Effective Treatment for Substance Abuse & Dependence

Research Support for a Wilderness-based Form of Intervention for Young Adults
Substance use disorders (SUDs) have risen dramatically over the past decades and represent the greatest public health problem to date. SUDs are also referred to as alcohol or drug abuse and/or dependency. These disorders cost more than $400 billion annually, which represents a greater economic impact than diabetes, obesity, and smoking combined. For young adults (individuals between the ages of 19-29 years-old typically), there are heightened risks associated with substance experimentation. For example, the prevalence rates of SUDs in young adults are 2-3 times higher than rates seen in adolescence or middle adulthood. Young adults also have very high rates of co-occurring mental health problems.

"My world was falling apart and getting smaller and smaller. The time I spent at FCRC enlightened me and restored me mentally, emotionally, physically, and spiritually. I’m finally living my life the way I always was supposed to."

— FCRC Alumni

Demographic Information:

<table>
<thead>
<tr>
<th>Gender:</th>
<th>Average Age: 24 years old</th>
<th>Marital Status: 99% Single 1% Divorced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males: 75%</td>
<td>Age Range: 19-33</td>
<td></td>
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<tr>
<td>Females: 25%</td>
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</tbody>
</table>

Ethnicity:

- 71% Caucasian
- 6% Hispanic
- 2% American Indian
- 1% African American
- 1% Other
- 19% Unknown
Substance Use Disorders cost the US more than $400 billion annually, which represents a greater economic impact than diabetes, obesity, and smoking combined.

Given the significant impact and the extensive public health burden of SUDs, it is critical to identify effective treatment models. Available evidence suggests that sustained recovery from addiction is difficult to achieve. In adolescent samples, the average rate of relapse, following treatment is 68% (at 12 months). In adult samples, rates of relapse are similarly elevated. For example, at 3 months post-treatment, 50% of individuals with alcohol use disorder relapse to a first drink, whereas by 12 months this rate increases to approximately 75%.

Outdoor Behavioral Healthcare (OBH), also known as wilderness therapy, has been found to be an effective treatment modality for adolescents, particularly for SUDs (Lewis, 2013). However, there is very little research examining the effectiveness of OBH in vulnerable populations, particularly young adults with SUDs. Thus, Four Circles Recovery Center (FCRC), in cooperation with the Center for Research, Assessment, and Treatment Efficacy (CReATE) and the Intervention Sciences Laboratory (located at the University of Arkansas) collaborated on the most comprehensive treatment outcome study to date.

This prospective, multi-site clinical study sampled young adults from three treatment sites—two wilderness-based treatment programs and one “treatment-as-usual” inpatient drug and alcohol rehabilitation program. Research assessed participants at five time-points over the duration of the study:

- admission
- mid-point of treatment
- graduation
- 3 months after graduation
- 12 months after graduation

The assessment included multiple validated self-report instruments, standardized interviews with trained staff, and extensive evaluation of the frequency and severity of substance use.

Using state-of-the art assessment, sampling, and retention techniques, the research team enrolled 468 treatment-seeking adults into the study; study participants were drawn from one of the three treatment sites for intervention related to SUDs. Investigators retained 70% of participants through the first phase of the study, which concluded at graduation from treatment. For phase two, which included conducting follow-up assessments at 3- and 12-months post-treatment, 70% of FCRC clients (as well as overall study participants) completed their follow-up evaluations. All assessments were completed by January 2013.

Employment Status:
4% Employed full time
17% Employed part time
22% Full time student
25% Unemployed, not looking
32% Unemployed, looking

Religious Affiliation:

- 21% Catholic
- 12% Protestant
- 20% Other Christian
- 5% Jewish
- 2% Buddhist
- 12% Other
- 28% None

Convicted of a Crime:
0 convictions = 50%
1 conviction = 17%
2 convictions = 15%
3 convictions = 7%
4 convictions = 5%
more than 5 = 1%

12% of sample report being on probation when admitted to FCRC.
FOUR CIRCLES RECOVERY CENTER
Horse Shoe, North Carolina

Four Circles Recovery Center (FCRC) is a state-of-the-art, innovative wilderness-based treatment program for young adult males and females, ages 18-28, struggling with addiction, substance abuse, and co-occurring mental health issues. Located in the Blue Ridge Mountains of Western North Carolina, ten minutes outside of Asheville, licensed and experienced staff provide the most clinically sophisticated wilderness-based substance abuse treatment program in the country.

Blending the best of all methods of clinical treatment, Four Circles harnesses the power of the wilderness to change lives, while integrating time-tested traditional approaches, such as individual and group counseling, the 12-Step philosophy, and a range of cutting-edge clinical services. This winning combination of treatment services has proven time and again to yield lasting change and a strong foundation for sustained recovery.

Personalized Treatment Plans
FCRC helps young adults achieve and sustain recovery through personalized treatment plans that incorporate the following elements including, but not limited to:

- Comprehensive Clinical Work
- Traditional 12-Step Philosophy
- Integrated Wilderness Expeditions
- Individualized Flexible Length of Stay
- Intensive Individual and Group Therapy
- Fully Licensed and Mult-Credentialled Clinical Treatment Team
- Master and Doctoral-Level Therapists
- Relapse Prevention and Aftercare Planning
- Life Skills Training
- Adventure Program Includes: Canoe Expeditions, Guided Rock Climbing, Fly Fishing, Fly Tying, White Water Rafting

“Our son came to Four Circles in a state of depression and dependency that was beyond our abilities. He left Four Circles the vibrant young person we had not seen for some years. It is not an overstatement to say that our son came back to life.” — FCRC Alumni Parent
Gender Specific Programming
Four Circles offers gender-specific programs to give clients an emotionally safe environment to focus on their issues openly and honestly.

