



# SUMMARY OF RESEARCH FROM 1999 - 2006

AND

## UPDATE TO 2000 SURVEY OF OUTDOOR BEHAVIORAL HEALTHCARE PROGRAMS IN NORTH AMERICA

**OUTDOOR BEHAVIORAL HEALTHCARE RESEARCH  
COOPERATIVE**

By

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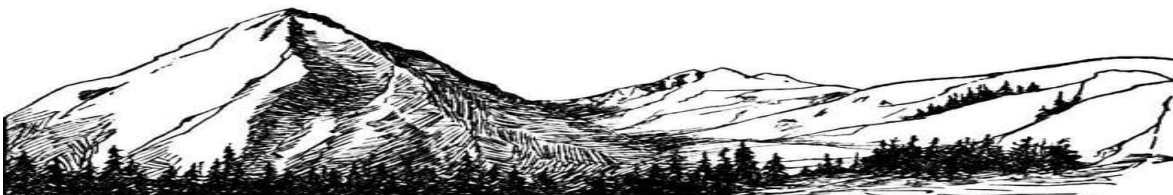
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Technical Report 2  
Outdoor Behavioral Healthcare  
Research Cooperative  
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University of Minnesota  
Minneapolis, MN  
May 2007



## ACKNOWLEDGEMENTS

I gratefully acknowledge my graduate students at the Universities of Idaho, New Hampshire, and Minnesota who have helped gather literature, enter and analyze data, engage in discussion, and push me to ask insightful questions related to this research. I also acknowledge the technical reviewers of this publication. While their comments, suggestions, and insights helped greatly improve the document, they bear no responsibility for the final presentation.

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We also acknowledge the financial support from member programs of the Outdoor Behavioral Healthcare Industry Council (OBHIC), and the University of Minnesota-College of Education and Human Development, whose support and cooperation was vital to the research.

### Founding OBHRC Member Programs

<b>Anasazi Foundation</b> , Mesa, Arizona	1999-Present
<b>Aspen Achievement Academy</b> , Loa, Utah	1999-Present
<b>Catherine Freer Wilderness Therapy</b> , Albany, Oregon	1999-Present
<b>Redcliff Ascent</b> , Springville, Utah	1999-Present
<b>SUWS</b> , Shoshone, Idaho	1999-Present

### Recent OBHRC Member Programs

<b>Mountain Homes Youth Ranch</b> , Vernal, Utah	2004-Present
<b>OMNI Youth Services</b> , Buffalo Grove, Illinois	2002-Present
<b>Phoenix Outdoor</b> , Roswell, Georgia	2005-Present
<b>Soltreks</b> , Two Harbors, Minnesota	2004-Present
<b>Monarch Family Center</b> , Georgetown, Colorado	2002-Present
<b>Wendigo Lake Expeditions</b> , Ontario, Canada	2002-Present

## EXECUTIVE SUMMARY

The purpose of this technical report is to outline and summarize research completed from 1999 through 2006 by the Outdoor Behavioral Healthcare Research Cooperative now located at the University of Minnesota. Reviewed research projects include: a) Defining the Scope of the OBH Industry (1999-2001), b) Outcome Study of Youth Participants using the Youth-Outcome Questionnaire (2000-2002), c) Qualitative Study to Assess the Role of Aftercare (2003-2004), d) Risk Incident Monitoring (1999-2005), and e) Depression and Substance Use Study (2003-2006). In addition to outlining the findings of this program of research, the following objectives are also accomplished in this report: 1) to update the OBH industry survey conducted in 2000 to identify trends in the development of OBH industry over the last seven years, 2) to review and evaluate recent research on outdoor behavioral healthcare programs and wilderness therapy as treatment modality to identify current research trends 3) to present an overview of key elements of the OBH treatment model that is gaining empirical support by this and other research found in the literature, and 5) to offer conclusions that summarizes this information and clarifies future research direction by OBHRC. All research and publications can be accessed at <http://www.obhrc.org>.

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## INTRODUCTION

Outdoor behavioral healthcare treatment (OBH) evolved from outdoor- and wilderness-based treatment programs that have been in existence for over 50 years, with strong influences derived from therapeutic camping, established in 1946 with programs like the Dallas Salesmanship Club (Loughmiller, 1965) and the Outward Bound wilderness challenge model brought to the U.S. in the early 1960s (Howard, 1984). Most OBH programs subscribe to an eclectic treatment model that incorporates a blend of therapeutic modalities, but do so in the context of wilderness environments and backcountry travel. The approach has evolved to include client assessment, development of an individual treatment plan, the use of established psychotherapeutic practice, and the development of aftercare plans (Bandoroff & Scherer, 1994; Russell, 2003). OBH programs apply wilderness therapy in the field, which contains the following key elements that distinguish it from other approaches found to be effective in working with adolescents: 1) the promotion of self-efficacy and personal autonomy through task accomplishment, 2) a restructuring of the therapist-client relationship through group and communal living facilitated by natural consequences, and 3) the promotion of a therapeutic social group that is inherent in outdoor living arrangements (Davis-Berman & Berman, 1994a; Kimball, 1983; Russell, 2001). The OBH definition presented here was developed by program practitioners who coined the phrase to more accurately describe a clinical treatment approach that is integrated with a wilderness expedition to help effectuate change in adolescents seeking alternative treatment choices.

Despite longevity of practice and some reported positive effects from treatment, OBH programs have struggled to gain respect, and are still viewed by the mental health service industry with some trepidation due to a lack of evaluative research on the intervention. In a review of literature on wilderness and adventure programs (broadly defined), Moote and Swiderski (1997) conclude that it is difficult to draw conclusions as to the effectiveness of such interventions, because no two adventure-programs are alike, they vary widely in terms of implementation and leadership and the majority of evaluative studies have significant design and methodology problems (e.g. no control groups and small sample sizes). Wilson and Lipsey (2000), speaking specifically to the integrated therapeutic components of such programs, conclude that it is of considerable practical importance to know if therapeutic enhancements are essential for optimum effects, and which therapy components are best. These reviews and other literature form the basis for continued research and evaluation in this area to help address these and other questions on program effectiveness and safety (Hattie *et al.*, 1997; Sibthorp, 2003).

OBH program numbers continue to grow, prompting state and provincial institutions to determine how best to regulate and provide oversight to program practice. Addressing this need for increased oversight, several organizations have formed to provide common standards of ethical and clinical best practice. These include the Outdoor Behavioral Healthcare Industry Council (OBHIC), the National Association of Therapeutic Wilderness Camps (NATWC) and the National Association of Therapeutic Schools and Programs (NATSAP). Many programs are now pursuing national accreditation from agencies such as the Joint Commission (JC) and the Council on Accreditation (COA). Despite these positive steps towards identifying and improving best practices in OBH, there still exists a paucity of research and evaluation on OBH practice and outcome, leaving many questions unanswered.

## **PURPOSE**

The purpose of this report is to provide an overview and summary of research and evaluation conducted between 1999 and 2005 by the Outdoor Behavioral Healthcare Research Cooperative (OBHRC), now located at the University of Minnesota in the College of Education and Human Development. It is important to note that research and evaluation conducted by the OBHRC was done only with the programs listed in Appendix A of this report. **In no way does this report attempt to generalize these findings beyond participating programs.**

Current literature on OBH programs and practice is also critiqued to present a theoretical and practical framework, which may better inform interested parties on how OBH programs operate to help adolescents and their families. The goal is to stimulate discussion on standards of best practice and theoretical frameworks which guide the treatment process, as well as appropriate research and evaluation designs, data collection and analysis protocol to conduct research and evaluation on program safety and effectiveness. In this way, researchers, practitioners, parents, and other interested entities can be informed as to what OBH is, and how research and evaluation is informing its' practice and outcome. The report is outlined in three sections: 1) background and overview of OBH, 2) research and evaluation being conducted by OBHRC since 1999 and the subsequent results and conclusions developed from this research and evaluation, and 3) implications and future directions for research and evaluation of OBH and related programs in adolescent treatment.

## **BACKGROUND AND OVERVIEW OF OUTDOOR BEHAVIORAL HEALTHCARE**

This section presents an overview of: the demand for OBH services, the theoretically reasoned factors at work in a therapeutic wilderness experience and the likely outcomes from treatment reported in the literature.

### **WHY OUTDOOR BEHAVIORAL HEALTHCARE?**

A key reason for the increased demand for OBH services is simply because demand outweighs the supply of appropriate and effective behavioral healthcare services for adolescents and their families. Moreover, this is an issue that has plagued adolescents for decades. According to a report by the US Surgeon General (2000), referencing research conducted on service utilization, a high proportion of young people with a diagnosable mental disorder do not receive any mental health services at all (Burns *et al.*, 1995; Leaf *et al.*, 1996). These findings follow a report conducted in the 1980s by the U.S. Office of Technology Assessment (1986), which also indicated that approximately 70 percent of children and adolescents in need of treatment do not receive mental health services. In the 1990s, Burns *et al.* (1995) concluded that only one in five children with a serious emotional disturbance utilized mental health specialty services, and the majority failed to receive any services at all. The most likely reasons for underutilization were: a) perceptions that treatments was not relevant or was too demanding, b) an associated stigma with needing and utilizing mental health services, c) the reluctance of parents and children to seek treatment, d) dissatisfaction with services and e) the prohibitive cost of treatment (Kazdin & Crowley, 1997; Pavuluri, Luk, & McGee, 1996).

In a more recent report by McManus et al. (2003) funded by the William T. Grant Foundation, healthcare services were examined in four major U.S. cities. The two most significant barriers to behavioral healthcare services were provider shortages and inadequate reimbursement rates. The authors state that “severe shortages of mental health and substance abuse providers trained to care for adolescents were reported in all four cities” (p. 16) In addition, and perhaps most relevant to the client types that utilize OBH, was their conclusion that few inpatient psychiatric and substance abuse beds are available for adolescents and families in need. Because of this, teens with mental health crises are often hospitalized for extended periods of time while awaiting services. Those less fortunate typically end up in the criminal justice system where their chances for adequate treatment services are limited, and recidivism becomes a significant and very real possibility (Latessa, 2004).

In summary, the “continuum of care” talked about by behavioral healthcare experts, which consists of services in schools, outpatient, inpatient, day treatment, and accessible residential facilities, appears to be a myth for most adolescents and their families seeking treatment. The demonstrated historical demand and current lack of services make it highly likely that innovative programs, and more importantly, programs which are innovative and effective, will be utilized by families in search of help for their children. This increased demand also creates the likelihood that programs with little or no protective oversight could be utilized by desperate parents and their children. This highlights the importance of the need for licensing, standards of best practice, and evaluation and research on program effectiveness for these interventions. OBH serves as one type of program on the continuum of care that is being utilized, making the evaluation and assessment of this service critical.

### **HOW DOES WILDERNESS THERAPY WORK?**

Outdoor behavioral healthcare programs with extended wilderness expeditions, lasting up to 50 days, practice what has been defined as wilderness therapy (Davis-Berman & Berman, 1994b; Russell, 2001). General conceptualizations and testable models about the active ingredients in wilderness therapy remain abstract and poorly defined. Though the existing literature does suggest that wilderness therapy shows promise as a treatment modality (Hans, 2000; Hattie et al., 1997; Russell, 2003, 2004, 2006; Wilson & Lipsey, 2000), *how* and *why* wilderness therapy may work has yet to be definitively explicated. No agreed-upon, inclusive model exists to truly identify and describe those factors that may be causal change agents. Thus, to further both theoretical and applied domains in wilderness therapy, forming a working model of wilderness therapy process is critical. This model was published in the *Journal of Adventure Education and Outdoor Learning* and is based on empirical observations and qualitative research conducted on wilderness therapy since 1999 (see Russell & Farnum, 2004). Below is a conceptual argument, supported by empirical research, as to what factors are at work in a wilderness therapy experience for adolescent participants. This framework contains four factors: 1) wilderness as a healing factor, 2) promotion of self-efficacy through task accomplishment, 3) restructuring of the therapeutic relationship, and 4) development of a therapeutic social group. It is assumed that these factors may be present in other models of treatment, but are reasoned to be enhanced in a wilderness therapy setting.

## **WILDERNESS AS A HEALING FACTOR**

Though wilderness has long been supposed to induce positive psychological effects (Greenway, 1995), only recently have researchers started to look at the empirical basis behind that observation. Kaplan and Kaplan (1989) have been at the forefront of this research, performing seminal work examining the psychological benefits of experiencing nature and enumerating wilderness qualities believed to impact psychological state of mind. These qualities, they hypothesize, work to counteract mental fatigue, the sense of cumulative exhaustion that comes from being engaged in psychologically draining activities over time (Kaplan, 1995; Tennesen, 1995). Two constructs are reasoned to facilitate this process and are termed *being away* and *soft fascination*.

Being away suggests that attaining physical distance from daily stress allows the psyche to recover from cognitive overload; leaving our normal environments relieves much of this overload. Kaplan and Kaplan (1995) claim that natural settings provide one of the best opportunities for being away as they are quite different than our fatigue-producing daily environments. That the sense of being away works to restore fatigue and alleviate stress complements the work of wilderness-based researchers who found that natural areas are used for escape (Driver & Tocher, 1970) from a variety of stressors including noise (Lucas, 1963), crowding (Lime & Cushwa, 1969), the city (Hendee *et al.*, 1968), predictability (Catton, 1969), role overload (Knopf, 1972), and social restriction (Etzkorn, 1965).

Another quality of wilderness that promotes restoration is Kaplan and Kaplan's (1989) notion of *soft fascination*. Soft fascination occurs when involuntary attention—the opposite of stressful, directed attention—is engaged. Clouds, sunsets, and moving river water capture attention but do not require directed attention, allowing room for cognitive reflection. Because demands upon directed attention are diminished, psychological restoration becomes possible. Kaplan and Kaplan argue that these types of natural phenomenon—clouds sunsets, etc.—are prime types of stimuli to induce cognitive rest. Attention is captured by an interesting and aesthetically pleasing environment that does not necessitate a high degree of cognitive processing. Thus, soft fascination allows for release from stressors that cause mental fatigue, relaxing and easing cognitive strain.

## **PROMOTION OF SELF EFFICACY THROUGH TASK ACCOMPLISHMENT**

Adolescence is a time when a teen begins to form an individual sense of self that becomes increasingly differentiated from authority and parental influences. This new identity is manifest in a variety of social contexts, including school, family and peer environments (Harter, 1999). Culture plays a key role in developing an adolescent's sense of self, as identities are assumed and created through dress, music, media, and high-risk behaviors. By removing the adolescent from cultural artifacts that negatively define him or her and may perpetuate negative behaviors that necessitated their need for treatment, wilderness environments encourage and facilitate the development of a sense of self devoid of cultural influences. Furthermore, for treatment approaches that focus on gradual development of self competence in relation to real-life problems and settings, wilderness living has been shown to be an ideal treatment environment (Brown, Stetson, & Beatty, 1989).

Based on Bandura's (1977) notion that the relationship between self efficacy and performance is reciprocal (meaning efficacy expectations influence performance and performance influences efficacy expectations), the gradual development of self competence is accomplished through numerous daily living tasks that are real, immediate and concrete and become increasingly difficult as the process unfolds. Examples of these tasks include setting up a tarp for shelter, successfully packing a backpack, and cooking breakfast over a fire made from a bow-drill set constructed by the adolescent. As adolescents accomplish these daily tasks, participants often forget that they are in treatment and resistance to the process begins to evaporate as they become simple daily routines. The treatment team directly relates these learned skills to real-life social contexts, facilitating an approach that is concrete and suitable for adolescent's developmental capabilities.

