Wilderness Therapy is Effective

Research Support for a Wilderness-based Model of Intervention for Youth

"The transformation our child made was impressive. He entered the program an insecure and immature boy, we picked up a mature, confident, thoughtful young man."

— Parent of a SUWS of the Carolinas' student

CReATE
Center for Research, Assessment, and Treatment Efficacy

Graduates of wilderness therapy programs report significantly greater use of adaptive emotion regulation strategies than at admission.

Outdoor Behavioral Healthcare (OBH), also referred to as wilderness or adventure therapy, has grown exponentially in the last several decades. This is largely due to its intensive approach, offering parents and families an alternative for treatment-resistant adolescents and young adults. Due to the proliferation of programs, there is a growing need to examine and document the effectiveness of these services. In 1999 the Outdoor Behavioral Healthcare Research Cooperative (OBHRC)* conducted several ground-breaking investigations. Their research was encouraging--adolescents demonstrated significant improvements following OBH. This promising early work highlighted the need for continued systematic study of the effectiveness of wilderness therapy programs.

Toward this end, the Center for Research, Assessment, and Treatment Efficacy (CReATE) and the Arkansas Interdisciplinary Sciences Laboratory, located at the University of Arkansas completed a rigorous study to investigate therapeutic outcomes for adolescents participating in wilderness therapy interventions.

Using state-of-the art assessment, sampling, and retention techniques, the research team interviewed one hundred-ninety two adolescents, ages 12-17, enrolled in three different wilderness therapy programs, located across the United States. SUWS of the Carolinas, located in Old Fort, NC, was actively involved in data collection and a significant portion of the study sample was drawn from their program.

Study participants were assessed at five points: admission; one week after they started treatment; graduation from the wilderness therapy program; three months after graduation; and 12 months after graduation.

The assessment included multiple validated self-report instruments, standardized interviews with trained staff, and additional measures to assess variables known to influence treatment gains (e.g., emotional reactivity, behavioral inhibition, distress tolerance, etc). Data collection began in March, 2006 and all assessments were concluded in 2009.

* OBHRC is a division of the Outdoor Behavioral Healthcare Industry Council (OBHIC), formed in 1996 to assure the highest standards of treatment in wilderness and adventure therapy programs.

Demographic Information:

Gender:

68% Males

32% Females

Average Age:
15.75 years old
Age Range: 12-18

Ethnicity:
86% Caucasian
2% African American
3.1% Hispanic
1.0 % Asian
4.4% Other

History of Prior Treatment:

0 providers (10%)
1 provider (27%)
2 providers (27%)
3 providers (14%)
4 or more (22%)

"From beginning to end, it is a terrific program. SUWS of the Carolinas changed all our lives for the better."

— Parent of a SUWS of the Carolinas' student

SUWS of the Carolinas

Old Fort, North Carolina

SUWS of the Carolinas is a therapeutic wilderness program with a focus on short-term, high impact clinical intervention and assessment. Located in the Blue Ridge Mountains in Western North Carolina, the program uses the outdoors as an alternative to conventional treatment environments, while engaging students using traditional therapeutic methods. The wilderness setting removes modern distractions, simplifies choices and teaches valuable lessons. As a result, students begin to accept responsibility for personal decisions, address individual and family issues, and become invested in their own personal growth. SUWS of the Carolinas specializes in adolescent and pre-adolescent males and females ages 10-17 who are struggling with a range of academic, behavioral, emotional, mental health and substance abuse issues. There are four distinctive programs for students depending upon age, clinical issues and gender. In addition to extensive therapeutic services, SUWS of the Carolinas also features an academic component, transition planning and a strong family program.

