unfortunately, it is still challenging to understand how each program works.

On numerous occasions the articles reviewed made mention to some type of important wilderness therapy component without elaborating on how to include it, what it looks like or what the benefits are. For example Russell (2001) mentions group process and series of challenges, while Betmann et al. (2013) identifies the importance of including relational oriented interventions in wilderness therapy. These ideas and concepts are portrayed as useful and important; however, it is unclear what they look like in the intervention or what specific outcomes they result in. This gap in clarity may be best explored through the use of more case studies similar to that which was presented in the article by Norton (2010). Case studies present a unique amount of detail and the opportunity to explore more closely what specific wilderness therapy components are, how they are included in the therapeutic experience, what it looks like and what specific benefits might result from the inclusion of each component.

Due to the uniqueness of wilderness therapy as a treatment option and the identified conflicting program approaches, it is extremely important to be aware of several ethical considerations that arise surrounding wilderness therapy. Becker (2009) specifically identifies ethical considerations that should be applied throughout future practice and research. These considerations include concern regarding the distinction between therapy and therapeutic, consent and confidentiality, along with the boundaries and the role of the therapist in wilderness therapy.

Often nature itself is seen as therapeutic; however, just being in the wilderness itself does not mean that therapy is occurring. This highlights the importance of

identifying and understanding program elements to ensure that wilderness therapy programs do indeed foster the therapeutic process. Often wilderness therapy is utilized to treat adolescents who are forced by their parents to participate, which can result in passive resistance or active refusal (Becker, 2009). It is extremely important for wilderness therapy providers to be in tune with these possibilities to ensure that their program does not participate in coercion or boot camp styled treatment approaches (Becker, 2009). Due to the unique setting of wilderness therapy and the distinction between therapy and therapeutic, issues regarding confidentiality may develop. There are challenges surrounding the sharing information with the parents of an adolescent participant, the appropriate use of client information between wilderness staff who may or may not be licensed or involved in direct treatment, and the appropriate notification upon disclosures of abuse or neglect. It is also important to evaluate if confidentiality applies only during formal therapy sessions with participants or if it applies throughout the entire program (e.g. meal time conversations, conversations that occur during hiking or canoeing). A last ethical consideration identified by Becker (2009) looks to the boundaries and roles of a wilderness therapy therapist. In wilderness therapy, the relationship between a client and a clinician is extremely unique. Often the clinicians are providing therapy outside of the standard therapist's office. Clinicians may be working with participants during an activity such as canoeing, or teaching a participant how to build a fire, or they may be sitting around a fire as a group. These diverse interactions a client may have with a clinician during wilderness therapy require the establishment and maintenance of professional boundaries (Becker, 2009).

**Implications for Further Social Work Practice**

When working to promote the wellbeing of their clients, social workers can utilize various interventions. Wilderness therapy is a unique treatment option that has been applied to a wide variety of clients to treat a wide variety of problems. By exploring current available research on wilderness therapy, it is clear that there are several gaps in research. Although there appears to be an abundance of research on wilderness therapy, there is still a lack of understanding regarding what exactly wilderness therapy is and how exactly it works. Research was conducted to better understand what might help advance wilderness therapy; the establishment and identification of a clear and concrete wilderness therapy definition, or possibly the development of a manual based approach similar to that, which is used for CBT and DBT. However, at the completion of this systematic review, it appears instead that wilderness therapy programs may benefit more from the clear identification and formulation of common themes for wilderness-based therapy while still allowing for the flexibility of incorporating other therapeutic approaches. It is then important to ensure that the incorporated therapeutic approaches such as Attachment Theory, which was previously identified as a wilderness therapy framework, used in conjunction with wilderness therapy, be strongly articulated and supported by theory and research.

Currently there is not enough detail regarding wilderness therapy programs to allow for replication in both practice and research. Though common elements between wilderness therapy programs are identifiable, there is also a lack of information surrounding such elements, which make for further practice and research challenges. This research supports the need for more program outcome data to better articulate wilderness

therapy approaches, more qualitative research to explore these specific wilderness therapy approaches as well as a stronger development of the themes used to define wilderness therapy. Social workers should continue to work towards a more coherent understanding of wilderness therapy as well as furthering research to better understand how exactly it works.

As can be seen throughout this research, wilderness therapy can encompass extremely diverse approaches to treatment. These approaches appear to be based on the type of program a client is enrolled in, the type of problem the therapy has been designed to address, the length of time spent in wilderness therapy, the type of wilderness activities included, the role a client's family plays in the therapy process among various other variables. While there are numerous articles currently dedicated to the confusion that surrounds wilderness therapy, outcome studies utilized to identify these wilderness therapy approaches are lacking. By conducting outcome research, researchers would better be able to identify and articulate wilderness therapy approaches that are being used today. In order to foster a better understanding of wilderness therapy, we first must be able to clearly articulate the approaches used.

Once wilderness therapy approaches have been more individually identified and articulated it would be important for researchers to further investigate each approach to evaluate effectiveness. Qualitative research could be used to gather a more in-depth understanding of each wilderness therapy approach and the outcomes produced. This important research would be able to identify what approaches if any are effective, what approaches need more work, and what approaches if any are problematic. The

identification and exploration of specific wilderness therapy approaches would also allow for much needed replication studies to ensure similar outcome findings.

Lastly this research supports the need for a stronger development of the themes that define wilderness therapy. As can be seen throughout this research, a wide array of wilderness therapy themes has been identified. The only theme that appears to present within all of the articles reviewed is the importance of the use of nature in wilderness therapy. Most articles identified some type of wilderness activity such as hiking, camping and canoeing, but there still is a lack of understanding as to what components are necessary to include into wilderness therapy, what effect they have on the therapy process, and how to incorporate them.

Wilderness therapy presents as a promising therapeutic intervention for the treatment of diverse clientele. Social workers should continue to conduct detailed research to work towards a more clear identification of important wilderness therapy themes in addition to evaluating the use of other therapeutic approaches used in conjunction with wilderness therapy.

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\* Articles Marked with an asterisk identify the ten studies included in the systematic review.