### **RESTRUCTURING OF THE THERAPIST-CLIENT RELATIONSHIP**

Many clients enter OBH treatment with a resistance to treatment and authority and a history of involvement in counseling and treatment services (Russell, 2005). Effective treatment requires an alternative approach to work through this resistance (McCord, 1995). One way that OBH accomplishes this is through "natural" consequences, meaning they are not imposed by authority figures. An example is when a staff member provides a detailed lesson in how to pack a backpack and the client hastily completes the task, the result is either an arduous day of hiking with an uncomfortable pack or the repacking of the pack. As Bandoroff (1989) states, "...the environment assumes much of the responsibility for reinforcement and punishment, and clients cannot fool mother nature; consequences prescribed by the environment are real, immediate and consistent" (p. 14).

The treatment team engages in the same wilderness experience as the clients, eating the same foods and living in the same weather conditions, dramatically restructuring the therapist-client relationship that most adolescent clients are accustomed to from previous counseling or therapy. As Gass (1993) states, "...while still maintaining clear and appropriate boundaries, therapists become more approachable and achieve greater interaction with clients" (p. 9). This unique relationship that is built with the treatment team practicing wilderness therapy allows for discussion and discourse to occur without the stigma of traditional therapeutic roles. Russell and Phillips-Miller (2002) found empirical support for this in identifying the relationship established with counselors as a primary reason for client self improvement.

### **PROMOTION OF THERAPEUTIC SOCIAL GROUP**

Since peer influences are perhaps the most powerful predictor of adolescent anti-social behavior and substance abuse (Winters, Latimer, & Stinchfield, 1997), treatment strategies involving group therapies are appropriate for capitalizing on the considerable influence of peers (Bangert-Drowns, 1988). Drawing on theoretical factors inherent in social learning theory, group living in outdoor environments is facilitated by norms and behavioral patterns that are developed through careful modeling and facilitation by experienced leaders and staff. Within this structure, learning takes place in the field continually through the process of adolescents observing and modeling the behaviors, attitudes, and emotional reactions of others, both students and staff. Bandura (1977) states: "... most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action" (p.22).

Wilderness therapy practitioners facilitate social learning through: 1) placing experienced and inexperienced group members in the same groups, where pro-social behaviors are modeled; 2) integrating psycho-educational curricula into the treatment process and including metaphoric phases that clients must pass through to “graduate” the program, which come with increasing responsibility and reward and; 3) group and communal living that requires constant communication, patience and trust. Group cohesion and development throughout the experience establish a set of norms and expectations which play key roles in helping participants develop healthy pro-social behaviors and identities (Erikson, 1963). Examples include cooking in teams, leading the group on a hike, and psycho-educational groups; which help adolescents address specific issues in their lives with the help of group members and staff. Those who have experienced deep concern about their sense of worth and their ability to relate to others are empowered through these processes.

Recognizing that this framework addresses only wilderness-specific change factors and not general psychotherapeutic factors is important. The proposed framework answers the question: “What factors are present in wilderness therapy that enhance and/or supplement traditional psychotherapy work?” The factors discussed in this framework, then, involve factors in the wilderness experience that are not present—or present in lesser degrees—in traditional psychotherapy settings. General change factors (e.g., therapeutic alliance) operate within all psychotherapeutic contexts and orientations (Shoham-Salomon, 1990)—cognitive behavioral, outpatient, psychodynamic, inpatient, wilderness therapy etc.—and they are not included in this preliminary model. This is to allow for greater conceptual clarity of the distinction between traditional therapy and wilderness therapy. Though these process factors are not included in the model, they are important in understanding the totality of factors that may contribute positively to outcomes.

### **REVIEW OF OBH AND RELATED WILDERNESS PROGRAM OUTCOME STUDIES**

A review of studies was conducted to provide an overview of process factors and outcomes that are typically associated with OBH programs utilizing wilderness therapy interventions. Studies that inform wilderness therapy practice also include research on wilderness experience programs, like Outward Bound (OB) and the National Outdoor Leadership School (NOLS) that promote personal growth and human development, because processes inherent in wilderness outdoor living and traveling, parallel those that occur in wilderness therapy. The critical difference between wilderness therapy and an OB or NOLS experience is that wilderness therapy programs are *specifically* designed to address problem behavior in individuals while OB and NOLS are not.

This issue highlights a major shortcoming of research in the field: it is difficult to compare and replicate studies from one program or setting to the next. In addition, conclusions that are drawn from these studies are tentative and should be interpreted with caution given the diversity of clients served, practices employed, and outcomes realized. Several reviews were drawn on to examine the outcomes associated with the effects of wilderness programs on participants (Burton, 1981; Cason & Gillis, 1994; Easley, Passineau, & Driver, 1990; Ewert, 1983, 1987; Friese, Pittman, & Hendee, 1995; Gibson, 1979; Gillis, 1992; Gillis & Thomsen, 1996; Moote & Wadarski, 1997; Russell, 1999; Winterdyk & Griffiths, 1984).

This section is organized into five areas related to OBH programming and wilderness therapy practice: 1) recent research in general, 2) research conducted on the development of self-concept, 3) research on the development of appropriate and adaptive social skills, 3) research related to the effects on substance abuse and 4) research related to the effects on recidivism.

## **RECENT EVALUATION RESEARCH IN THE LITERATURE**

To examine recent research interest in wilderness therapy, a broad definition was applied that consisted of: 1) some type of outdoor or adventure intervention, used to 2) help address some type of emotional or behavioral problem or issue for clients. In no way is this meant to be an exhaustive review of the literature. The focus of the search was to identify those articles that were published between 2000 and 2004 that empirically evaluated OBH treatment programs that utilize wilderness therapy process and practice. The search was conducted in Dissertation Abstracts International (DAI), PsychINFO, ERIC, and Academic Premier. Specific journals in the field were also reviewed (Journal of Experiential Education, Journal of Adventure Education and Outdoor Learning, and the Australian Journal of Outdoor Education). Much of this review and insights developed from integrating this literature were published in Russell (2004), "Research directions in wilderness treatment," in the text *Coming of age: The evolving field of adventure therapy* (pp. 137-155), edited by Sandy Newes and Scott Bandoroff. (See Figure 1 on p. 16 for overview of recent studies).

Surprisingly, the journals revealed only six articles that focused on empirically evaluating wilderness or adventure therapy process or practice. These six studies examined the use of wilderness therapy for the treatment of adolescent sex offenders (Lambie et al., 2000), evaluated the effects of a wilderness-enhanced program on behavior disordered adolescents (Brand, 2001) and evaluated process and outcomes of wilderness therapy for adolescents (Russell, 1998; 2000; 2002; 2003). The majority of published material relating to wilderness therapy in outdoor education consists of discussions and reflections on the intervention and the role it may play in helping a variety of clients. The most active database for current research is the DAI, where a total of 12 dissertations were written since 2000 focusing on empirical evaluation of the process and practice of wilderness therapy. These publications show refined definitions of the intervention, increasingly sophisticated research methods, and important implications from findings.

For example, Clark (2003) found that wilderness therapy facilitates positive change in adolescents with clinically elevated Millon Adolescent Clinical Inventory (MACI) personality scores, and noted that short term interventions leading to character change are virtually unheard of in the personality literature. In a study evaluating whether ethnicity could explain variance in self concept and internalizing and externalizing behaviors, Orren (2003) found that the treatment group did not differ from the control group on self concept or internalizing/externalizing behaviors, and that African American treatment group participants actually reported lower self concept scores after the wilderness intervention. Hagan (2003) assessed treatment outcomes using the Youth-Outcome Questionnaire (Y-OQ) and found that adolescent self-reports indicated no significant improvement from wilderness treatment, whereas parents and counselors indicated significant improvement.

Martinez (2002) examined self esteem and locus of control and their relation to group affiliation and noted positive changes as a result of treatment. In a qualitative study of clinicians' perspectives on the treatment process, Chantroux (2001) concluded that all ethnicities are reasoned to have the propensity to benefit from wilderness treatment. In a comparison study of a residential and wilderness program, Edgmon (2002) found increased self-confidence, increased communication and an increased closeness with family. Follow-up tests revealed no significant difference between treatment and control group in family relations, school success, and job/work success. Webb (2001) also conducted interviews with clinicians in programs and found that the client can more easily transfer learning when parents are actively involved in the program, and that clinicians have significant desire to increase family therapy and follow-up programs. Finally, the role nature and wilderness therapy play in women's self perceptions was examined (Gardner, 2000), as well as a qualitative study that provided a process evaluation and suggestions as to how to make wilderness therapy culturally appropriate for troubled Navajo youth (Parzen, 2001).

In summary, these studies reflect an increasing interest and sophistication in research design and methods evaluating and assessing process and outcomes in wilderness therapy. Of particular interest however, is the fact that very few of these studies have been published in refereed journals. This has been a consistent trend in research on wilderness therapy since the seminal studies on the effects of Outward Bound were first reported in 1960s through the 1970s (Burton, 1981; Kelly & Baer, 1968). Four research areas were identified in this review of recent studies: 1) the development of self concept, 2) the development of social skills, 3) an examination of parental relationships and attitudes and 4) studies on ethnicity and the relation to process and outcome. These themes also guide the review presented herein that represents literature on OBH, wilderness therapy, and wilderness experience program processes and effects that dates back to the 1960s. The review is framed to illustrate how the findings relate specifically to working with adolescents who may be experiencing emotional and behavioral problems.

**Figure 1. Recent literature on OBH programs and wilderness therapy practice.**

Author (date)	Variable	Intervention	Outcome(s)
Bedard (2004)	Self-esteem, self-concept, interpersonal skills, recidivism	Meta-Analysis of 23 studies of wilderness therapy programs that work with adjudicated youth	Moderate effect size found for self-esteem, self-concept, behavior changes, and improved interpersonal skills. Small effect size for reducing recidivism.
Hillstead (2004)	Parent-client relationship	Male, 15-18, Second Nature Wilderness therapy program	WT particularly effective when relationship between parent and child has broken down. Believes this is due to time and space between parent and child
Scalatine (2004)	Self-concept	Wilderness program for adolescent inner-city girls	Increased positive sense of self, increased environmental awareness, support for single gender programs
Clark (2003)	Immature defense styles, clinical syndromes, dysfunctional personality patterns, maladaptive behaviors	Adolescents 13-18, Catherine Freer Wilderness Therapy Expeditions	Significant improvement on immature defense styles and maladaptive behavior scores. Wilderness therapy facilitates positive character change in increasing MACI personality pattern scores
Orren (2003)	Self-concept, internalizing and externalizing behaviors, environmental attitude	Brief wilderness program in CA; Control group from waiting list	No differential improvement in any of the variables of the treatment group, change in reported self-concept within treatment group based on ethnicity, decreased self-esteem within treatment group for African-Americans
Hagan (2002)	Behavioral and emotional change	Brief adolescent wilderness therapy program	Significant positive change in perceived behaviors from parents and counselors pre to post, parents perceived change significantly higher than counselors perceived change, no change in self-report by students
Martinez (2002)	Self-esteem, locus of control, group affiliation	13 day wilderness program w/ 5 day extended expedition. R.M. Pyles Boys Camp,	Significant increase in self-esteem pre-post-follow up, significant change in self-esteem found in three ethnic groups (Caucasian, Latino, African-American), positive change in group affiliation and locus of control
Massoll (2002)	Perception of family dynamics (parental view)	Brief wilderness therapy program for adolescents 14-18	Parents had an increased perception of child's boundaries, affection for others, cooperation, and family's level of functioning; no change in conflict resolution skills-perhaps due to short length of program
Chantroux (2001)	Interaction between length of program and ethnicity of client/clinician (clinician perspective)	Interview with clinicians	Program modifications only necessary for ethnically homogenous groups, all ethnicities benefit from wilderness therapy
Edgmon (2001)	Self-confidence, family dynamics, substance abuse, peer relations	Wilderness Quest-WT vs. Life-line- community based therapy	Pre-post increased self-confidence, increase in communication and closeness with family, follow-up tests revealed no significant difference between treatment and control group in family relations, school success, and job/work success
Webb (2001)	Perception of aftercare, family involvement, program strengths and weaknesses (clinician perspective)	Interview with clinicians	Transfer of learning is increased when parents involved in program, clinicians have significant desire to increase family therapy and follow-up programs
Combs (2001)	Locus of control, self-esteem, self-efficacy	8 week ABC program created by Project Adventure, boys aged 9-14	Group leaders perceived significant change in behavior problems from beginning to end of program; positive change in self-esteem and self efficacy; perception that longer programs are more beneficial than shorter programs.

## **STUDIES RELATED TO EFFECTS ON SELF-CONCEPT**

Poor self-concept is considered to be associated with the presence and continuation of delinquent behavior; therefore, much of the research has focused on the degree to which wilderness programs enhance the participant's self-concept. Specific studies on self-concept note that wilderness programs significantly enhance the self-concept of troubled youths by presenting challenges that are attainable and grow in difficulty (Bandoroff & Scherer, 1994; Gibson, 1981; Hazelworth, 1990; Kelly & Baer, 1969; Kimball, 1979; Kleiber, 1993; Pommier, 1994; Porter, 1975; Weeks, 1985; Wright, 1982). However, a meta-analysis conducted by Hattie et al. (1997) suggests that past research in this area has ignored the advances being made in self-concept research and thus earlier studies tend to be simplistic. Recommendations included moving beyond assessing changes in global self-concept and focusing more on specific measures of self-concept, such as the physical, social, and academic dimensions. These earlier studies tended to focus on physical ability, peer relations, general self-concept, physical appearance, academic progress, self-confidence, self-efficacy, and self-understanding (see Hattie et al., p. 48).

Marsh, Richards, and Barnes (1984) addressed some of these issues by assessing several dimensions of self-concept in their study of non-delinquent youth and demonstrated that multiple dimensions of self-concept can be changed through a 26-day Outward Bound wilderness challenge program. Marsh (1990) noted that by identifying multiple dimensions of self-concept, identifiable goals of the intervention can be more directly linked to these measures of self-concept. Russell, Hendee, and Cooke (1998) found that increases in sense of self from participation in a wilderness program led to increased student performance in the Federal Job Corps program, as well as reduced the likelihood that students would leave the program before completing their educational and vocational training. Despite reported successes, systematic reviews of self-concept research emphasize the lack of a theoretical basis in most studies, the poor quality of measurement instruments used to assess self-concept, methodological shortcomings, and a general lack of comparable findings (Gillis, 1992; Winterdyk & Griffiths, 1984).

## **STUDIES RELATED TO EFFECTS ON SOCIAL SKILLS**

There is strong evidence that pro-social skill deficiencies are related to disruptive and anti-social behavior and limit abilities to form close interpersonal relationships (Mathur & Rutherford, 1994). Delinquent behavior is often a manifestation of social skill deficits, which can be changed by teaching alternate pro-social behaviors. Thus, most OBH and wilderness programs focus on the development of social skills and research has examined the degree to which participants learn and apply these skills in posttreatment environments. Gibson (1981) determined that the interpersonal competence of participants in an Outward Bound (OB) program was increased following the experience. Porter (1975) noted a decrease in defensiveness and a large increase in social acceptance. Kraus (1982) concluded that wilderness therapy aids emotionally disturbed adolescents in reaching various therapeutic goals, including a reduction in aggressiveness toward others. Weeks (1985) noted an improvement in participant interpersonal effectiveness in relating to others through learned social skills. In a more recent study, Sachs and Miller (1992) reported that a wilderness experience program had a positive effect on cooperative behavior exhibited in the school setting following completion of the wilderness program. It is notable that this finding was discovered through direct observation of

behaviors in a school setting. Although most studies were anecdotal and acknowledged study limitations, the review of the effects of wilderness programs suggest that such programs influence the development of more socially adaptive and cooperative behavior.