SUWS CAROLINAS

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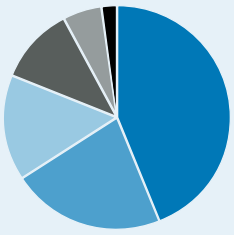
Psychotropic Medication Use:

Average Number of Medications = 1.18

Range of Medications = 0-5

Commonly Listed Medications:
Zoloft, Concerta, Wellbutrin, Adderall, Seroquel, Prozac, Strattera, Celaxa, Ritalin, Abilify



Breakdown of Medications:

- 40% taking none
- 20% taking one
- 14% taking two
- 10% taking three
- 5% taking four
- 2% taking five

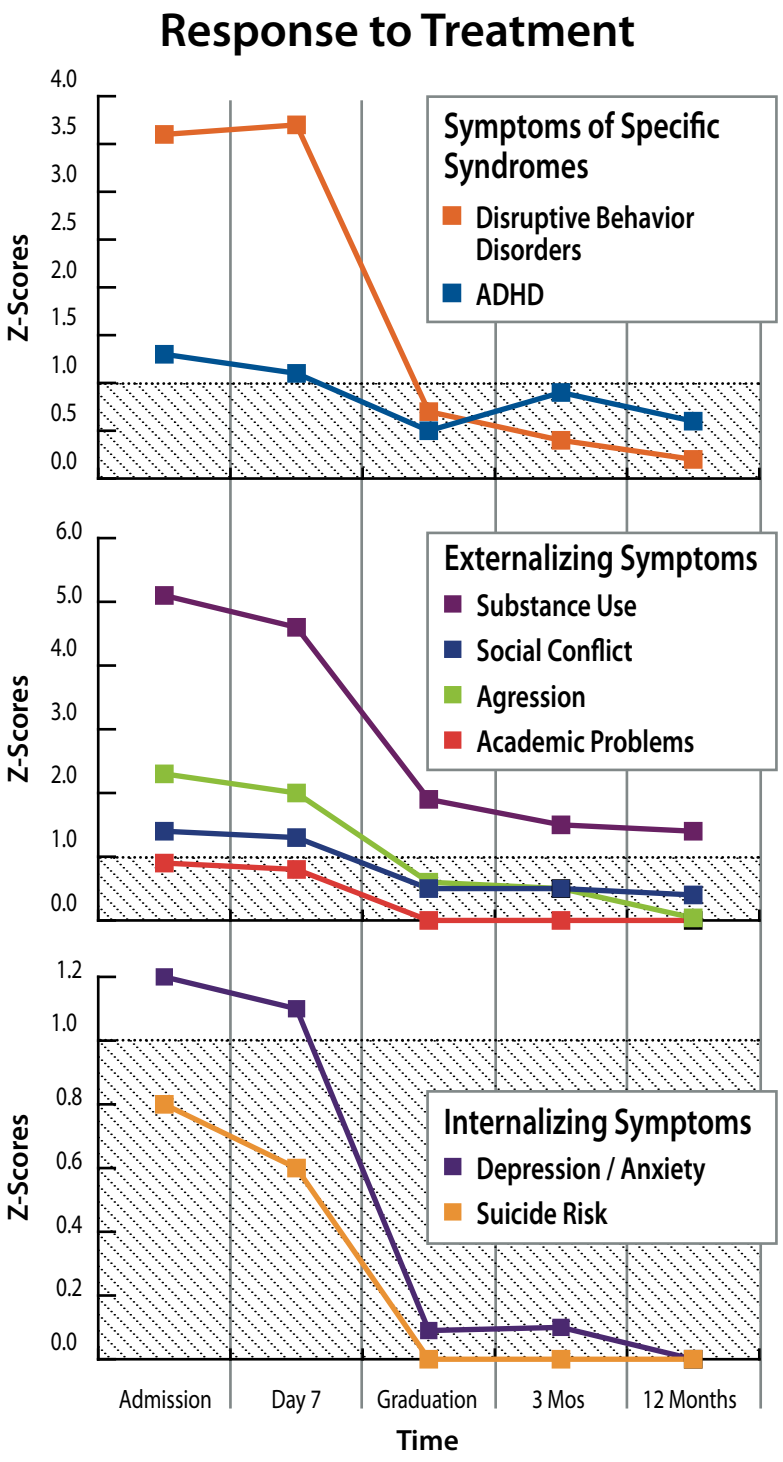
Treatment Outcomes for Youth Participating in the Study:

The data from the current study replicates and extends previous findings. **Adolescent participants in wilderness therapy programs experienced significant reductions in psychopathology during treatment, and maintained these therapeutic gains for a full year.** More specifically, study participants demonstrated improvement in anxiety and depression, substance abuse and dependency, disruptive behavior, impulsivity, suicidality, violence, and sleep disruption, as well as school performance. As the graphs depict, substance abuse and dependence, as well as disruptive behavior disorders are the most extreme and problematic symptoms reported by the adolescents in the current study.

