

Efficacy of Wilderness Therapy for Young Adults: A First Look

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There has been considerable growth in outcomes research with adolescent clients in wilderness therapy. However, data on young adults are largely absent from the literature. This pilot study investigated the effectiveness of wilderness therapy for 297 young adult participants. The 3-year study found clinically and statistically significant change from intake to discharge on the Outcome Questionnaire-45.2. It also found significant change on measures of life effectiveness, motivation for therapy, therapeutic alliance, and dysfunctional attitudes. This article discusses when change occurs in the wilderness, factors that influence outcomes, differences between genders, and post-discharge outcomes for young adults.

KEYWORDS *wilderness therapy, young adults, efficacy, outcomes, inpatient treatment*

Wilderness therapy is a relatively new and increasingly popular treatment approach for emotionally and behaviorally troubled adolescents. As wilderness therapy evolved, programs began expanding to reach the young adult population as well. This approach provides an alternative to rehabilitation programs for those with substance abuse issues or psychiatric hospitalization for those with mood or other interpersonal difficulties. Wilderness therapy as a treatment approach for young adults has roots in outdoor behavioral healthcare (OBH), when “tent programs” were used for psychiatric inpatients in the early 1900s to relieve overcrowding (Davis-Berman & Berman, 1993; Gibson, 1979). These programs present an opportunity for young adults

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to leave the comfort of home or college and enter an environment that facilitates growth and personal development in a variety of areas.

Several perceived advantages are noted when comparing the wilderness treatment intervention to others, and “a substantial body of psychological research points to the mental health benefits of nature experiences” (Davis, 1998, p. 70). Time away in a new environment (the wilderness) allows the client to rethink her previous behaviors, as well as separating her from her negative peer group, drugs, or other opportunities for dangerous or self-destructive behaviors. The wilderness is often viewed as a magical place, a place of simplicity free from the distractions and stimulation of civilization, where the person may begin to work through the various issues that she has been struggling with or avoiding in her life. This natural and restorative environment is viewed as essential to shifting an adult’s world-view and perceptions of self (Louv, 2005).

The group milieu, within which the adult lives and grows, is essential to promoting symptomatic and behavior change. Irvin Yalom’s seminal writing on therapeutic factors in group therapy articulates the value of interpersonal learning, cohesiveness, and mirroring of the family experience (Yalom & Leszcz, 2005). These manifest in the day-to-day wilderness group process and provide many rich opportunities for growth and learning (Hoag, O’Keefe, & Carlin, 2006). The group becomes a social microcosm, wherein the group members often interact with each other in the same ways that they do with other relationships in their lives (Yalom & Leszcz, 2005). Yalom relates, “clients will, over time, automatically and inevitably begin to display their maladaptive interpersonal behavior in the therapy group” (p. 32). He further relates that clients are often blind to their patterns of relating to others and the group interaction provides an opportunity to see themselves more clearly. The wilderness group is rich with such opportunities for self-reflection that contribute to meaningful interactions to help each client further understand how the world experiences them. Furthermore, group therapy and a milieu that cultivates interaction and promotes social support shifts these young people from an egocentric world view to a more community oriented way of seeing things (Louv, 2005). The group emulates a family as the individuals rely on the collective unit to meet emotional and physical needs. The other members of the group are essential to confronting issues, identifying denial, and supporting emotional growth (Gass, Gillis, & Russell, 2012).