### **STUDIES RELATED TO EFFECTS ON SUBSTANCE ABUSE**

There are only three studies reported in the literature on wilderness program effects on clients with histories of drug and alcohol abuse. Gillis and Simpson (1992) noted a positive behavior change and positive effect on relapse from an eight-week residential treatment program with a wilderness component for drug-abusing adolescents. Bennet et al. (1998) found that a therapeutic camping program was more effective at reducing the frequency of negative thoughts and reducing alcohol craving, when compared with a residential drug and alcohol treatment model. They also noted a reduction in alcohol use 10 months after the program. The comparison group reported 69% abstinence, compared with the control group that reported 42% abstinence. Russell and Phillips-Miller (2002) evaluated 12 case studies four months after completion of a wilderness program and found three cases (25%) had self-reported a relapse on drug and alcohol use, which was also corroborated with parent interviews, while nine (75%) adolescents had reported that they had not relapsed and continued to remain substance free. While these studies report positive results in treatment of substance abuse, the fact that there are only three highlight the lack of research in this area.

### **STUDIES RELATED TO EFFECTS ON RECIDIVISM**

A review of the criminology literature reveals only a few studies published on the effects of wilderness programs (*not* boot camps) on adolescent recidivism. A review of studies in the 1970s and 1980s linked wilderness programs with reduced recidivism, reduced frequency of deviant behaviors, and fewer arrests (Winterdyk & Griffiths, 1984). Greenwood and Turner (1987) compared 90 male graduates of the VisionQuest adjudicated program with 257 male juvenile delinquents who had been placed in other probation programs and found that VisionQuest graduates had fewer arrests. Further evidence in support of VisionQuest's effectiveness is provided in a study by Goodstein and Sontheimer (1987), who found an arrest rate for VisionQuest graduates of 37 percent, compared to an arrest rate for control programs of 51 percent. A more recent study by Castellano and Soderstrom (1992) evaluated the effects of the Spectrum Wilderness Program, a 30-day high adventure wilderness program, on the number of post-program arrests. They found reduced arrests among graduates, which lasted for about one year after the program. It was concluded that positive program results began to decay to the point where they were no longer apparent.

### **LITERATURE REVIEW SUMMARY**

In summary, recent literature tends to support conclusions from preceding literature reviews that suggests OBH programs practicing wilderness therapy have the potential to generate positive outcomes for adolescent participants. Recently, research has begun to assess parent and family involvement in treatment, because of the important role the family plays in helping the adolescent transfer outcomes to post program family, peer and school environments. Also, more studies are examining the issue of ethnicity cultural appropriateness and relevance of OBH programs for minority groups, as the majority of subjects included in evaluation of program effectiveness to date have been Caucasian males. Also of note is the fact that most dissertations

written since 2000 came from clinical graduate programs like psychology and family therapy, perhaps suggesting a growing interest in understanding OBH practice and outcomes by these disciplines. Coupled with this growing interest is the use of more sophisticated psychometric instruments and clinical explanations of adolescent treatment issues and outcomes. Some observations reflect past evaluations of research in that very few, if any, of the studies used control groups and/or experimental designs. One study managed to compare residential treatment to a wilderness program, but with a very small sample size.

## **RESEARCH IN THE OUTDOOR BEHAVIORAL HEALTHCARE RESEARCH COOPERATIVE**

The following is a review of research and evaluation of member programs conducted by the Outdoor Behavioral Healthcare Research Cooperative (OBHRC) from 2000-2005. **This in no way represents all research in OBH treatment and only represents evaluation of those programs that participated in each study (Please see Appendix A for complete list of participating programs in each study).** These findings should not be generalized beyond those programs that were included in these studies. Any other OBH program not included in the acknowledgement section of this report was not evaluated or part of any research conducted by the OBHRC.

The purpose of OBHRC is to carry out a comprehensive research program to address specific questions gleaned from the literature and address research issues asked by specific program members. OBHRC is administered through a contractual arrangement between the Outdoor Behavioral Healthcare Industry Council (OBHIC) and the University of Minnesota-School of Kinesiology. The OBHRC plan of work is guided by a steering committee of representatives from OBHIC member programs and UMN faculty. A peer review committee of scholars and practicing clinical psychologists reviews all proposals and publications from OBHRC (See Acknowledgements for Peer Review Committee). In addition to annual risk assessment monitoring for OBHIC programs, and maintaining an on-going database of programs operating in the United States, OBHRC has conducted the following studies since its inception in 1999: 1) Defining the Scope of the OBH industry in the United States, 2) Assessment of Treatment Outcomes using the Youth-Outcome Questionnaire, 3) Qualitative Examination of Youth Well-being and the Role of Aftercare-use Two-years Posttreatment, 4) Risk Incident Monitoring in OBH and 5) Depression and Substance Use Disorder Prevalence and Outcome in a Sample of Adolescent Clients. Each of these studies was published as a technical report and also submitted to a peer reviewed academic journal for publication. For a complete list of publications by OBHRC to date, please see Appendix B of this report.

### **DEFINING THE SCOPE OF THE OBH INDUSTRY (1999-2001)**

A primary goal of this study was to define outdoor behavioral healthcare (OBH) and to better understand the nature and scope of the OBH industry operating in the United States. OBH was defined as those therapeutic programs that utilize outdoor settings, in which adolescent participants enroll, or are placed in the program by parents or custodial authorities concerned for their well being (Russell, 2000; 2003). A key aspect of this definition was to better understand how wilderness settings and expeditions are used as a component of the treatment process. Though no clear distinctions were or have been made, this study has sparked discussion as to the various types of programs that fall under the guise of OBH. The goal was to explore the different types of programs that were using outdoor environments to work therapeutically with youth. This would help improve understanding about OBH treatment services by parents, insurance companies, judicial authorities and social service agencies, public land management agencies, and Federal, State and local officials. This study also identified and defined common elements of programs practicing OBH treatment in order to develop consistent definitions and models of practice through reviews of literature, focus groups of practitioners, and a national survey of over 100 programs. In particular, the following questions were addressed:

- How many and what type of OBH programs are currently operating?
- What is the typical duration of treatment and how much time is spent on wilderness expedition?
- How many clients do OBH programs serve, and what is the cost?
- What role do parents play in the treatment process?
- To what extent are OBH programs licensed by state agencies, recognized by insurance companies, and accredited by national organizations?
- To what extent have clients tried other forms of counseling services prior to OBH treatment?
- To what extent do OBH programs evaluate the effectiveness of treatment?

A total of 116 OBH programs were identified, with 86 participating in the survey, yielding a 74 percent response rate. More than 80 percent of all responding OBH programs were licensed by a variety of state agencies, ranging from judicial systems to departments of family and youth services. A smaller percentage of adjudicated programs (31%) and more than half of the private placement programs (57%) were nationally certified by agencies such as the Council on Accreditation and the Joint Commission on Accreditation of Healthcare Organizations (JCAHO).

Most OBH programs served adolescent Caucasian males age 13-17 with a variety of emotional and behavioral disorders; adjudicated programs served a more racially diverse clientele. OBH programs were being used as an alternative treatment for adolescents not successfully treated by traditional counseling services --*more than three-quarters of all clients had tried other forms of counseling prior to OBH*. The cost of treatment ranged from \$123 per day for adjudicated programs to \$161 per day for private placement programs, averaging \$151 per day. It is noted that these figures are in 1999 dollars and would be higher in 2006 dollars. For example, the average cost per day for private placement treatment would now be \$215 if adjusted for inflation. Most clients did not receive third-party payment, but some did, indicating room for more recognition by insurance companies, social service, and adjudication agencies.

This study is updated herein (see page 39 for follow-up survey) to better understand how some of these industry wide characteristics have changed since 2000. Several trends have been identified through discussion, research and dialogue on OBH programs. First, several states have recently established state licensing regulations for OBH programs, potentially increasing the percentage of programs that are now required to be licensed. These states include Idaho, Colorado, Oregon, and Montana. This trend is likely to continue and will help ensure that programs have professionally trained clinical staff and are adhering to ethical and safety regulations. Second, as more programs become licensed, they are also able to acquire national accreditation status through JCAHO and COA, which is fast becoming a standard in the industry. Third, following this move toward accreditation, managed care and insurance companies are increasing third party payment for services making the intervention more affordable and accessible for families. This trend should be reevaluated and assessed empirically. Finally, ongoing research and evaluation of treatment services is fast becoming the standard. State licensing boards, national accreditation agencies, insurance agencies, and increasingly aware parent and watchdog groups are demanding accountability of the services offered. In this way, like any treatment process, OBH can identify ways to make the intervention safer and more effective.

## OUTCOME STUDY YOUTH OUTCOME QUESTIONNAIRE (2000-2002)

The first major outcome study of OBH treatment effectiveness was launched in May of 2000 and concluded in June 2002 with 1600 parents and clients participating from 8 OBH programs (Russell, 2001; 2002; 2003). A longitudinal repeated measure research design (Graziano & Raulin, 1997) was used to assess treatment effectiveness on a census of clients at eight-participating programs. Participants were surveyed using the Youth-Outcome Questionnaire (Y-OQ) and the Self Report Youth-Outcome Questionnaire (SR Y-OQ) (Burlingame, Wells, & Lambert, 1995) from June 1, 2000 to December 1, 2000 to track their therapeutic progress in treatment. The Y-OQ is a parent reported measure of a wide range of behaviors, situations, and moods, which commonly apply to troubled teenagers, whereas the SR Y-OQ is the adolescent self-report version (see Figure 2 for Y-OQ content domains).

**Figure 2. Six content areas of the Youth Outcome Questionnaire.**

Content Area	Assesses
Intrapersonal Distress (ID)	Assesses change in emotional distress including anxiety, depression, fearfulness, hopelessness, and self-harm.
Somatic (S)	Assesses change in somatic distress typical in psychiatric presentation, including headaches, dizziness, stomachaches, nausea, and pain or weakness in joints.
Interpersonal Relations (IR)	Assesses change in the child's relationship with parents, other adults, and peers as well as the attitude towards others, interaction with friends, aggressiveness, arguing, and defiance.
Critical Items (CI)	Assesses inpatient services where short-term stabilization is the primary change sought: changes in paranoia, obsessive-compulsive behavior, hallucination, delusions, suicide, mania, and eating disorder issues.
Social Problems (SP)	Assesses changes in problematic behaviors that are socially related, including truancy, sexual problems, running away from home, destruction of property and substance abuse.
Behavioral Dysfunction (BD)	Assesses change in a child's ability to organize tasks, complete assignments, concentrate, handle frustration, including items on inattention, hyperactivity, and impulsivity.

Y-OQ also includes a brief prognosis questionnaire that assesses three primary areas of adolescent risk behaviors to determine the degree to which these factors may effect treatment outcome: 1) existence and severity of family history of mental illness including both immediate and extended family; 2) current social environment including integrity and stress on the family structure and socioeconomic status; and 3) the child or adolescents' own medical, developmental, and mental health history (Russell, 2003; Wells *et al.*, 1996).

There were several implications reported in this study. First, adolescent participation in OBH treatment reduced behavioral and emotional symptoms of clients immediately following treatment as measured by both client self-report and parent assessments using the Y-OQ (see Figure 3). These reductions were both clinically and statistically significant.

**Figure 3. Mean Y-OQ score differences for client and parent assessment from admission to discharge.**

	N	Period	M	M Diff.
Client Report SR Y-OQ	481	Admission	70.67	20.07*
	481	Discharge	47.55	
Parent assessment Y-OQ	338	Admission	100.19	51.64*
	338	Discharge	48.55	

\*Statistically significant differences between admission and discharge average scores ( $p < .000$ )

Second, scores at 12-months post-treatment suggested that clients maintained therapeutic progress initiated by treatment and according to client self-report data, continued to improve. A randomly sampled set of clients' ( $n = 99$ ) self-reported outcomes at 12-months after completion of treatment that averaged 8 points under the cut-score of 46 ( $M = 38.61$ ), indicating that from discharge to the 12-month follow-up point, treatment scores improved by more than 8 points (8.64), but were not statistically different ( $t(98) = 2.026, p < .028$ ) (See Figure 4). This means that statistically speaking, the scores remained the same from discharge to 12-months, but showed a real improvement of more than 8-points. Parent assessment scores ( $n = 144$ ) showed a slight real increase in scores from discharge to 12-months (from  $M = 44.94$  to  $M = 48.67$ ) but were also not statistically different ( $t(143) = -.998, p = .320$ ).

**Figure 4. Mean Y-OQ scores at admission, discharge, and 12-months for client self-reports and parent assessments by incomplete and complete sets of data.**

	N	Admission M Y-OQ Score	SD	N	Discharge M Y-OQ Score	SD	N	12-Month M Y-OQ Score	SD
<b>Total Assessments at Admission, Discharge and 12-Months</b>									
Parent	560	99.04	29.45	266	55.10	40.73	77	42.84	35.32
Client	621	71.80	33.27	492	50.58	32.03	40	37.70	37.70
<b>Clients with Complete Data Sets at Admission, Discharge, and 12-Months</b>									
Parent	144	97.46	28.02	144	44.94	35.42	144	48.67	39.63
Client	99	68.30	34.14	99	47.25	30.78	99	38.61	31.83

Third, subscale analysis offered insight into specific aspects of behavioral and emotional well being that are potentially impacted by OBH treatment. Clients and parents showed agreement at discharge in assessing two subscales as being significantly improved: Behavioral Dysfunction (BD) and Critical Items (CI) (See Figure 5 for subscale scores). BD measures a youth’s ability to organize tasks, complete assignments, and handle frustration in different settings. The CI subscale measures critical issues such as obsessive- compulsive behavior, suicide, and eating disorders.

**Figure 5. Mean admission and discharge subscale scores for parent and client assessment including mean change and degree of statistical significance.**

	Frequency	Average Admission	Average Discharge	Average Difference*	Relative Percent Reduction
<b>Client Assessment</b>					
<u>Subscore 1</u> (Interpersonal Distress)	481	22.02	17.04	4.98*	22.6%
<u>Subscore 2</u> (Somatic)	481	7.41	5.71	1.70*	22.9%
<u>Subscore 3</u> (Interpersonal Relations)	481	6.91	3.84	3.07*	44.4%
<u>Subscore 4</u> (Critical Items)	481	9.72	4.79	4.93*	50.1%
<u>Subscore 5</u> (Social Problems)	481	15.28	11.84	3.45*	22.5%
<u>Subscore 6</u> (Behavioral Dysfunction)	481	8.70	6.77	1.93*	22.2%
<b>Parent Assessment</b>					
<u>Subscore 1</u> (Interpersonal Distress)	337	30.46	16.66	13.80*	45.3%
<u>Subscore 2</u> (Somatic)	337	6.97	3.75	3.21*	46.1%
<u>Subscore 3</u> (Interpersonal Relations)	337	16.00	5.66	10.34*	64.6%
<u>Subscore 4</u> (Critical Items)	337	14.02	5.07	8.95*	63.8%
<u>Subscore 5</u> (Social Problems)	337	23.14	12.08	11.06*	47.8%
<u>Subscore 6</u> (Behavioral Dysfunction)	337	8.61	5.15	3.46*	40.2%

\* Statistically significant differences (p<.000)

These findings are consistent with the goals of OBH treatment: stabilizing adolescents behaviorally and emotionally and helping them address their patterns of problem behavior. At the 12-month follow-up assessment, Behavioral Dysfunction and Interpersonal Relations subscales were above their cutoff scores (meaning that clients had deteriorated on these issues past a point of normality) for both client self-report and parent assessment. This could reflect the difficulties that parents and adolescent clients have in trying to return to home, school and/or peer environments that, prior to treatment, may have perpetuated problem behaviors.