Exploring the impact of treatment following graduation from OBH programs is critical. It allows us to better understand whether subsequent treatment (Post-OBH) is responsible for the continued improvement in symptoms, shown by study participants. Approximately 30% of participants returned home to live following completion of OBH treatment. These youth utilized various therapeutic options, ranging from no treatment to community-based outpatient services.

As mentioned above, results found that participants in the study reported less substance abuse and dependence and symptoms of disruptive behavior disorders. **Importantly, these therapeutic gains were maintained *independent from any additional therapeutic services provided to the youth*** (for the 12 months following graduation).

As measured by the Youth Treatment Outcome Package (TOP-Y): Kraus, D. R., Seligman, D. A., & Jordan, J. R. (2005). Validation of a behavioral health treatment outcome and assessment tool designed for naturalistic settings: The Treatment Outcome Package. *Journal of Clinical Psychology*, 61, 285 – 314.



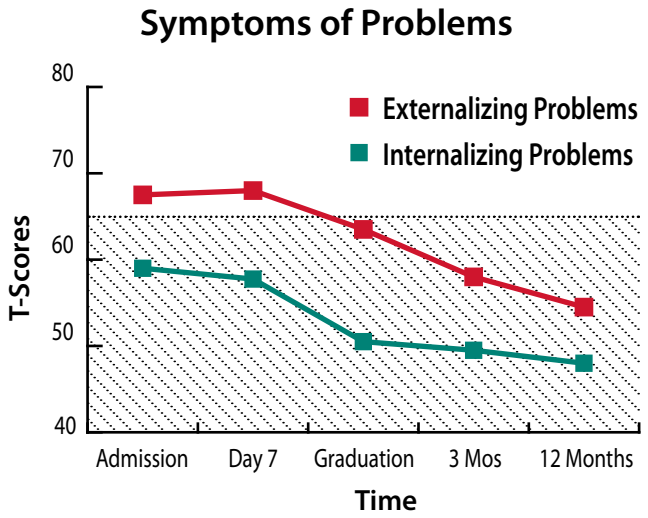
Z-scores are standard scores, used to describe the extent that a score deviates from the normal range. Standard scores allow comparison between different sources of data.

Z-scores > 1.0 indicate scores above the 84th percentile and Z-scores > 2.0 indicate scores above the 97th percentile.

☐ Z-scores < 1.0 indicate scores in the normal range.

Adolescent participants in wilderness therapy programs experienced significant reductions in psychopathology during treatment, and maintained these therapeutic gains for a full year.

Participants also demonstrated reductions in the use of defiance and oppositionality. More specifically, at admission, 62% of the adolescents endorsed symptoms of moderate to severe disruptive behavior problems, compared to only 11% at graduation. Similarly, 23% of adolescents reported moderate to severe anxiety or depression, compared to only 5% at discharge.