Over the last fifteen years, wilderness therapy has improved in clinical sophistication and begun to build a base of evidence. Wilderness therapy as an intervention has been more clearly defined (Russell, 2001, 2003, 2007), and evidence of efficacy has been demonstrated with a number of studies among adolescents (Behrens & Satterfield, 2007; Behrens, Santa, & Gass, 2010; Hoag, Savicki, & Burlingame, 2001; Lewis, 2007; Magle-Haberek,

Tucker, & Gass, 2012; Russell, 2003, 2005, 2007; Tucker, Zelov, & Young, 2011; Young & Gass, 2010). Unfortunately, outcome data on young adults in wilderness therapy are largely nonexistent in the current literature. Most studies have examined group process oriented variables as opposed to outcome. A recent study examined the application of attachment theory to working with adults in wilderness therapy (Bettmann & Jaspersen, 2008), while others primarily examined the impact of nonclinical wilderness adventures with adults (Goldenberg & Pronsolino, 2008; Jostad, Paisley, & Gookin, 2012; Paxton & McAvoy, 2000) or as an adjunct to inpatient treatment for survivors of combat-related PTSD (Hyer, Boyd, Scurfield, Smith, & Burke, 1996). Similar studies explored the impact of wilderness exposure on sense of community (Breunig et al., 2008) or resilience (Ewert & Yoshino, 2008).

Having served young adult clients for over eight years, questions of outcomes were pertinent and important to us. We began our examination of outcomes for young adults in wilderness therapy through this pilot study using standardized and validated questionnaires. Our research questions were: Do young adults make clinically and statistically significant change in wilderness therapy? When does change begin or accelerate for young adults in wilderness therapy? What are contributing factors to positive outcome for young adults in wilderness therapy? Do clients maintain change after leaving wilderness?

METHOD

Young adult clients at a wilderness therapy program in southwest Utah were invited to participate in this pilot study from March 2008 to January 2011. Each client worked with one of seven primary therapists employed by the wilderness therapy program. Clients had to complete at least five weeks of the program in order to remain eligible to participate. Participants were asked to complete measures at intake, week 3, week 5, discharge, and 6 months after discharge. Due to problems with attrition, we conducted another follow-up with a random sample of 30 clients one year after the study ended. This sample of clients discharged between one and three years prior to the follow-up; therefore, it is referred to as the "12-month plus follow-up." While in the program, clients completed questionnaires on paper. For the first follow-up at six months post discharge, questionnaires were sent electronically or mailed to the parent's home. Clients printed the questionnaire, and returned them by mail. For the 12-month plus follow-up, questionnaires were sent as a link in an email to the client's parent. Parents then forwarded the link to the client, from which the client could complete and submit online using Outcome Tools. Outcome Tools is an online research system that instantly

scores and stores data and allows participants to complete questionnaires online (Outcome Tools, 2012).

Measures

Measures completed within the program were the Outcome Questionnaire-45.2 (OQ-45.2), Life Effectiveness Questionnaire (LEQ), Client Motivation for Therapy Scale (CMOTS), Helping Alliance Questionnaire (HAQ-II), and Dysfunctional Attitudes Scale (DAS).

The OQ-45.2 is a 45-item, self-report outcome tracking instrument designed for repeated measurement of client progress over the course of therapy and afterward. The OQ-45.2 measures functioning in three domains: subjective discomfort, interpersonal relationships, and social role performance. It is a brief screening and outcome tool that attempts to measure the subjective experience of a person and the way he or she functions (Lambert et al., 2004).

The LEQ measure is a 24-item, self-report instrument often used in measuring the effects of adventure and other experiential education intervention programs. The LEQ focuses on measuring the extent that a person's actions, behavior, and feelings are effective life skills (Neill, Marsh, & Richards, 2003).

The DAS is a 40-item instrument that is designed to identify and measure cognitive distortions, particularly distortions that may relate to or cause depression. The items contained on the DAS are based on Beck's cognitive therapy model and present seven major value systems: approval, love, achievement, perfectionism, entitlement, omnipotence, and autonomy (Weissman & Beck, 1978).

The HAQ-II is a brief self-report instrument that measures the alliance between patient and therapist. The HAQ-II contains 19 items that tap various aspects of the therapeutic alliance such as security, preoccupation, fearfulness, and dismissiveness (Luborsky et al., 1996).

The CMOTS is designed to assess a client's motivation for therapy. It examines three forms of motivation including intrinsic motivation, extrinsic motivation, and amotivation for therapy (Pelletier, Tuson, & Haddad, 1997).