## QUALITATIVE FOLLOW-UP STUDY TO ASSESS THE ROLE OF AFTERCARE (2003-2004)

A subsequent follow-up study (Russell, 2004, 2005) contacted the parents and adolescents who participated in the original outcome study to examine their well-being using a phone interview process. The phone calls were made 24-months after the completion of treatment and responses suggested that the majority of study participants were doing well. Also, over 80% of parents and over 90% of youths contacted believed that OBH treatment was effective for them at the time two-years after their experience, offering a unique long term perspective on evaluating the process. This addressed studies that conduct evaluations immediately after the program and indicated a hypothesized “post-program-euphoria”, which is reasoned to inflate evaluations of program and effects without a validated behavior or attitude change. The majority of parents and adolescent respondents believed that their son or daughter could not have begun their recovery without the initial impact of OBH treatment. An example of a comment reflecting this idea is illustrated in this comment from a respondent who said “yes, it opened my eyes to what I was doing from an objective angle and the fact that I needed to turn my life around” (Russell, 2005, p. 219).

**Figure 6. Themes, example questions, and example responses from interviews of parents and youths at the 24-month follow-up period.**

Themes	Example Question	Example Response
Youth Well-being	In your opinion, how is your child currently doing?	<i>He is doing fine right now.</i>
OBH Effectiveness	Was OBH treatment effective for your child?	<i>Yes, I believe it was.</i>
Aftercare	Did your child utilize aftercare after OBH?	<i>Yes, he did. He spent 9 months at an alternative school immediately after he completed [program].</i>
Aftercare Effectiveness	Was aftercare effective for your child? Why or why not?	<i>Yes, it was effective. He needed more structure and he needed to continue the work that he started at [program].</i>
Family Communication	How is communication in the family right now?	<i>It's ok, we are still having some issues with [youth].</i>
School	How is your child doing in school right now?	<i>He is doing OK. He graduated from high school but is not currently in college, he is just working.</i>
Scaled OBH Treatment Effectiveness	On a scale of 1-10, with 1 being lowest, how effective do you think OBH was for your child?	<i>About an 8.</i>

Qualitative assessments and scaled responses also suggested that former participants were doing well in some areas, and not so well in others. In task oriented areas, like school and participating in appropriate leisure activities, they were doing better than in others. For example, when asked if they were “staying out of trouble with the law” and how they were doing “forming friendships” the responses were mixed. In the area of staying out of trouble with the law, respondents suggested youths were not doing as well, with a large number having experienced legal problems (60% of respondents reported some trouble with the law). Parents and youths also reported mixed results when asked to evaluate the youth’s ability to make friends, with almost half citing this as a primary concern. This finding highlights the difficulties faced by youths who have gone through treatment of any kind and their attempts to establish identities, friendships, and lifestyles that are radically different than pretreatment. Many youths spoke of difficulty being social and shared a desire to “just blend in” with their peers. During this period following treatment, parents and youths also spoke of many ups and downs, which typify this developmental phase for youth in general. Their stories highlighted how difficult this process is for youth who are also struggling with mental, emotional or psychological disorders, which initiated their need for treatment (Russell, 2005).

Many parents and youths self-reported substance use during the follow-up period (See Figure 7). The reality appears to be that most youths are still using substances, even if substance use was a primary focus of treatment (74% of youths in this sample). This is despite the fact that 84% of all youths utilized aftercare services, deemed to be a successful predictor of abstinence in follow-up studies of substance abusing youth (Blanz & Schmidt, 2000; Lash & Blosser, 1999). Some researchers in substance use treatment claim a “harm reduction model” may be more appropriate when working with adolescents, reflecting attitudes that the majority of parents and youths in this study seem to have. This approach may be more aligned to OBH treatment philosophy as well. Harm reduction understands that addiction/substance use is a complex phenomenon and recognizes that many, if not most, people do not respond well to traditional models of treatment in which goals are predetermined by the therapist (authority figure). Proponents of the harm reduction model believe that starting at the client's level (i.e. appreciating what changes he or she might be willing or wanting to make) is the key to alleviating or eradicating addictive behaviors (Tatarsky, 2002).

**Figure 7. Number of youths who are still using substances, are not using substances, and was not a major focus of treatment codes developed from the question: Why do you believe your child is struggling with substance use issues.**

Response	Frequency	Percentage	Example response
Still using substances	55	62.6	<i>Absolutely not, he smokes pot and drinks.</i>
Not using any substances	20	22.7	<i>Yes, he was tested about a month ago and was clean.</i>
Not focus of treatment	13	14.7	<i>Was not a problem prior to treatment.</i>
Total	88	100	
Pattern Codes (Why still using?)	Descriptive Codes		Example Response
Depression/and Self Esteem	Depression Hit Rock Bottom Lack Maturity Never Committed Self Esteem Self Medication		<i>There is this big empty hole that [youth] tries to fill with substances.</i>
Family Issues	Parent Bad Role Model Lack Parent Boundaries Sibling Pressure		<i>Family patterns, he wanted to be closer to his brother but his brother is an alcoholic. Mom is also into drugs, actually his sister is too.</i>
Likes Party	Likes to Party		<i>He participates in all these fraternity drinking parties, I don't believe he is out of control, I don't know. He just likes to party.</i>
Peer Influence	Peer Pressure Same Environment		<i>He gets bored, he is very popular with his friends and he uses with them.</i>
Personality	Personal Issues		<i>Diagnosed with profound ADHD. It's his personality, he just craves it. I believe he is an addict.</i>

Aftercare is utilized by most youths in OBH treatment and can range from the youth returning home to families and participating in outpatient treatment, such as individual or group therapy, to attending a residential program with an educational and clinical focus. Parents and youths cited several reasons for this, including: 1) OBH treatment brought up several issues that still required professional care to resolve, 2) that progress had been made and the parents and OBH staff believed aftercare would facilitate the maintenance of this progress, and 3) that the youth needed an alternative environment so as to not return to old habits and patterns. Many parents believed that the experience was an effective assessment tool and impacted their child to recognize the need for change. This was also corroborated through youth reflection on the process. Youths and parents seem to disagree as to the need for and effectiveness of structured residential aftercare environments. One youth stated, “I hated it, didn’t like the program, and all the stuff they made us do.” Reflecting a more positive evaluation of residential aftercare placement, another youth stated, “Yes, it impacted me and opened my eyes to who I was and what I was doing.” This disconnect between parent and youth evaluations of the need for aftercare is an interesting finding that may challenge OBH program staff to find ways to arrive at a consensus

as to what both parties may need and want in aftercare situations. The perception that OBH treatment “fixes adolescents” and delivers, from a wilderness experience, a youth who is ready to return to peer, family and school or work environments replete with new found confidence was simply not supported in this study. Many youths required continued and on-going treatment in a residential program to address issues raised in wilderness treatment.

Also of note in examining the transition to aftercare was the stated desire of parents to remain connected to OBH programs and staff and to have clearly established aftercare plans. Many parents cited the lack or absence of any plans and felt the programs had more of a responsibility to prepare their families for transition and posttreatment care. Several parents and youths could not recall an aftercare plan and specifically stated that they had wished they had been able to more easily contact program staff. Parents that did have clear plans and resources for aftercare believed this was crucial for their children. These parents believed support and structure was still necessary to maintain therapeutic progress initiated by OBH treatment. Establishing networks and programs for parents that are affordable and accessible appears to be critical for OBH program effectiveness. This process helps programs to effectively provide primary care and assessment of clients and help families make successful transitions to aftercare situations. Parents identified barriers to placing their children in aftercare services as, the excessive costs of many of these services (i.e. therapeutic boarding schools and residential treatment centers), lack of insurance coverage and lack of awareness of programs and services available.

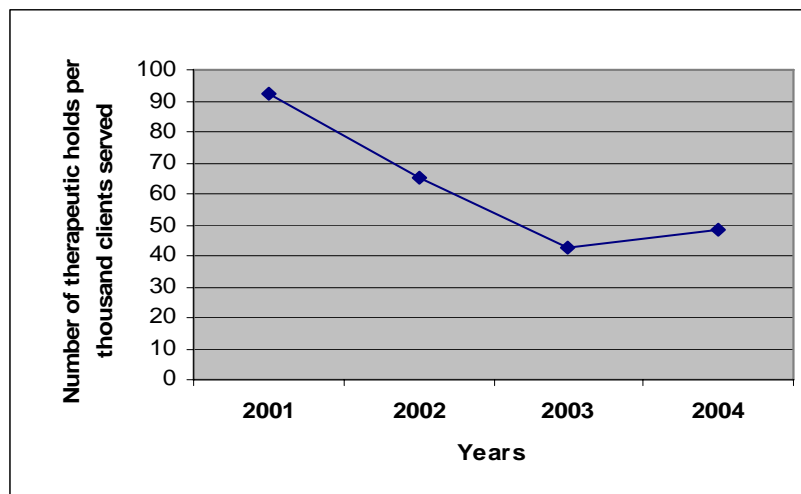
#### **RISK INCIDENT MONITORING (1999-2005)**

The monitoring of risk-related incidents in residential treatment programs for adolescents with behavioral and emotional disorders is important in light of increased oversight of service delivery by state and national agencies charged with their licensure and accreditation. The goal of any monitoring program is to reduce the rate of injury or incident, which improves service delivery, in turn making the program safer and more effective. This study reported the results of a risk-related incident monitoring program developed by members of the Outdoor Behavioral Healthcare Industry Council (OBHIC), which was implemented in 1999, and managed by OBHRC in 2001. OBH programs engage resistant adolescents in inherently risk-related outdoor activities during the course of treatment, which averages an upwards of 50 days living and traveling in wilderness environments. A risk-related incident monitoring program was developed and utilized to track, report and analyze incidents at approximately ten OBH programs between the years 2001 and 2004. Specific incidents monitored during this time period include therapeutic holds and restraints, runaways, injuries and illnesses. The percentage of clients that complete their treatment and graduate was also tracked. Results show that during the years 2001-2004 the rate of therapeutic holds, runaways, injuries and illnesses steadily declined. Coupled with this reduction in incidents have been a reported three fatalities while the client was in treatment since 1996. OBHIC related programs have conducted approximately 1 million client field days, which equates to approximately 3.0 fatalities for every one million user days in the field.

An example of an incident monitored in this program is the *therapeutic hold*. Therapeutic hold occurs when a client's freedom of movement is physically restricted. A Level I therapeutic hold occurs when a client passively resists staff making physical contact but complies with the movement requested. This would be the case when a client is led along the trail, or moved to his/her campsite, by a hand pulling gently on a backpack strap or guiding her/him by the elbow. The client in such a case may not "want" to go in the direction encouraged, but is "willing to go" when urged along; any resistance is passive. A Level II therapeutic hold occurs when the client actively resists, and is propelled or held still against that resistance. The hand on the pack strap or the upper arm may still be all that is used, but now it is strongly pulling or pushing a client who is actively resisting. Immobilizing a client against his/her resistance in a standing, sitting, or prone position is a more common type of therapeutic hold. Finally, a restraint occurs when a Level II therapeutic hold exceeds 30 minutes.

Figure 8 shows that in general, therapeutic holds had dropped steadily from 2001 – 2003. In 2004 the total number of therapeutic holds had increased slightly to levels seen in 2002. Another way to interpret the data is to compare the therapeutic holds to the number of days the client spent in the field. For example, in 2004, there were a total of 50,356 client field days, and less than 80 therapeutic holds were recorded. More specifically, almost 60 of those reported were *Level I TH* or "physical assists." This translates to 1.5 therapeutic holds per thousand client field days, meaning that almost 1000 days of treatment would pass before a client would experience a physical assist.

**Figure 8. The number of therapeutic holds for every thousand clients served between the years 2001 and 2004.**



One consistent finding from this study is that most risk-incident rates appear to decline between 2001 and 2004. Questions asked in this study include: Could this be due to systematic strategies implemented by programs after initial monitoring began? If so, what collective and unique strategies are being implemented and which ones are showing the most effect? Could monitoring efforts have increased discussion of incidents by program staff, creating a "cultural awareness" which influenced incident rates? In regular meetings of these programs, these questions have been asked and anecdotal responses have been proposed. However, empirical answers derived from systematic research are critical and are beyond the scope of this paper.

Moreover, how do these rates compare with other therapeutic residential facilities? Are they less, more? What factors may be driving these differences? Also of note is that restraints, though extremely low in terms of rates per client field day and clients served (approximately one restraint every 3,000 client field days), showed a slight increase during this time period. Is this due to an increase in pathology found in the clientele in recent years? Perhaps a lack of consistent training programs offered at each program? Or a high rate of turnover for primary care staff? It is hoped that these data will instill an industry-wide recognition of the need to focus on these issues through systematic research and engage in best practices to reduce the risk to clients, staff, and families utilizing this treatment. Programs like NOLS and OB continue to set the industry standard in monitoring illness, injury, and fatality rates in outdoor activities. Further efforts are being made to better understand the rates of medical risks in related outdoor activities by wilderness medicine associations like the Wilderness Medical Institute (Boulware, Forgey, & Martin, 2003). Collaboration with these organizations on future research will allow critical analysis of incidents that may shed light on questions arising from the descriptive reporting of these data.

## DEPRESSION AND SUBSTANCE USE STUDY (2003-PRESENT)

In June of 2003 an 18-month study was launched to examine OBH outcomes, with a specific focus on levels of depression, anxiety and stress, and patterns of substance use for adolescents (See Russell, 2006, *Examining Substance Use Frequency and Depressive Symptom Outcome in a Sample of OBH Participants*, available at <http://www.obhrc.org>). Five program members of OBHRC participated in the study including: The Anasazi Foundation (Mesa, AZ), Aspen Achievement Academy (Loa, UT), Catherine Freer Wilderness Expeditions (Albany, OR), OMNI Youth Services, (Buffalo Grove, IL), and RedCliff Ascent (Springvale, UT). The goal of this study is to look more closely at key treatment processes and their relation to more specific outcomes associated with levels of depression and substance use.

Important questions addressed in the study include:

- How do client stages of readiness to change affect treatment outcomes?
- How does the therapeutic alliance between the adolescent and key staff at each program impact their treatment outcomes and can it be reliably measured?
- What levels of depression, anxiety and stress are adolescents entering treatment with and does OBH have an affect on these domains?
- What patterns of substance use and dependence are common among OBH clients and what outcomes can be expected from OBH treatment on these issues?

### *Methods*

A total of five measures were used at admission, mid-point in treatment, discharge and a six-month follow-up to address the research questions presented. Data were collected between June 2003 and December 2004, and was completed after attempts were made to gather all follow-up data of a random sample of the initial clients included in the study-identified at admission into treatment. Data were collected at each program in a similar and consistent manner and sent directly to OBHRC for data entry and management. The following measures, which all have excellent demonstrated psychometrics, were used to assess: 1) readiness to change behavior in treatment (URICA), 2) depression, anxiety and stress (DASS), 3) substance use (PEI), 4) group therapy alliance (GTAS) and 5) treatment satisfaction.