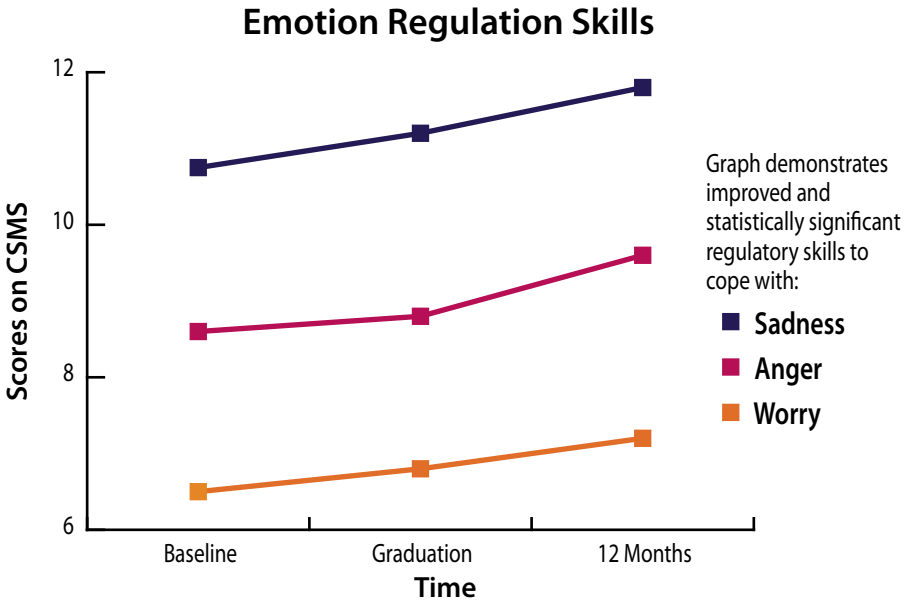


T-scores are standard scores, used to describe the extent that a score deviates from the normal range. Standard scores allow comparison between different sources of data.

T-scores > 65 indicate scores above the 93rd percentile and fall in the "at risk" range; T-scores > 70 indicate scores above the 97th percentile and fall in the "problem" range.

T-scores < 65 indicate scores in the normal range.

As meausured by the Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for ASEBA School-Age Forms & Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.



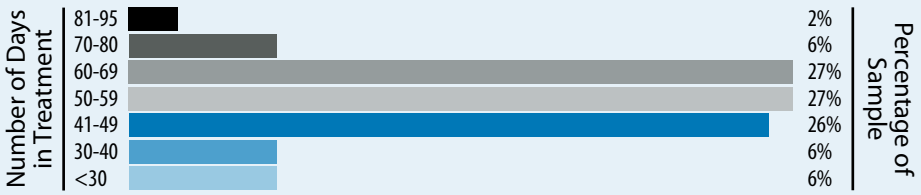
Adolescent graduates of wilderness therapy programs also evidenced significantly greater use of adaptive emotion regulation strategies and significantly less reliance on dysregulated coping strategies (i.e., avoidance, emotional suppression). These results suggest that wilderness therapy programs are teaching important emotion regulation skills, as well as providing a context for adolescents to rehearse newly acquired strategies to manage negative emotions such as worry, sadness, and anger.

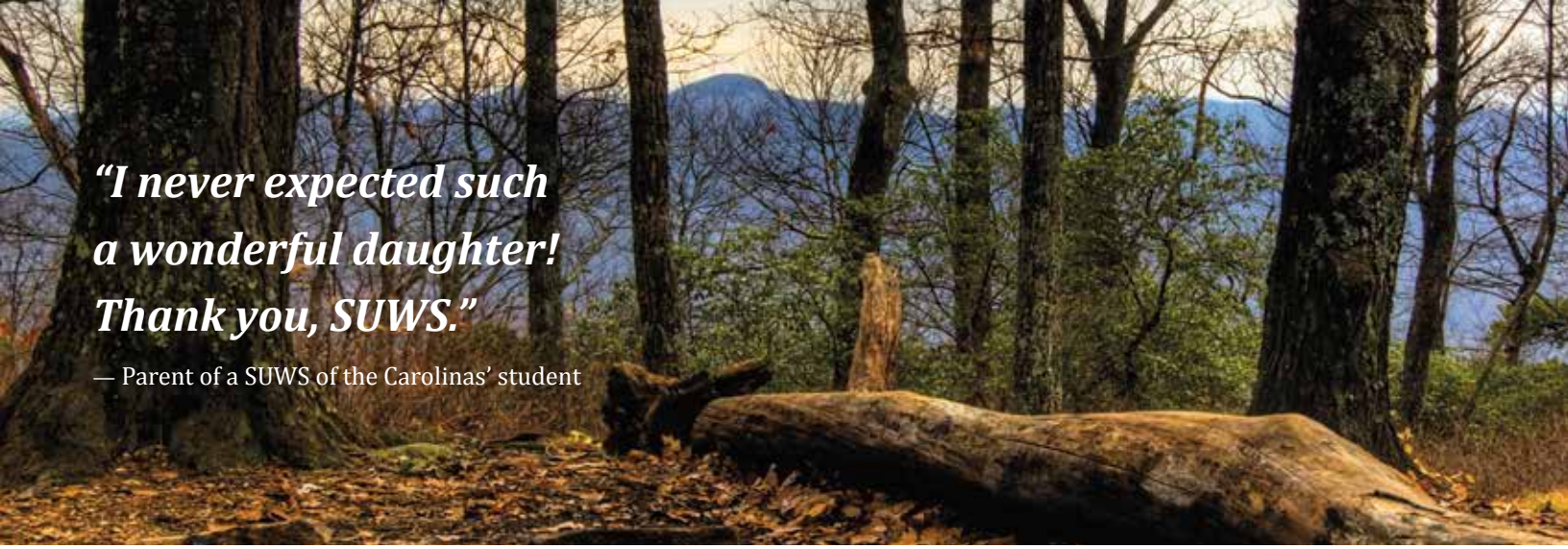
As measured by Zeman, J., Shipman, K., & Penza-Clyve, S. (2001). Development and initial validation of the Children's Sadness Management Scale. *Journal of Nonverbal Behavior*, 25, 187-205.