RESULTS

Between March 2008 and January 2011, 486 adult clients entered the wilderness program and completed at least 5 weeks of the program. Of those, 297 participated in this pilot study, providing a 61% participation rate. Of the 297 young adults, 83 were females (27%) and 224 were male (73%). Ages of clients ranged from 18 to 34 years old, with the average age being 20.2. Upon admission 71% of participants reported having prior treatment. Eighty-eight

percent of participants identified as Caucasian. The average length of stay in the program was 9.8 weeks.

Do Young Adults Make Significant Change in Wilderness Therapy?

We conducted paired t tests to examine change from intake to discharge, and found statistically significant change with large effect sizes on each measure (see Table 1). The OQ-45.2 defines scores below 63 to be in the community or normal range of functioning, and a change of 14 points or more to be reliable change (Lambert et al., 2004). The reliable change index (Jacobson & Truax, 1991) identifies whether the magnitude of change is clinically significant, as statistical significance does not always equate to clinical significance. The 28 point change seen in this sample is both clinically and statistically significant. Scores on the DAS, LEQ, CMOTS, and HAQ-II also saw statistically significant improvement from intake to discharge with large effect sizes (see Table 1).

As more than half of participants had incomplete in-program datasets, we conducted an independent t test on OQ-45.2 scores at intake comparing those who completed all four OQ-45.2's during the program and those who completed three or less. At intake, there was no statistical difference between these groups ($t = 8.988$, $df = 282$, $p = .324$), suggesting that the sample of students with complete datasets was representative of all participants in the study.

When Does Change Occur?

Clients with complete datasets changed an average of 8.7 points from intake to week 3, 18.4 points from intake to week 5, and a total of 30.1 points from intake to discharge (Table 2). Changes are similar for those who had incomplete datasets. Clients improved gradually and consistently throughout the course of the program, though it took five weeks for the 14 or more

TABLE 1 Change in Scores on All Measures from Intake to Discharge-Paired t Test

Measure	M_{intake} (SD)	$M_{\text{discharge}}$ (SD)	t score	d	df	95%CI	
						Lower	Upper
OQ-45.2	67.32 (21.6)	38.83 (20.2)	16.87**	1.36	147	25.15	31.82
DAS	123.04 (42.4)	88.98 (38.0)	11.20**	0.85	146	-6.05	-3.39
LEQ	5.69 (1.1)	6.70 (0.9)	-11.10**	-1.02	134	-1.91	-0.83
CMOTS	51.07 (7.5)	55.79 (7.1)	-7.02**	-0.65	145	-6.05	-3.39
HAQ-II	4.13 (0.7)	4.69 (0.3)	-8.54**	-1.04	133	-0.70	-0.44

Note. On the DAS and the OQ-45.2, decreasing scores indicate improvement. On the CMOTS, HAQ-II, and LEQ increasing scores indicate improvement.

** $p < .001$.

TABLE 2 Mean Scores at Intake, Week 3, Week 5, and Discharge for Complete and Incomplete OQ-45.2 Datasets

	Intake		Week 3		Week 5		Discharge	
	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)
Incomplete OQ datasets	169	65.1 (22.3)	126	54.9 (23.0)	100	47.6 (24.5)	40	42.2 (24.0)
Complete OQ datasets	115	67.8 (22.0)	115	59.1 (23.2)	115	49.4 (22.4)	115	37.7 (18.9)

points needed for reliable change on the OQ-45.2. In examining the changes within the program, it should be noted that there is more time between week 5 and discharge than between the other data points during the program. The average length of stay was almost 10 weeks; therefore, many clients had five or more weeks between week 5 and discharge.

What Factors Influence Outcome?