**University of Rhode Island Change Assessment (URICA).** The URICA (McConaughy, Prochaska, & Velicer, 1983) is a 32-item instrument designed to assess readiness to implement major lifestyle changes. That is, it assesses level of motivation to modify behaviors such as alcohol and drug consumption. Items are scored on a scale of 1 to 5 from “strongly disagree” to “strongly agree.” Examples of items include “I’ve been thinking I might want to change something about myself” and “I thought once I had resolved my problem I would be free of it, but sometimes I still find myself struggling with it.” The URICA is based on the transtheoretical model of change set forth by Prochaska and DiClemente (1983, 1992); this model has been extensively reviewed in the literature and is widely accepted as one of the most useful conceptualization of the process of change. Moreover, both clinical and research applications of the transtheoretical model are abundant.

**Depression, Anxiety and Stress Scale (DASS)** (Lovibond & Lovibond, 2002) contains three separate domains: depression, anxiety, and stress. Each domain has 14 items; within each domain there are several subscales that assess particular attributes of the domain, for example, dysphoria (Depression scale), autonomic arousal (Anxiety scale), or difficulty relaxing (Stress scale). Participants are asked to rate items on scale of 1 to 4 based on the degree to which they experienced the given item within the last week. Examples of such items include “I felt scared without any good reason” and “I found that I was very irritable.” Items are summed for each scale to obtain separate scores for each of the three dimensions.

**Personal Experience Inventory (PEI)** (Winters & Henley, 1989) utilized in the national senior high school surveys (Johnson, Bachman, and O’Malley, 1985) it assesses frequency of use (on how many occasions ) for 12 drug categories, on a seven point scale, as well as an individual’s degree of psychological involvement with alcohol and other drugs.

**Group Therapy Alliance Scale (GTAS)** (Marziali, Munroe-Blum, & McCleary, 1997) is a 30-item questionnaire designed to gauge level of attachment members have to a therapeutic group; attachment is measured in terms of member-to-member and member-to-therapist.

**Treatment Satisfaction Questionnaire** assesses the degree to which the client was satisfied with their treatment in general and the degree to which they believed treatment helped them with their issues.

Data entry of follow-up data was completed in the Fall of 2005 and subsequent analysis is ongoing. The information was compiled in a technical report entitled *Depressive symptom and substance use frequency outcome in outdoor behavioral healthcare* (Russell, 2006). The report is now available at <http://www.obhrc.org>.

## FOLLOW-UP NATIONWIDE SURVEY OF OBH PROGRAMS

This section reports results of a follow-up assessment of the OBH industry that was first published in 2000 in a technical report entitled *Outdoor Behavioral Healthcare: Definitions, Common Practice, Expected Outcomes and a Nation-Wide Survey of Programs* (see Russell, 2000; 2003 for complete report). The goal of the on-line survey was to assess the number of programs that identified themselves as meeting more specific criteria for how an OBH program operates in today's mental health service delivery lexicon. The President, CEO, Program Director, or Senior Administrator of each program was asked to complete the survey given their level of knowledge about their respective program. The models and subsequent typologies developed from the results prompted a philosophical discussion within the program members of the Outdoor behavioral Healthcare Industry Council as to the typology and the types of programs referenced. A further refinement of the definition of OBH was developed, with the goal being a more detailed illustration of two key factors that are reasoned to distinctly define OBH theory and practice: 1) the *clinical* treatment model, supervised and facilitated by licensed professionals, that underlies the approach, and 2) the *primary* use of wilderness expeditions as a therapeutic tool. The reason behind this was not for isolationist purposes by OBHIC programs that developed the definition, but rather to more accurately illustrate to parents, mental health practitioners, and respective agencies what OBH is and how it works. The goal was then to utilize this new and more refined definition and conduct a follow-up industry-wide survey to determine how many programs self-reported fitting this definition and to then assess and analyze these industry characteristics.

Each program was asked if they saw themselves as a program that fit the following description:

The term Outdoor Behavioral Healthcare (OBH) refers to programs that subscribe to a multimodal treatment model within the context of wilderness environments and backcountry travel to facilitate progress toward individualized treatment goals. The approach incorporates the use of evidenced-based clinical practices including client assessment, individual and group psychotherapy conducted by independently licensed clinicians and the development of individual treatment and aftercare plans.

If they agreed and said yes, the respondent would complete the on-line survey asking about various program characteristics (see Appendix C for complete list of programs contacted for survey). The survey was developed at the University of Minnesota, pilot tested, and launched in August of 2005. The following types of information were assessed for each program respondent: 1) organizational structure and history, including how long the program has been in operation, profit or nonprofit status, and number of staff; 2) financial indicators, including number of clients served, and revenues; 3) client and family characteristics; 4) assessment models employed, including outcome and risk assessment procedures; and, 5) insurance company recognition, state licensure and accreditation. Six tasks were completed following guidelines from the tailored design method by Dillman (2000): 1) a list of programs was developed fitting the above definition of outdoor behavioral healthcare; 2) key personnel at each program were contacted by e-mail and asked to participate in the study; 3) an e-mail and attached notice with a link to the survey were sent to directors and key contacts at each program; and 4) follow-up e-mails and phone calls were made to the key person at each program, and in many cases a facsimile was sent if the survey was not yet returned. Data from the returned surveys were downloaded,

cleaned, and analyzed in the Statistical Program for the Social Sciences (SPSS™). Analysis procedures included frequency distributions, descriptive statistics to identify industry wide averages and cross tabulations to determine frequencies and relationships between types of programs and program models and other key variables of interest.

The following research questions guided the data analysis.

**Table 1. Research questions guiding follow-up study of OBH programs.**

<b>Research Question 1</b>	How many programs see them as fitting a more specific definition of OBH?
<b>Research Question 2</b>	What types of OBH programs are currently operating?
<b>Research Question 3</b>	What are the organizational structures and sponsorship of OBH programs?
<b>Research Question 4</b>	How many clients are served by OBH programs, and at what cost?
<b>Research Question 5</b>	What revenues are generated by OBH programs?
<b>Research Question 6</b>	What types of clients (demographic, behavioral, and emotional) do OBH programs serve?
<b>Research Question 7</b>	What types of assessment procedures are used by OBH programs to evaluate outcomes?
<b>Research Question 8</b>	How many OBH programs are recognized by insurance companies and accreditation agencies?

Answers to these research questions are presented in the following to develop a profile of the organizational, financial, process, and demographic characteristics of the industry, and the clients and families they serve.

The survey was sent to 124 OBH programs for which a personal contact had been made and to which 102 responded, yielding a response rate of 82 percent. Programs received follow-up contact at least two times. The 82 percent response rate is slightly better than the range of response rates of previous comparable studies which have reported response rates of between 45 and 80 percent (Davis-Berman and Berman, 1994; Friese, 1996; O’Keefe, 1989; Russell and Hendee, 2000).

## NUMBER OF OBH PROGRAMS CURRENTLY OPERATING

A total of 65 of the 102 program administrators (64%) that responded to the survey, identified through website searches and from an existing database, answered yes to the question: Do you consider yourself an OBH program based on the following definition developed by the Outdoor Behavioral Healthcare Industry Council (OBHIC). Of the 65 program respondents who indicated they believed they were an OBH program, Table 2 shows that *Expedition* (35.4%) and *Residential* (26.2%) programs were the most represented program models (See Table 3 for OBH program model definitions). Interestingly, the *Integrated Expedition*, a new model not evidenced in the first study, was the third most represented model, with 11 programs currently identifying themselves as offering shorter, rotational wilderness expeditions of up to 5-7 days, supplemented with 2-3 days of residential and school based curricula.

**Table 2. The number of programs who self reported reflecting one of seven OBH models.**

	Frequency	Percent
Base Camp	9	13.8
Expedition	23	35.4
Residential	17	26.2
Outpatient	2	3.1
School	2	3.1
Integrated Expedition	11	16.9
Multiple	1	1.5
<b>Total</b>	<b>65</b>	<b>100.0</b>

**Table 3. Definitions of OBH models utilized in survey asking respondents to indicate the model that best represents their program.**

OBH Model Definitions
<b>Base Camp</b> -Outdoor base camp supplemented by wilderness expeditions
<b>Expedition</b> -Program is conducted primarily in wilderness on expeditions
<b>Residential</b> -Residential treatment supplemented by wilderness expeditions
<b>Outpatient</b> -Outpatient treatment supplemented by wilderness expeditions
<b>School</b> -Therapeutic school supplemented by wilderness expeditions
<b>Integrated Expedition</b> -Short expeditions (4-6 days) and then return to residential area (2-3 days)

## ORGANIZATIONAL STRUCTURES AND SPONSORSHIP OF OBH PROGRAMS

Table 4 shows that the majority of OBH programs are *Private Non-profit* (40%) organizations, with approximately one-third being *Private Corporate* (33.8%). Only five programs were operated by the government, which were all in the correctional domain working with adjudicated youth.

**Table 4. Percent of OBH programs self-reporting the organizational structure of their organization.**

	Frequency	Percent
Partnership	5	7.7
Sole Proprietor	5	7.7
Private Corporate	22	33.8
Private Non Profit	26	40.0
Government	5	7.7
Other	2	3.1
<b>Total</b>	<b>65</b>	<b>100.0</b>

## ORGANIZATIONAL STAFFING AND NUMBER OF CLIENTS SERVED

Respondents were asked how many employees they maintained on average throughout the years in the areas of management, administration, field staff, and clinical designations. Table 5 shows the median number of employees in each group; the median was used in this case because two of the responding programs were disproportionately larger than the others in terms of staff and clients served. These programs were organized under a large central structure and had several autonomous facilities that operated within this organizational structure. The total number of employees for these 65 organizations ranged from three to over 1,000. Field staff comprised by far the highest percentage of staff at each program (*Mdn* = 19.0), outnumbering the other areas in total (Management = 4.0; Administration = 4.5; Clinical = 3.0). Interestingly, the smallest number of representative staff was the clinical group, with a median number of staff at each program comprising just three personnel. The total number of clinical staff ranged from zero to 200, with 67% of all programs having 10 or fewer clinicians on staff and 33% having over 10 employed clinicians. These data suggest that organizationally, OBH programs are relatively small, with a median number of total employees being approximately 30. It is important to note that five respondents indicated they employed no clinicians on average annually, but noted in a comment box that these clinicians worked seasonally for the organization in summers, when they primarily operated their trips.

**Table 5 Median number of staff employed in each type of position at each organization.**

N = 65 programs	Management	Administration	Field	Clinical
Median Number of Staff Employed	4.00	4.50	19.00	3.00

The median number of clients served annually was 95, with a range of 20 clients per year to over 1,300. Table 6 also reports that the median length of stay in treatment was 56 days, with approximately 30 of those days spent on wilderness expedition. This means that youth in programs spend on average 54% of their time in treatment on wilderness trips in small groups across the five represented OBH models defined above. Each program was also asked which types of lands (Federal, State or Private) they primarily conduct their wilderness trips on. The most frequent type of land indicated was Federal (68%), less utilized State lands (25%), and only one program indicated they operated primarily on tribal lands.

**Table 6. Average number of clients annually served, the median length of stay, and the median percent time spent on wilderness expeditions while in treatment.**

N = 65 programs	Median Number of Clients Served	Median Length of Stay	Median Days Spent in Wilderness
Median	95.00	56.00	30.00

#### **LICENSURE, ACCREDITATION, COST OF TREATMENT, AND REVENUE GENERATION**

When programs were asked whether the states in which they operated in had standards specific to licensing an OBH program, 84% indicated yes, while 10 said no (16%). States like Minnesota and Montana do not currently have specific licensing standards for OBH programs, while states like Idaho, Colorado, and Oregon have recently passed legislation, in the past three years, with licensing guidelines specific to OBH program operation. Because OBH programs include extended wilderness expeditions, tradition residential treatment guidelines (for example, maintaining a medical doctor or registered nurse on staff) are impractical, and need to be fitted to OBH operation while maintaining safety and oversight that protects youth and families. Coinciding with the percentages of states that have licensing, all 53 programs that operated in a state with standards in place were indeed licensed; 10 respondents stated they were not licensed (two respondents chose not to respond to this item). About half the respondents were nationally accredited by an organization such as the Joint Commission (JC) or the Council on Accreditation (COA), both of which have also implemented national accreditation standards that are specific to OBH programs. These standards are considered more rigorous than state standards and require, for example, that programs routinely monitor outcomes and have certain ratios of licensed staff to clients. A small percentage of respondents indicated they were accredited by a national accreditation agency that specializes in standards specific to outdoor programs, such as the Association for Experiential Education (AEE). These standards specify risk management strategies and leader/guide credentials for outdoor education programs. When asked whether their program currently had licensed mental health professionals on staff that work through individual treatment plans with clients, 88% said yes, while 12% said they did not. This is an interesting finding that suggests that though a program may have viewed itself as an OBH provider, they did not necessarily have a licensed mental health professional on staff currently.

**Table 7. Responses to questions asking about existing state regulations, whether the program is currently licensed, accredited, and the program is specifically accredited by an outdoor accreditation agency.**

Question	Yes (Percent )	No (Percent)	Total
Does the state you operate in have specific standards for OBH programs for you to be licensed?	53 (84.1%)	10 (15.9%)	63
Is your program currently licensed by a state agency?	53 (84.1%)	10 (15.9%)	63
Is your program currently nationally accredited?	33 (50.8%)	32 (49.2%)	65
Are you currently licensed by an outdoor program accrediting agency?	13 (20.0%)	52 (80.0%)	65
Do you currently have licensed mental health professionals on staff that work through individual treatment plans with clients?	57 (88%)	8 (12.3%)	65

Cost of treatment was determined by asking each program to provide their average charge per day when a client is in treatment. The average charge per day was \$278, with a range of \$0 to \$450. Given the per day charge of treatment, it is possible to calculate the total revenues generated by OBH programs currently operating. Table 8 shows that over \$300 million dollars are generated by these 65 programs. Because 70% of all programs operate on public federal lands and must use permits to do so, it is also possible to guesstimate the amount of revenue that is generated by the federal government from OBH program operators. For example, Federal permits require that OBH programs pay 3% of gross revenues for their annual permit. This generates \$6.74 million in annual revenue paid to federal agencies such as the US Forest Service and Bureau of Land Management. Because these programs typically operate in rural and western areas, the OBH program industry appears to be a noteworthy economic influence in the rural counties and federal land management districts in which they operate.