History of Prior Psychiatric Hospitalizations:

58% reported zero
19% reported one
9% reported two
1% reported three
2% reported four
10% did not report

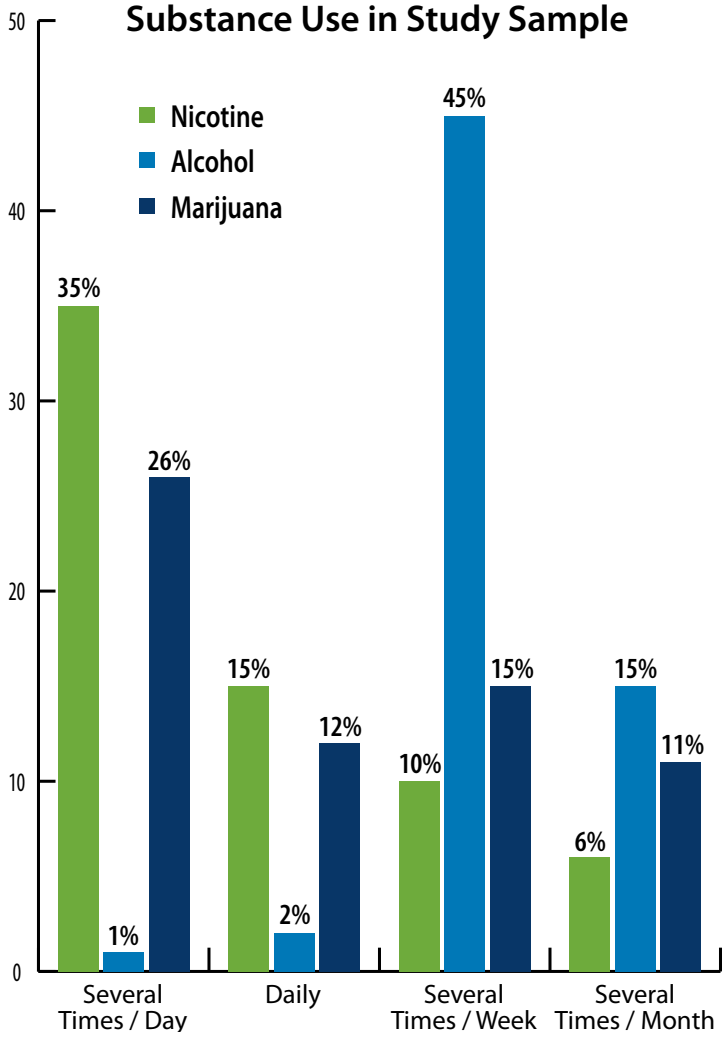
Duration of OBH Treatment:





"I never expected such a wonderful daughter! Thank you, SUWS."