With a Pearson's r , we assessed the relationship between outcome on the OQ-45.2 and other factors measured (life effectiveness, therapeutic alliance, motivation for therapy, and dysfunctional attitudes) at intake and discharge. The DAS and the LEQ were correlated to OQ-45.2 scores, while the HAQ-II and CMOTS did not show significant correlations. The DAS had a strong correlation with the OQ-45.2 at intake, $r(284) = .624$, $p = .000$, and a moderate correlation at discharge, $r(154) = .476$, $p = .000$. The LEQ was strongly correlated with the OQ-45.2 at both intake, $r(278) = -.626$, $p = .000$, and discharge, $r(144) = -.578$, $p = .000$.

We also computed independent t tests to examine differences in outcome on the OQ-45.2 among several demographic factors (gender, parent's marital status, and previous treatment). There were statistically significant differences with moderate effect sizes at intake for each variable. By discharge, however, client scores showed no statistically significant differences between the groups (Table 3).

Do Clients Maintain Change After Leaving Wilderness?

We asked clients to complete the OQ-45.2 six months after discharge. Response rates were low ($N = 7$) with a mean score of 40.1 ($SD = 31.7$). In order to augment the 6-month follow-up, we conducted a "12-month plus follow-up" with a random sample of 30 clients in February 2012. Out of the 30 clients randomly selected for the 12-month plus follow-up, 10 completed questionnaires. The OQ-45.2 mean score was 44.9 ($SD = 16.1$). Due to low sample sizes at the follow-up data points, statistical testing was difficult. While understanding that follow-up responses may not be representative of

TABLE 3 Comparing OQ-45.2 Scores by Gender, Parent's Marital Status, and Previous Treatment—Independent *t* Test

Variable	$M_{\text{difference}}$	95% confidence interval		<i>t</i>	<i>df</i>	<i>d</i>
		Lower	Upper			
Gender (females – males)						
Intake	9.09	3.35	14.84	3.11*	282	.41
D/C	-5.48	-12.42	1.47	-1.56	153	—
Parents married (married – not married)						
Intake	7.47	2.03	12.91	2.70*	280	.35
D/C	5.26	-1.71	12.23	1.49	149	—
Previous tx (prior tx – no prior tx)						
Intake	9.54	3.97	15.11	3.37*	278	.45
D/C	-0.28	-7.54	6.97	-0.08	149	—

**p* < .01.

the population and are to be interpreted cautiously, they can shed light on what happens after wilderness for some young adult clients.

DISCUSSION

This is one of the first studies to explore outcome and to evaluate what is effective in wilderness therapy for young adults. This sample of young adults reported experiencing real and practical change from intake to discharge. In addition to clinically and statistically significant change on the OQ-45.2, participants' sense of life effectiveness, dysfunctional attitudes, alliance with their therapist, and motivation for therapy improved in statistically significant ways over the course of treatment.

Low response rates for post-discharge data were a significant limitation in this study as well as in others (Behrens & Satterfield, 2007; Russell, 2003; Tucker et al., 2011). In the field of OBH we have struggled to collect representative data on our clients after they leave our programs. Looking at the different methods and response rates for our follow-ups, we see some hope for future post-discharge data. Using a mail-based system for the first follow-up, we saw a response rate of 3%, though clients had discharged from the program only six months previously. Using an electronic system, in which clients could complete and submit the questionnaire online, the response rate increased to 33%, even though clients had discharged from the wilderness program between one and three years previously. This was only with a small random sample, but it indicates that the use of technology will advance follow-up capabilities.