**Table 8. Average number of clients annually served, average length of stay in treatment, average cost per day charge, and average annual revenue generated by OBH programs in survey.**

N = 65 Programs	Average Number of Clients Annually Served	Average Length of Treatment	Average Cost Per Day of Treatment	Average Annual Revenue Generated by OBH Programs
Revenue Calculation	165	107	\$278	\$321,260,940.00

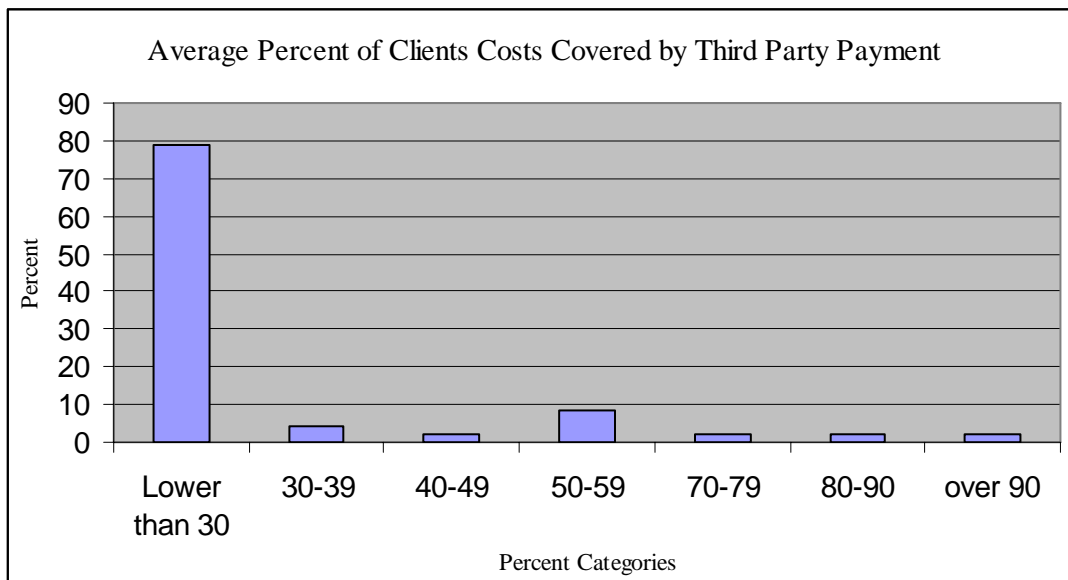
Each program was also asked whether parents are able to utilize third party payment to help defer the costs of treatment. Third party payers, such as Blue Cross Blue Shield, cover the cost of mental health treatment at up to 80% of the total cost in many states. Over two-thirds of all respondents (68%) indicated that they do accept third party payment and have the resources to bill third party payers, while one-third said they were not able to accommodate third party payment. When asked why they were not able, most respondents indicated that it required licensure and they were an unlicensed program (16%); the remaining did not indicate why they were not able (16%)

**Table 9. Percentage of programs that responded yes or no to the question that asked, “Does your program accept third party payment from clients or insurance providers”?**

Does your program accept third party payment from clients or insurance providers?	Frequency	Percent
Yes	44	67.7
No	21	32.3
<b>Total</b>	<b>65</b>	<b>100.0</b>

The two-thirds of programs that did accept third party payment reported that an average of less than one-third of all treatment costs typically were covered by third party payment. This data shows that the burden of paying for treatment services clearly falls on the parents or guardians of youth enrolling in treatment, with very small percentages of clients getting even half of their costs covered by third-party payers.

**Figure 9. Average percentage of costs covered by those parents that utilize some form of co-pay for treatment costs.**



## FAMILY INVOLVEMENT IN TREATMENT

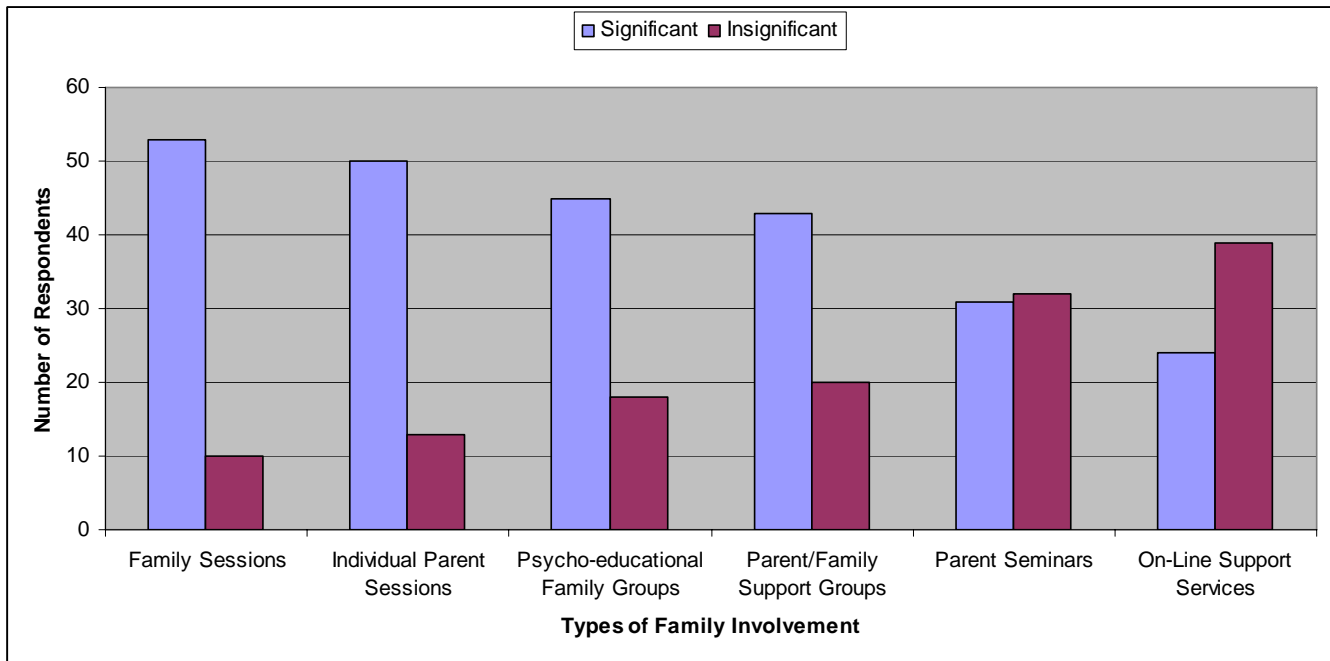
Several questions on the survey asked programs to describe the methods and the degree to which they work directly with the families of a youth while the youth is in treatment. The types of family involvement included: a) individual parent sessions, b) family sessions, c) psycho-educational groups, d) support groups, e) seminars, and f) on-line support services. Respondents indicated the relative degree of significance each of these types of family programming played in their overall treatment approach. Figure 10 reports the average score of the type of family involvement programming (on a scale from 1-Very Insignificant to 4-Very Significant), as well as the percentage of respondents that indicated it was either very significant or significant or very insignificant or insignificant.

**Figure 10. Type of family involvement and its significance to programming.**

Question	Very Significant or Significant	Very Insignificant or Insignificant	Average Importance
Family Sessions	53 (84.1%)	10 (15.9%)	3.19
Individual Parent Sessions	50 (79.4%)	13 (20.6%)	2.97
Psycho-educational Family Groups	45 (71.4%)	18 (28.6%)	2.81
Parent/Family Support Groups	43 (68.3%)	20 (31.7%)	2.56
Parent Seminars	31 (50.8%)	32 (49.2%)	1.98
On-Line Support Services	24 (38.1%)	39 (61.9%)	1.51

Note. Average importance is based on a scale of 1 = Very Insignificant to 4 = Very Significant

**Figure 11. Number of respondents that indicated various types of family involvement in treatment programming was either significant or insignificant.**



It is clear that most programs are utilizing family sessions, individual parent sessions, and psycho-educational groups and that these types of involvement are more important in programming than resources like on-line support services or parent “seminars.” Over three-quarters of all programs said that these three intervention types were significant aspects of the treatment process. When asked on average how much contact time each program has with parents, a wide range was reported. Over 50% of all respondents reported 15 hours or less of contact time, 30% between 15 and 30 hours of contact time, and 20% greater than 30 hours. The greatest amount of contact time was 124 hours, while the least was less than one hour. What this data represents is, while some family involvement in programming exists; the percentage of time families are involved compared to the overall time the client is in treatment is very small.

## OBH CLIENT DEMOGRAPHICS

A total of 10,753 clients were served in 2006 by the 65 programs who responded to the survey. According to questions asked on the characteristics of clientele, the typical OBH client appears to be a male Caucasian adolescent from a middle socio-economic class. . The average gender percentages were 65% male and 35% female, with an average age range of 12 - 17 years old. Only 7% of programs work with youth 10 years or younger, and 30% with youth ages 11 through 12. Over 90% of programs indicated they work with youth primarily between the ages of 13 – 17, with over 60% of programs saying they would work with a youth age 18 or over. This was surprisingly high, given the fact that when youth turn 18, they have the right as an adult to either refuse to enter or can make the decision to leave treatment once. It would be interesting to look further into 18 year old youth who complete treatment, and explore their rationale, process, and reasons for completing the program.

Table 10 shows that over 98% of programs indicated that a large or very large percentage of their clientele was Caucasian American, with 11% indicating that their largest percentage was African American youth. (The question was asked in this manner to ease respondent burden in summarizing clientele data and reporting exact statistics, because many programs may not keep these types of data). When examining household incomes of families served, the data varied, with the majority reporting that their largest percentage of families had annual household incomes greater than \$60k, though several programs indicated they served large percentages of families with incomes that ranged from [\$20k to less than \$60k]. This may indicate an emerging trend in programming.

**Table 10. Percentage of respondents who indicated that various racial distinctions and household incomes for clients typically served were a large percentage of their annual clientele.**

<b>Race</b>	<b>Frequency</b>	<b>Percentage Who Indicated a “Large Percentage” of Clients</b>
African American	7	10.9%
Asian American	0	0.0%
Caucasian American	63	98.4%
Hispanic American	9	14.0%
American Indian/Alaskan Native	6	9.9%
International	1	1.6%
<b>Family Household Income</b>		
Less than \$20k	16	24.6%
\$21k – \$40k	13	20.0%
\$41k– \$60k	17	26.2%
\$61k– \$80k	31	47.4%
\$81k– \$100k	32	48.2%
Over \$100k	32	32.6%

Program administrators were asked to describe how clients are referred to their programs, and where they primarily come from in relation to the program (local, national, etc.). The questions were asked in a similar manner as described above, in that they were asked to infer relative percentages (very small to very large percentages) in their typical year of program operation. Table 11 reports the results of those programs that indicated a “Very Large” percentage of their clients exhibited the associated characteristics with regards to referral.

**Table 11. Clients who come to program’s primary residence in relation to program and referral sources by respondents who indicated a “large percentage” of their clients reflected that proportion.**

<b>Clients Referral Location</b>	<b>Frequency</b>	<b>Percentage Who Indicated Very Large Percentage</b>
Local (in state/province)	20	31.3%
Regional (within national region)	10	15.4%
National (within country)	16	25.0%
International (outside country)	1	1.0%
<b>Referral Sources</b>		
Judicial system	14	21.9%
Parent or guardian	13	20.3%
Therapist counselor	9	14.1%
Educational Consultant	5	7.8%
Youth Agency	5	7.8%
Other treatment program	4	6.3%
Professional Associations	1	1.5%

Table 12 reports the relative frequency of how adolescent clients come to OBH programs. The data shows that the majority of clients come to the programs either voluntarily (40% of all respondents indicate a large percentage of their clients come to their programs voluntarily) or are escorted by parents who have strongly suggested or have coerced them into entering treatment. Fewer programs indicated that private escort services (21.6%) or legal escort services were used (9.3%).

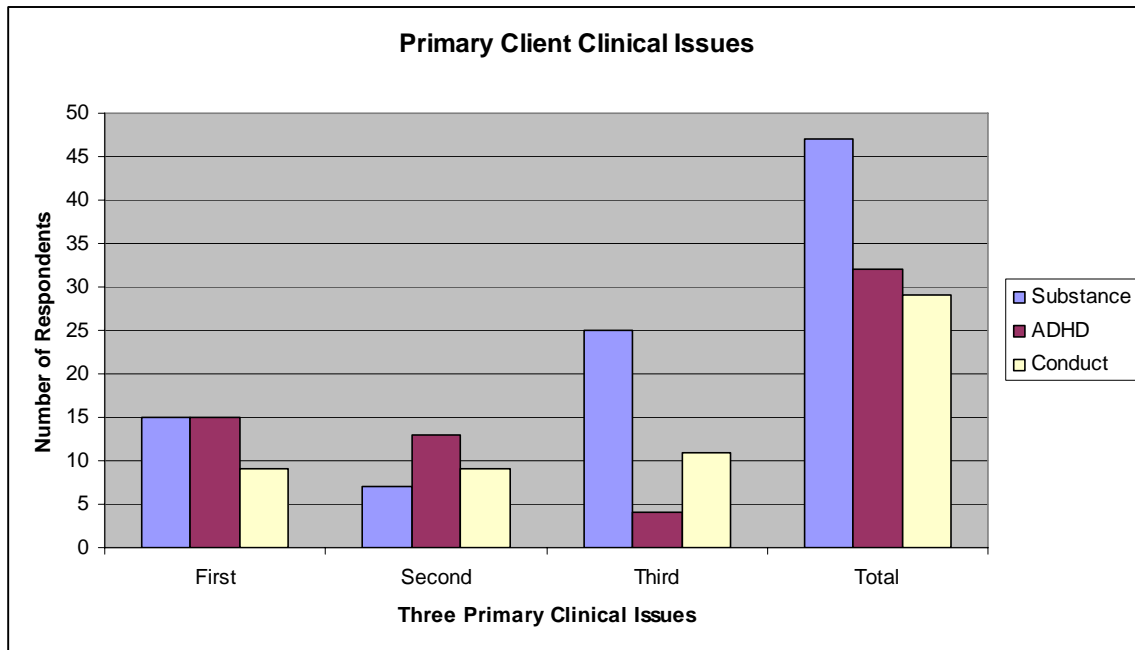
**Table 12. Respondents who indicated “zero of none” of and a “large percentage” their client population came to the program under a specific disposition.**

<b>Client Willingness</b>		
	<b>None (Frequency)</b>	<b>Large Percentage (Frequency)</b>
Voluntarily	1.6% (1)	40.0% (26)
Parent or custodial authority suggested or coerced	6.5% (4)	60.0% (39)
Escort services	40.3% (25)	21.6% (14)
Escorted by legal authorities	69.4% (43)	9.3% (6)

### **TYPICAL CLINICAL ISSUES SERVED, AND MENTAL HEALTH SERVICE USE HISTORY**

To better understand the types of clinical and mental health issues that OBH programs serve; respondents were asked to list the top three primary clinical issues with which clients present at admission. Figure 12 shows that the clinical issue mentioned with the most frequency was substance use, with a total of 45 programs indicating it was at least one of the top three issues. ADHD was mentioned second most frequently ( $N = 32$ ), with conduct disorder third ( $N = 29$ ).

**Figure 12. The primary clinical issues that clients present with at admission presented by ranks provided by respondents.**



Respondents were asked to estimate the relative percentage of their clients who had tried other types of counseling services prior to entering OBH treatment. This information is culled from intake assessments completed by each program, and is reasoned to be a reasonably accurate representation of past mental health service utilization. A total of 59 of the 63 programs (94%) indicated that more than 70% of their clients had tried some other form of counseling or mental health services prior to entering OBH programs.

#### **DESTINATIONS AFTER OBH TREATMENT AND THE USE OF AFTERCARE SERVICES**

The use of aftercare services and the destinations of adolescents after they complete treatment are important considerations and decisions that are made by parents, OBH clinical staff, and the adolescent in treatment. The goal of such placement is to identify the most appropriate aftercare for the client to ensure that no gains are lost and the families can handle any issues that still need to be resolved. When asked if clients leave their programs with specific aftercare plans that help spell out behavioral and emotional guidelines to help families transition after treatment, 51 of the 65 programs said yes (78%), while 14 said no (22%). Respondents indicated that on average, slightly more than half of their clients return to home environments (57%), while the remaining 43% of the clients go on to some form of residential care after OBH treatment. When asked to describe the types of aftercare services utilized by those clients that return home, outpatient individual counseling and family-based counseling were the two most frequent types of aftercare services utilized. For example, 45 of the 65 programs (70%) indicated that a “large percentage” of their clients utilized individual counseling and family-based counseling. For residential aftercare, respondents indicated that a wide variety of types of care are utilized, including therapeutic boarding schools, boarding schools, transition homes, and residential drug and alcohol treatment. The most frequent type of residential aftercare noted was a therapeutic

boarding school, with 40% of programs indicating that a large percentage of the clients enrolled in these schools after treatment.