— Parent of a SUWS of the Carolinas' student



Prevalence Rates:

Three Most Commonly Used Substances by Youth Participating in the Study

As discussed previously, participants reported *highly significant* symptoms of substance abuse and dependence. In fact, substance use disorders were the most prevalent of all psychiatric conditions for the adolescents in the current study.

Youth in the current study reported using significantly more nicotine, alcohol, and marijuana as compared to national data published in the Youth Risk Behavior Survey (YRBS, 2011) by the Centers for Disease Control and Prevention. More specifically, 9% of US high school students reported smoking cigarettes several times daily (versus 35% of current sample).

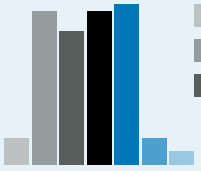
Additionally, 38% of US high school students reported consuming alcohol on at least one day in the past month (versus 63% of current sample). Lastly, 23% of US high school students reported smoking marijuana on at least one day in the past month (versus 64% of current sample).

Symptoms at Admission:

Z-scores above 1.0 are within the "problem" range.

Symptom	Z-Score	Symptom	Z-Score
Substance Use	5.1	Suicide Risk	1.2
Disruptive Behavior Disorders	3.6	Academic Problems	0.9
Aggression	2.3	Depression/Anxiety	0.8
Social Conflict	1.4	Sleep	0.25
ADHD	1.3		

School Grade of Participants:



12th = 4%
11th = 23%
10th = 20%
9th = 23%
8th = 24%
7th = 4%
6th = 2%

Evidence-based Therapeutic Interventions

Understanding and addressing the function of problem behavior is an important component of a variety of evidence-based practices, including cognitive behavior therapy. We can more effectively reduce challenging behavior when we understand the *function* of that behavior for the individual. Once the purpose of behavior is identified, the client can learn and practice a replacement behavior—one that is healthier and more productive. Function is particularly important for substance use disorders as the primary treatment goal is to change a specific behavior--the use of drugs or alcohol. Thus, understanding why an individual uses substances is critically important-- in identifying, acquiring, and rehearsing alternative, adaptive behaviors.

In addition to better understanding the positive impact of OBH interventions, the current study yields critical information associated with substance use disorders in a particularly vulnerable population of youth—those who have experienced traumatic events. Traumatic event exposure in youth is extremely high; available evidence suggests that approximately two-thirds of adolescents have been exposed to at least one traumatic event by the age of 16 years. The current study findings identified that the function of alcohol and marijuana use, in adolescents with symptoms of traumatic stress appears related to managing negative emotions and distress. Further, results found that among adolescents, exposed to a traumatic event AND simultaneously using marijuana, there was a significantly increased risk of aggressive behavior. Understanding these inter-relationships and the function of maladaptive behavior will allow clinicians, at the SUWS of the Carolinas wilderness therapy program and elsewhere, to intervene more effectively and address adolescents' individual therapeutic needs.

Select Citations

Lewis, S. F. (2013). Examining Changes in Substance Use and Conduct Problems among Treatment seeking Adolescents. *Child and Adolescent Mental Health, 18*, 33–38.

Bujarski, S., Feldner, M. T., **Lewis, S. F.**, Babson, K. A., Trainor, C. D., Leen-Feldner, E., Badour, C. L., & Bonn-Miller, M. O. (2012). Marijuana use among traumatic-event exposed adolescents: Posttraumatic stress symptom frequency predicts coping motivations for use. *Addictive Behaviors, 37*, 53-59.

Dixon, L. D., Leen-Feldner, E. W., Ham, L. S., Feldner, M. T., & **Lewis, S. F.** (2009). Alcohol Use Motives among Traumatic Event-Exposed, Treatment-Seeking Adolescents: Associations with Posttraumatic Stress. *Addictive Behaviors, 34*, 1065-1068.

McDaniel, C.E., Bujarski, S. J., **Lewis, S.F.**, Leen-Feldner, E.W., Feldner, M.T. (in submission). Frequency of Past-Month Marijuana Use is Associated with Violent and Aggressive Behavior among Traumatic Event-Exposed Adolescents. *Journal of Interpersonal Violence*.

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