Further examination reveals that gender, parents' marital status, and previous treatment made a statistical difference at intake, but not at discharge (Table 3). The gender difference is perhaps most notable. Experienced wilderness clinicians and evaluators have anecdotally suggested that in order for a female to be enrolled into a wilderness program they have to be experiencing more symptoms than males. This suggests an inferred protectiveness of parents or guardians of females, as well as a sense that females need to be more dysfunctional before their support system believes that such an intervention is necessary. In this study adult female clients assessed themselves to be functioning worse at intake and slightly better at discharge than their male counterparts. However, the difference at discharge was not statistically significant. Females scored 9.1 points higher than males at intake, $t(282) = 3.11$, $p = .002$, and 5.5 points lower at discharge, $t(153) = -1.56$, $p = .122$. In comparison, studies conducted when testing the OQ-45.2 found no apparent differences between males and females in both clinical and nonclinical settings (Lambert et al., 2004). However, similar gender trends have been found in studies using the Youth Outcome Questionnaire (Burlingame et al., 1997) with adolescents in wilderness therapy and private residential treatment centers (RTCs) (Russell, 2003; Magle-Haberek et al., 2012; Tucker et al., 2011) and with the Ohio Youth Problem Severity Scale (Ogles, Melendez, Davis, & Lunnen, 2001) with children and adolescents referred to adventure therapy (Tucker, Javorski, Tracy, & Beale, 2013). Russell found that adolescent females had higher intake scores than males on the self-assessment and the parent assessment; females also self-reported higher scores at discharge. In Magle-Haberek et al.'s study, gender impacted change on the Youth Outcome Questionnaire with females experiencing greater change in both OBH and RTC programs. This gender trend of females in wilderness therapy entering at a higher level of dysfunction and showing greater change merits more study and could have important implications for clinicians and wilderness programs.

Whereas there was statistically significant change from intake to discharge on the LEQ, DAS, CMOTS, and HAQ-II, they were not all correlated to OQ-45.2 scores. The Pearson's r results showed that a client's sense of life effectiveness and their level of dysfunctional attitudes were correlated to improvements on the OQ-45.2. This could suggest that a person's ability to adapt and the beliefs they hold about themselves have more influence on outcome and overall well-being than motivation for therapy and alliance with the therapist. These findings relate to discussions of common factors that affect outcome in psychotherapy (Clarkin & Levy, 2004), and represent a start in examining what factors work with whom in the wilderness setting. Our findings regarding the impact of adaptability and self-beliefs on outcome parallel previous examinations (Clarkin & Levy), while our results regarding therapeutic alliance contrast to previous evaluations (Krupnick et al., 1996), which found that alliance impacts outcome. Clearly, these therapeutic and common factors require further study as they apply to wilderness therapy.

While this study represents a foray into examining outcome with adults in wilderness programs, it has several limitations that require attention in future research. One of the consistent obstacles in doing research in private settings is high attrition during the program and, especially, post-program (Russell, 2007; Tucker et al., 2011). Sometimes the challenge rests in the difficulty with managing caseloads and research, and sometimes the challenge rests with the client's lack of desire to participate in research. As we reflect on this work, we see the need to decrease attrition rates and gain more consistent results as we continue the iterative process of understanding the change agents found in wilderness therapy. Additionally improved long term follow-up is essential to evaluate how young adults respond to this type of treatment and whether gains made in therapy generalize post-treatment.

CONCLUSIONS

We believe that a considerable strength of this study is the response rate of the participants during the program. Given this strength, results demonstrate that wilderness therapy has a positive effect on young adult's mood, interpersonal relationships, social skills, and behavioral difficulties. At discharge, young adult clients were in the "normal" range of functioning as measured by the OQ-45.2 and made statistically and clinically significant changes throughout the program. In addition, the client's relationship with their therapist, healthy life skills, and desire to change increased, while their distorted cognitions diminished over the course of therapy. It appears that a young adult's level of life effectiveness and dysfunctional attitudes have a strong connection to outcomes in wilderness therapy.

Follow-up data showed clients remained in the community range of functioning on the OQ-45.2. However, this post-discharge data are to be interpreted cautiously due to its small sample size and low response rate. Post-discharge follow-up was a major weakness to this study. Moving forward, targeted efforts to improve follow-up and attrition are crucial. This pilot study was an exploratory effort that became the basis of a more robust and improved outcome study (Hoag, Massey, & Roberts, 2012). While it represents a step in evaluating outcome with young adults in wilderness therapy, it is essential that future research include a representative sample and improved response rates.

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