**PROGRAM EVALUATION OF TREATMENT OUTCOME**

The final survey questions asked programs to describe if and to what degree they evaluate treatment outcome for clients and families. More than 95% of respondents said their program had in the past or currently conducted some form of treatment outcome evaluation ( $N = 63$ ), while 4% ( $N = 2$ ) indicated they did not. Table 13 shows that the most frequent type of evaluation conducted by programs was the use of internally developed instrumentation conducted by program staff (55%). A smaller percentage of programs noted that they have conducted evaluations in the past through an external organization, but that outcome is not tracked regularly (12%). Only six OBH programs indicated they regularly track outcomes using an external organization. Two programs said they did not monitor outcomes at all.

**Table 13. Types of program evaluation conducted by respondents presented by frequency and percentage of respondents.**

<b>Evaluation of Treatment Outcome</b>		
<b>Types of Evaluation</b>	<b>Frequency</b>	<b>Percentage</b>
Use of own instrumentation done internally by program staff	36	55.4%
External organization has been used in the past to assess outcomes, but not regularly	8	12.3%
Use of standardized instruments done internally by program staff	7	10.8%
Contract with external agency to regularly monitor outcomes	6	9.2%
A few studies in the past, but do not regularly track outcomes	6	9.2%
Do not evaluate outcomes	2	3.1%

Programs were also asked if they regularly contacted families after completion of treatment, and if so, how often (e.g., periodically) and at what time in relation to discharge. Almost 90% of all programs said they did contact families ( $N = 58$ ) and that the average time after completion of treatment was 3.5 months.

## CONCLUSIONS FROM FOLLOW-UP SURVEY OF OBH PROGRAMS

Several conclusions are made from the follow-up survey of OBH programs, especially given that this allows an opportunity to view the OBH industry from a longitudinal perspective to assess change in key areas of programming.

### **Conclusion 1. The number of OBH programs operating appears somewhat stable, yet models and definitions are still evolving.**

In 2000, there were 86 programs who completed the survey. Of these, the majority ( $N = 40$ ) were what were referred to at the time as residential expedition programs. In this current survey, the definition was refined to more accurately reflect those programs that *primarily* use wilderness expeditions in their therapeutic approach, which reduced the number of residential expedition programs to 17. Using the definition that focuses on wilderness expedition as the primary therapeutic milieu, the same programs that were included in the 2000 study were again contacted, in addition to newly formed programs, which established a new sample of 65 OBH programs that reflected this more refined definition. The programs who indicated that they reflected the OBH definition used in this study more closely resemble the expedition-based program models developed in 2000. Thus, it appears as though the OBH industry has grown, from an identified and surveyed 43 programs in 2000 to approximately 65 programs today. Also of note is the development of new models, for example the outpatient and integrated expedition models. Definitions will continue to challenge researchers and others interested in OBH programs because there is no set standard and little research has been conducted to examine such models in terms of which type of program may be more effective for specific clientele. Interestingly, these 65 programs treated slightly more adolescents in 2006 (10,753), than in the 86 programs identified in 2000 (9,148). Also, no distinctions were made between the private placement and adjudicated programs, with the vast majority of all programs being private placement, and very few being operated by state agencies.

### **Conclusion 2. Despite indicating that OBH programs are in essence treatment programs, very few clinicians are employed full time by programs.**

This study reports an average of three employed clinicians per program ( $Mdn = 3.0$ ), with by far the highest majority of staff being represented by field staff, which average 19 per program. (e.g. the ratio of field staff to clinical staff using the median number of staff employed was 6:1). This is an important finding, in that the typical field staff person is young, college educated, new to the field, and have worked at programs for an average of approximately nine-months (Marchand and Russell, in progress). The nature and degree to which clinical oversight and engagement is practiced at each program could be an important area for future research.

**Conclusion 3. The number and relative percentages of OBH programs that are licensed has not changed, though remains the majority of programs operating.**

This study concluded that 84% of all programs were licensed by state agencies, and that slightly more than one-half were accredited by national accreditation agencies. Nearly identical percentages were concluded in 2000; 84% of all programs were licensed and 57% were accredited. This study asked for the first time if licensing standards were in place in the state in which they operated. An equal number of programs that indicated they were licensed also said the state in which they operate in had state standards. Further analysis showed these figures coincided for respondents. This means that if there were standards in place, programs were licensed, if there were no standards in the state in which the programs operated, licensure was not in place. Further analysis should identify which states currently do not have standards in place and what the potential is for the development of standards. When asked if current licensed staff are employed at their program, surprisingly only 88% of programs said yes, while 8 programs either did not have a licensed counselor or therapist currently on staff, or did not employ one full time.

**Conclusion 4. The average cost of treatment has increased, and the percentage of costs covered by third-party payment has declined, thus placing the burden of treatment costs on parent consumers.**

In 2000, it was reported that the average daily cost of treatment was \$161 (\$242 when adjusted to 2007 dollars), whereas this study reports an average daily cost of \$278. Interestingly, it appears as though treatment lengths are getting longer, even though different definitions have been used. If an average treatment length of 45 days (as reported in Russell, 2003) is applied to the inflation adjusted 2000 daily cost of treatment, the total treatment cost would be \$10,890. If the 2006 daily treatment cost is applied to an average treatment length of 45 days, the total cost of treatment would be \$12,510. Obviously, longer programs are significantly more expensive. The point being that incremental changes in daily cost translate into significant costs to consumers, which in this case are primarily parents with little external support. That is evidenced by the fact a slightly small percentage of programs indicated they offer third party payment (70% in 2000 and 67% in 2006), and almost 80% of all programs estimate that less than 30% of parent's treatment costs are covered by third party payers.

**Conclusion 5. Family involvement has evolved to include a wider variety of opportunities, yet actual family contact time is still relatively low in terms of contact hours.**

In 2000, programs were asked to estimate the total number of hours that families were involved in programming. An average of 33 hours of contact time per client was calculated. This study reports an average time of 27 hours of contact time per client served. This reduction in contact time could be attributable to the refined definition and the types of programs that responded to the survey. Regardless, family involvement continues to be an important issue given its reported benefits in the treatment of adolescents. Family sessions, parent sessions, and psycho-educational family groups were the most frequently cited involvement practices. It is clear that most programs are utilizing these types of involvement, which were reported as more important than resources like on-line support services or parent “seminars.” Over three-quarters of all programs said that these three intervention types were significant aspects of the treatment process.

**Conclusion 6. Client demographics remain very consistent, with OBH programs continuing to primarily serve Caucasian, 15-17 year olds, from middle- to upper-class socio-economic backgrounds.**

The typical OBH client remains a Caucasian male, age 14-17, from middle- to upper-middle class backgrounds. It is unclear whether this is due to socio-economic status, access to referral, and other resources(including the internet) or a cultural willingness by some parents to try something different than traditional medical-based treatment models. This questions remains unanswered and continues to be an area that requires research attention. Of note in this study is the number of programs that indicated that they are serving families from a wider variety of socio-economic levels. For example, a small percentage of programs said they served families with household incomes less than \$60k; in 2007, 25% indicated a large percentage of their clients came from \$31-\$40 k households, in addition to another 25% who said their largest percentage was from households with incomes from \$21-\$30k. This is an interesting trend, perhaps suggesting the development of OBH programs with additional funding sources and support, including foundational and/or direct linkages to county and state agencies charged with the rehabilitation of adolescents who are utilizing these programs to a greater degree. Given the high cost of treatment, the ways in which parents access and pay for treatment is also an area suitable for future research.

**Conclusion 7. Clinical issues have shifted from behavioral and emotional disorders (ADHD, Oppositional Defiant Disorder, and Depression) to substance use issues as the primary clinical issue.**

In 2000, respondents were asked to mark the issues which they routinely see and are capable of treating. Those responses were ranked in order of frequency of programs responding. This study chose to ask the respondents the three clinical issues that they see most frequently from clients. Though dissimilar in wording and intent, subtle trends emerged from the analysis of responses. This study showed that substance use issues were in the top three primary clinical issues listed by each program, and was the most frequently mentioned clinical issue. In 2000, it was not in the top ten of most frequently seen and treated issues, noted less frequently than Oppositional Defiant Disorder (ODD), Attention Deficit Hyperactivity Disorder (ADHD), or behavioral issues like dropping out of school or getting into trouble with the law. Though the metrics were indeed different, this issue has become the most frequently noted clinical issue *that necessitates clients entering treatment*. This study did not seek to identify the most formative mental health issue driving families to seek treatment; it is simply being reported that when clients arrive at the doorstep of OBH programs with families seeking treatment, substance use issues, followed by ADHD and Conduct disorders were most frequently cited. This is another important issue for further research, specifically examining how OBH programs are tailoring wilderness therapy to specifically address substance use issues (see Russell, 2006 for methods and results from a study of substance use issues in OBH treatment).

**Conclusion 8. Almost all programs conduct program evaluation, but a very small percentage routinely conduct evaluation of outcomes through the use of an external evaluators.**

This finding is surprising given the evidence-based world that mental health programs are being asked to operate in due to the current political and/or litigious climate. Most programs continue to operate in an evaluative model driven by self-evaluation. Most programs are using program-developed outcome assessments, with very few using standardized and accepted instrumentation. Given that OBH is largely a demand-driven treatment alternative, it is critical to note that for the past seven years, approximately 10,000 clients and their families continue to turn to OBH programs, despite the fact that they are largely untested, only a few programs conduct external evaluations and even fewer conduct external evaluations on a regular basis. This is especially critical, because the majority of families have tried other treatment alternatives (more than 70%), and it is well known and empirically proven that treatment choices are limited, with a significant percentage of adolescents going undiagnosed and untreated due to a lack of services (see beginning of this report under section *Why OBH?*). In many ways, these data show that families are willing to try anything to help their children who have been shown to have significant behavioral and psychological issues precipitating their need for treatment in OBH (see Russell, 2003, 2005, and 2006 for baseline admission presenting issues of OBH clients).

## **FUTURE DIRECTIONS**

OBH treatment is an emerging treatment type with an expanding research interest. Hopefully, future research will facilitate increased understanding of this promising, but misunderstood, and relatively untested, treatment approach. Suggested areas for further research into OBH treatment include more in-depth examination of treatment process elements, which may help explain variance in outcomes previously reported. Future research could also better identify for whom the intervention is most appropriate, using comparison studies between OBH treatment and outpatient, residential and in-home treatment. Because transition and aftercare is such an important factor, future research could also more clearly assess the role aftercare plays in maintaining therapeutic progress. In addition, cost effectiveness studies could be employed to compare the relative cost of OBH treatment to other approaches. It may also be useful to examine how OBH treatment helps families address relationship and communication issues that have been disrupted by previous problem behaviors and the process itself, which typically lasts up to 50 days and includes removing the adolescent from the family. How do programs specifically incorporate the family into treatment? What are the most effective strategies for accomplishing this? What role does nature and physical activity play, given the exploding use of technology by young people? What about the increasing sedentary nature of adolescents, evidenced by a widely publicized and well-researched epidemic of obesity in young people? What about the connections between physical activity, physical health, and mental health? What happens when this is combined with a separation from the culture, which seems to drive many of these dysfunctional perspectives? These questions and others that will inevitably be asked of OBH treatment will guide OBHRC research endeavors into the future.

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## **APPENDIX A. PROGRAM PARTICIPANTS IN OBHRC STUDIES**

### **Defining the Scope of the OBH Industry (1999-2001)**

**Anasazi Foundation**, Mesa, Arizona  
**Aspen Achievement Academy**, Loa, Utah  
**Catherine Freer Wilderness Therapy**, Albany, Oregon  
**Redcliff Ascent**, Springville, Utah  
**SUWS**, Shoshone, Idaho

### **Risk Incident Monitoring (1999-2005)**

**Anasazi Foundation**, Mesa, Arizona  
**Aspen Achievement Academy**, Loa, Utah  
**Catherine Freer Wilderness Therapy**, Albany, Oregon  
**Redcliff Ascent**, Springville, Utah  
**SUWS**, Shoshone, Idaho  
**Mountain Homes Youth Ranch**, Vernal, Utah  
**OMNI Youth Services**, Buffalo Grove, Illinois  
**Trailhead Wilderness School**, Georgetown, Colorado  
**Wendigo Lake Expeditions**, Ontario, Canada

### **Outcome Study Youth Outcome Questionnaire (2000-2002)**

**Anasazi Foundation**, Mesa, Arizona  
**Aspen Achievement Academy**, Loa, Utah  
**Catherine Freer Wilderness Therapy**, Albany, Oregon  
**OMNI Youth Services**, Buffalo Grove, Illinois  
**Redcliff Ascent**, Springville, Utah  
**SUWS**, Shoshone, Idaho  
**Summit Achievement Academy**, Fryeburg, ME  
**Trailhead Wilderness School**, Georgetown, Colorado  
**Wendigo Lake Expeditions**, Ontario, Canada

### **Depression and Substance Use Study (2003-Present)**

**Anasazi Foundation**, Mesa, Arizona  
**Aspen Achievement Academy**, Loa, Utah  
**Catherine Freer Wilderness Therapy**, Albany, Oregon  
**Redcliff Ascent**, Springville, Utah  
**Mountain Homes Youth Ranch**, Vernal, Utah  
**OMNI Youth Services**, Buffalo Grove, Illinois  
**Trailhead Wilderness School**, Georgetown, Colorado  
**Wendigo Lake Expeditions**, Ontario, Canada

### **Qualitative Follow-up Study to Assess the Role of Aftercare (2003-2004)**

**Anasazi Foundation**, Mesa, Arizona  
**Aspen Achievement Academy**, Loa, Utah  
**Catherine Freer Wilderness Therapy**, Albany, Oregon  
**OMNI Youth Services**, Buffalo Grove, Illinois  
**Redcliff Ascent**, Springville, Utah  
**SUWS**, Shoshone, Idaho  
**Summit Achievement Academy**, Fryeburg, ME  
**Trailhead Wilderness School**, Georgetown, Colorado  
**Wendigo Lake Expeditions**, Ontario, Canada

## **APPENDIX B. COMPLETE LIST OF PUBLICATIONS ASSOCIATED WITH THE OUTDOOR BEHAVIORAL HEALTHCARE RESEARCH COOPERATIVE FROM 1999-2005**

(Available at <http://www.obhrc.org>)

Russell, K., & Hendee, J. (2000b). *Outdoor behavioral healthcare: Definitions, common practice, expected outcomes and a national survey of programs* (Technical Report No. 26). Moscow, ID: UI-Wilderness Research Center-Outdoor Behavioral Healthcare Research Cooperative.

Russell, K. C., & Farnum, J. (2004). A concurrent model of the wilderness therapy process. *Journal of Adventure Education and Outdoor Learning*, 4(1), 39-55.

Russell, K.C. & Sibthorp, J. (2004). Hierarchical linear modeling of treatment outcomes in outdoor behavioral healthcare. *Journal of Experiential Education*, 27, 2, 176-191.

- Russell, K. C. (1999). *Theoretical basis, process, and reported outcomes of wilderness therapy as an intervention and treatment for problem behavior in adolescents*. Unpublished doctoral dissertation, University of Idaho, Moscow, ID.
- Russell, K. C. (2000). Exploring how the wilderness therapy process relates to outcomes. *Journal of Experiential Education*, 23(3), 170-176.
- Russell, K. C. (2001). What is wilderness therapy? *Journal of Experiential Education*, 24(2), 70-79.
- Russell, K. C. (2002). Does outdoor behavioral healthcare treatment work? *Therapeutic Wilderness Camping, Summer/Fall*, 5-10.
- Russell, K. C., & Phillips-Miller, D. (2002). Perspectives on the wilderness therapy process and its relation to outcome. *Child and Youth Care Forum*, 31, 6, 415-437.
- Russell, K. C. (2003a). An assessment of outcomes in outdoor behavioral healthcare treatment. *Child and Youth Care Forum*, 32(6), 355-381.
- Russell, K. C. (2003). A nation-wide survey of outdoor behavioral healthcare programs for adolescents with problem behaviors. *Journal of Experiential Education*, 25(3), 322-331.
- Russell, K. C. (2004). Research directions in wilderness therapy. In S. Bandoroff & S. Newes (Eds.), *Coming of age: The evolving field of adventure therapy* (pp. 137-155). Boulder, CO: Association of Experiential Education.
- Russell, K. C. (2004). *Two-years later: A qualitative assessment of youth well-being and the role of aftercare in outdoor behavioral healthcare treatment*. (Technical Report # No. 1). Durham, NH: University of New Hampshire-School of Health and Human Services.
- Russell, K. C. (2005). Two years later: A qualitative assessment of youth well-being and the role of aftercare in outdoor behavioral healthcare treatment. *Child & Youth Care Forum*, 34(3), 209-239.
- Russell, K. C. (2006). Brat camps, boot camps, or....? Exploring wilderness therapy program theory. *Journal of Adventure Education and Outdoor Learning*, 6, 1, 51-67.
- Russell, K.C. (2006). Evaluating the effects of the Wendigo Lake Expedition program for young offenders. *Journal of Juvenile Justice and Youth Violence*, 4, 2, 185-203.
- Russell, K. C. & Harper, N. (2006). Incident monitoring in outdoor behavioral healthcare programs: A four-year summary of restraint, runaway, injury, and illness rates. *Journal of Therapeutic Schools and Programs*, 1, 1, 70-90.
- White, D.D. , Caulkins, M., & Russell, K.C. (2006). The role of physical exercise in wilderness therapy for troubled adolescent women. *Journal of Experiential Education*, 29(1), 18-37.

Attarian, A., Ewert, A. Hollenhorst, S., Russell, K. & Voigt, A. (2006). Evolving adventure pursuits on public lands: Emerging challenges for management and public policy. *Journal of Parks Recreation Administration*, 24, 2, 125-140. [authors acknowledge equal contribution].

## APPENDIX C PROGRAMS IDENTIFIED AND CONTACTED FOR PARTICIPATION IN SURVEY

Program	Website
ACTION-Calgary	
Abraxas	<a href="http://www.cornellcompanies.com/facilities3.cfm?fac_id=28">www.cornellcompanies.com/facilities3.cfm?fac_id=28</a>
Academy at Swift River	<a href="http://www.swiftriver.com">www.swiftriver.com</a>
Adirondack Leadership Expeditions	<a href="http://www.adirondackleadership.com">www.adirondackleadership.com</a>
Adventure Discovery Inc.	<a href="http://www.co.coconino.az.us/resourcirectory/agency.asp?A_ID=93">www.co.coconino.az.us/resourcirectory/agency.asp?A_ID=93</a>
Affinity Foundation	<a href="http://www.affinityfoundation.com">www.affinityfoundation.com</a>
Alldredge Academy	<a href="http://www.alldredgeacademy.org">www.alldredgeacademy.org</a>
ANASAZI Foundation	<a href="http://www.anasazi.org">www.anasazi.org</a>
Appalachian Wilderness Camp	
ASCENT Outdoor Therapeutic Program	<a href="http://www.ascent4teens.com">www.ascent4teens.com</a>
Aspen Achievement Academy	<a href="http://www.aspenacademy.com">www.aspenacademy.com</a>
Baxley Wilderness Institute	
Big Cypress Wilderness Institute	
Blackwater Outdoor Experiences	<a href="http://www.blackwateroutdoor-ahc.com">www.blackwateroutdoor-ahc.com</a>
Blue Mountain Wilderness Program, Inc.	<a href="http://www.blue-mountain.org">www.blue-mountain.org</a>
Bonneville Canyon	<a href="http://www.bonnevillecanyon.com">www.bonnevillecanyon.com</a>
Breckenridge Outdoor Center	<a href="http://www.boec.org/program_wildProg.cfm">www.boec.org/program_wildProg.cfm</a>
Camp Timberwolf	<a href="http://www.camptimberwolf.com">www.camptimberwolf.com</a>
Camp Woodson	<a href="http://www.ncdjjdp.org/facilities/woodson.html">www.ncdjjdp.org/facilities/woodson.html</a>
CanAdventure Education	<a href="http://www.canadventure.ca">www.canadventure.ca</a>
Castle Rock Institute	<a href="http://www.castle-rock.org">www.castle-rock.org</a>
Catherine Freer Wilderness Therapy Expeditions	<a href="http://www.cfreer.com">www.cfreer.com</a>
Charlotte Outdoor Adventure Center, Inc.	<a href="http://www.coacinc.com">www.coacinc.com</a>
Cirque Lodge	<a href="http://www.cirquelodge.com">www.cirquelodge.com</a>
Crossroads Wilderness Institute	<a href="http://www.cwi-fl.org">www.cwi-fl.org</a>
Dancing Moon Ranch & Expeditions	<a href="http://www.dancingmoonranch.com">www.dancingmoonranch.com</a>
Deer Hill Expeditions	<a href="http://www.deerhillexpeditions.com">www.deerhillexpeditions.com</a>
Diakon (formerly TresslerCare) Wilderness Challenge Program	
Distant Drums Beginnings	<a href="http://www.distant-drums.com">www.distant-drums.com</a>
Dragonfly Adventures, Inc	<a href="http://www.dragonflyadventures.com">www.dragonflyadventures.com</a>
Eagle's Nest Foundation - Hante Adventures	<a href="http://www.enf.org">www.enf.org</a>
Eckerd Youth Alternatives	<a href="http://www.eckerdyouthalternatives.org">www.eckerdyouthalternatives.org</a>
Elk Creek Ranch	<a href="http://www.elkcreekranch.com">www.elkcreekranch.com</a>

Elk River Wilderness Challenge	<a href="http://www.thepinnacleschools.com">www.thepinnacleschools.com</a>
Encompass Adventure Programs	
Enviros Base Camp	
Epworth Children's Home	<a href="http://www.epworthchildrenshome.org">www.epworthchildrenshome.org</a>
Escambia River Outward Bound	<a href="http://www.escambia.k12.fl.us/institutes/alted/djj_programs.htm#outward">www.escambia.k12.fl.us/institutes/alted/djj_programs.htm#outward</a>
Explorations Inc.	<a href="http://www.explorationsinc.com">www.explorationsinc.com</a>
Family Solutions Network, Inc. - Turning Winds	<a href="http://www.turningwinds.com">www.turningwinds.com</a>
Galena Ridge Wilderness Program	<a href="http://www.galenaridge.com">www.galenaridge.com</a>
Georgia Sheriff's Youth Homes Pineland Campus	
Ghost River Rediscovery	<a href="http://www.ghostriverrediscovery.com">www.ghostriverrediscovery.com</a>
Glenwood Wilderness	<a href="http://www.glenwood.org">www.glenwood.org</a>
Griffith Centers for Children	<a href="http://www.emilygriffith.com">www.emilygriffith.com</a>
Hidden Lake Academy	<a href="http://www.hiddenlakeacademy.com">www.hiddenlakeacademy.com</a>
Homme Youth and Family Programs	<a href="http://www.homme-Iss.org">www.homme-Iss.org</a>
Hope Center for Youth	<a href="http://www.hopeforyouth.org">www.hopeforyouth.org</a>
Inner Harbour	<a href="http://www.innerharbour.org">www.innerharbour.org</a>
In-Sight Quest for Teens	<a href="http://www.cushing-nature.com/In-Sight-Fram.html">www.cushing-nature.com/In-Sight-Fram.html</a>
John de la Howe School	<a href="http://www.delahowe.k12.sc.us">www.delahowe.k12.sc.us</a>
Kiatou wilderness therapy / therapeutic centre	<a href="http://www.kiatou.ca">www.kiatou.ca</a>
Lone Star expeditions	<a href="http://www.lonestarexpeditions.com">www.lonestarexpeditions.com</a>
Loveland Farms	<a href="http://www.lovelandfarms.com">www.lovelandfarms.com</a>
Meet the Wilderness	<a href="http://www.meetthewilderness.org">www.meetthewilderness.org</a>
Middle Georgia Wilderness Institute	
Midland School	<a href="http://www.midland-school.org">www.midland-school.org</a>
Monarch Center For Family Healing	<a href="http://www.monarchfamilyhealing.com">www.monarchfamilyhealing.com</a>
Montcalm Outdoor Challenge Program	<a href="http://www.montcalmschool.org">www.montcalmschool.org</a>
Mount Bachelor Academy	<a href="http://www.mtba.com">www.mtba.com</a>
Mount Carmel Youth Ranch	<a href="http://www.mtcarmelyouthranch.com">www.mtcarmelyouthranch.com</a>
Mountain Homes Youth Ranch/Ashley Valley Wilderness	<a href="http://www.mhyr.com">www.mhyr.com</a>
New Dominion School of Virginia	<a href="http://www.threesprings.com/newdominionmaryland">www.threesprings.com/newdominionmaryland</a>
New Frontiers	<a href="http://www.newfrontiers.org">www.newfrontiers.org</a>
New Horizons for Young Women	<a href="http://www.daughtersatrisk.com">www.daughtersatrisk.com</a>
North Carolina Outward Bound	<a href="http://www.ncobs.org">www.ncobs.org</a>
Northern Waters	<a href="http://www.northwaters.com">www.northwaters.com</a>
Northwest Passage II	<a href="http://www.nwpass.com">www.nwpass.com</a>
Odyssey Wilderness Programs	<a href="http://www.odysseynw.com">www.odysseynw.com</a>

OMNI Youth Services	<a href="http://www.omniyouth.org">www.omniyouth.org</a>
Outback Therapeutic Expeditions	<a href="http://www.outbacktreatment.com">www.outbacktreatment.com</a>
Outdoor Therapeutic Program, Cleveland, GA (Department of Human Resources)	
Outervention	<a href="http://www.outervention.org">www.outervention.org</a>
Outpost Wilderness Adventure	<a href="http://www.owa.com">www.owa.com</a>
Outward Bound Discovery	<a href="http://www.outwardbound.org/discovery.html">www.outwardbound.org/discovery.html</a>
Outward Bound West	<a href="http://www.cobs.org">www.cobs.org</a>
Outward Bound Wilderness	<a href="http://www.outwardboundwilderness.org">www.outwardboundwilderness.org</a>
Passages to Recovery	<a href="http://www.passagestorecovery.com">www.passagestorecovery.com</a>
Peninsula Village; Peninsula Village	<a href="http://www.peninsulavillage.org">www.peninsulavillage.org</a>
Phoenix Outdoor, LLC	<a href="http://www.phoenixoutdoor.com">www.phoenixoutdoor.com</a>
Pinehurst School	<a href="http://www.pinehurst.on.ca">www.pinehurst.on.ca</a>
Pressley Ridge	<a href="http://www.pressleyridge.org">www.pressleyridge.org</a>
Project Adventure	<a href="http://www.pa.org">www.pa.org</a>
Ranch Ehrlo Society	<a href="http://www.ehrlo.com">www.ehrlo.com</a>
Red Top Meadows	<a href="http://www.redtopmeadows.org/twp.html">www.redtopmeadows.org/twp.html</a>
Redcliff Ascent	
Redcliff Ascent (Adjudicated)	<a href="http://www.redcliffascent.com">www.redcliffascent.com</a>
Remi Vista Ranch School	
Ridge Creek, Inc.	<a href="http://www.ridgecreek.org">www.ridgecreek.org</a>
Rite of Passage	<a href="http://www.riteofpassage.com">www.riteofpassage.com</a>
S.O.A.R., Inc	
Sage Walk	<a href="http://www.sagewalk.com">www.sagewalk.com</a>
Saint Francis Academy - Lake Placid	<a href="http://www.st-francis.org">www.st-francis.org</a>
Saint John's School of Alberta	<a href="http://www.sjsa.ab.ca">www.sjsa.ab.ca</a>
Salesmanship Club - Family Works Center	<a href="http://www.salesmanshipclub.org">www.salesmanshipclub.org</a>
Santa Fe Mountain Center	<a href="http://www.santafemc.org">www.santafemc.org</a>
Santiam Crossing	<a href="http://www.santiamcrossing.com">www.santiamcrossing.com</a>
Second Nature Wilderness Programs	<a href="http://www.snwp.com">www.snwp.com</a>
Shepherd's Hill Farm	<a href="http://www.shepherdshillfarm.org">www.shepherdshillfarm.org</a>
Soltreks, Inc.	<a href="http://www.soltreks.com">www.soltreks.com</a>
Stone Mountain School at Camp Elliot	<a href="http://www.stonemountainschool.com">www.stonemountainschool.com</a>
Straight Arrow Apex	<a href="http://www.straightarrowapex.com">www.straightarrowapex.com</a>
Summit Achievement	<a href="http://www.summitachievement.com">www.summitachievement.com</a>
Sunhawk Academy	<a href="http://www.sunhawk.org">www.sunhawk.org</a>
Sunrise Girls Academy	<a href="http://www.sunriseacademyrtc.com">www.sunriseacademyrtc.com</a>

SUWS Adolescent and Youth Program	<a href="http://www.suws.com">www.suws.com</a>
Talisman Programs	<a href="http://www.talismancamps.com">www.talismancamps.com</a>
The KidsQuest Wagon Train	<a href="http://www.vq.com/kidsquest">www.vq.com/kidsquest</a>
Thistledeew	<a href="http://www.thistledeewcamp.com">www.thistledeewcamp.com</a>
Three Rivers Montana	<a href="http://www.threeriversmontana.org">www.threeriversmontana.org</a>
Three Springs Inc.	<a href="http://www.threesprings.com">www.threesprings.com</a>
Trapper Creek Job Corps	<a href="http://dallasregion.jobcorps.gov/centers/app_trapper.asp">dallasregion.jobcorps.gov/centers/app_trapper.asp</a>
Trinity Teen Solutions, Inc	<a href="http://www.trinityteensolutions.com">www.trinityteensolutions.com</a>
True North Wilderness Program	<a href="http://www.truenorthvt.com">www.truenorthvt.com</a>
Wendigo Lake Expeditions Inc. (Project D.A.R.E.)	<a href="http://www.wendigolake.com">www.wendigolake.com</a>
West Florida Wilderness Institute	
Wilderness Adventure at Eagle Landing	<a href="http://www.eagle-landing.com">www.eagle-landing.com</a>
Wilderness Inquiry	<a href="http://www.wildernessinquiry.org">www.wildernessinquiry.org</a>
Wilderness Opportunities	<a href="http://www.wildernessopp.com">www.wildernessopp.com</a>
Wilderness Quest	<a href="http://www.wildernessquest.com">www.wildernessquest.com</a>
Wilderness School (a Program of the State of Connecticut Department of Children and Families)	<a href="http://www.state.ct.us/dcf/Wilderness_School/index.htm">www.state.ct.us/dcf/Wilderness_School/index.htm</a>
Wilderness Treatment Center	<a href="http://www.wildernesstreatmentcenter.com">www.wildernesstreatmentcenter.com</a>
Wilderness Youth Project	<a href="http://www.wyp.org">www.wyp.org</a>
Woodside Trails	<a href="http://www.woodsideside.com">www.woodsideside.com</a>