Through the wilderness component of the Four Circles program, men have a unique opportunity to express their emotions and challenge themselves physically and mentally. Over time, male clients learn to ask for help and rely on one another instead of attempting to endure every struggle alone. Young men begin to build self-confidence through experiential learning and self-exploration, thus creating a strong foundation for their transition into adulthood.

Four Circles also offers the only substance abuse-specific wilderness treatment program for young adult women in the country. The women-only track places an added emphasis on self-esteem, body image, healthy relationships, and the development of positive social behaviors. Women's groups also address eating disorders, depression, self-care, and trauma. All-female support groups provide a compassionate, non-confrontational, and non-judgmental environment for women to share their stories, fears, struggles, and life lessons with other women who can sympathize and relate. This serves as an ideal environment for young women to challenge their beliefs and behaviors in order to grow into the women they want to be.

Family Involvement
Substance abuse impacts the entire family, and FCRC believes that including the family and significant others in the recovery process of clients is a critical component to the success of their recovery. Family members will have the opportunity to be a part of their loved one's journey to recovery by participating in the following activities and experiences:

- Two-Day Experiential Multi-Family Educational Workshop
- Weekly Telephonic Family Support Group
- Weekly Updates and Family Systems Work
- Family Workbook
- Family Phone Calls by Therapist
- Reading List for Families

FCRC's focus is on helping the family heal, improving communication, and supporting the recovery efforts of the identified client. By including the family, treatment provides a stronger foundation upon which to build sustained recovery.

Relapse Prevention
Four Circles Recovery Center offers a specialized 21-day Relapse Prevention Track for individuals who have relapsed after completing treatment at any primary alcohol or drug treatment facility within the past 12 months. This 21-day program is based on research-backed approaches, including the Gorski-Cenaps® model, which has proven highly effective in helping individuals break the relapse cycle. FCRC therapists have received extensive training using the Gorski-Cenaps® model, and are using it to help clients identify and manage high-risk situations that lead to relapse in the critical first months of recovery.

Transition Planning
Four Circles is dedicated to comprehensive discharge planning to increase program efficacy and sustain recovery. All clients receive a full range of discharge services, including a Relapse Prevention Plan. Career, vocational, and psychological testing are also available to assist in aftercare planning and transitions.

Four Circles offers transitional living for clients completing any primary treatment program in the country.

Admissions
Four Circles Recovery Center offers flexible enrollment, and our Admissions counselors are available 24 hours a day, seven days a week.

877.893.2221 • www.fourcirclesrecovery.com
Prevalence Rates Upon Admission:
Primary Drugs Used by Clients Participating in the Study

When individuals were admitted to treatment at FCRC, they reported that alcohol and marijuana were the most frequently used substances in the month prior to their admission. Participants reported an average of approximately 12 days of drinking and 11 days of marijuana use in the past 30 days. Notably, at 3 months after treatment, the average number of days of drinking was under 2 and 1 day (on average) of using marijuana in the preceding month. At 12 months after treatment, the average number of days of drinking was under 4 and under 5 (on average) of using marijuana. Following the use of alcohol and marijuana, the most frequently abused substances were the recreational use of Benzodiazepines and Opiates.

![Substance Use in Study Sample](image)

At admission, 55% of the sample reported the current use of nicotine.
Treatment Outcomes:

As predicted, the data from the current study reveal significant symptom remission, across multiple life domains (as measured by the Treatment Outcome Package, Kraus et al., 2005). Study participants presented with extensive psychopathology at admission into treatment at FCRC. More specifically, the majority of the sample reported significant substance dependency (> the 99.9th percentile), elevated levels of social conflict, and impairment in overall quality of life, as well as symptoms of depression, anxiety, panic disorder, suicidality, and sleep disruption. Across all domains, subjects demonstrated significant improvements from admission to graduation, and graduation to 12-months post-treatment. While scores on the scale of substance use remain elevated at graduation and following, subjects report marked improvements in symptoms of SUDs. Over 93% of participants reported significant reductions in substance use problems from baseline to treatment graduation and during the follow-up assessment period: 87% of participants reported significant reductions in symptoms from admission to 3 months post-treatment and 92% of participants reported significant reductions from admission to 12 months post-treatment.

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.
Marijuana is one of the most commonly used recreational drugs in the world and the most commonly used illicit drug in the United States. Currently, over 35% of marijuana users meet criteria for a SUD (i.e., marijuana abuse or dependence diagnosis). There also are numerous empirically-established negative consequences of marijuana use, including but not limited to physical illness, as well as social and occupational problems. In the current study, the most frequently abused substance was marijuana, with 25% of the sample reporting the consistent use of marijuana on more than 3 weeks out of the preceding month. The available evidence suggests that the earlier the age of onset, the greater risk of developing an addiction to marijuana. The current study found that the average age of onset for marijuana use was 14 years old (age range=11-21).

There is growing recognition, within the empirical literature that the reasons or motivations associated with drug experimentation is critical to better understanding the nature of substance use behavior; in particular, different motives have been found to be related to different patterns of use, varying risk for substance use problems and psychological vulnerability, as well as less optimal outcomes. Study participants indicated that the most common motivation for marijuana use was coping with negative affect (as measured by the Marijuana Motives Measure; Simons, Correia, & Carey, 2000). Thus, these data provide important insights into the function of substance use, allowing treatment to better address the critical nature of adaptive emotion regulatory strategies.

**Psychotropic Medication Use:**

- **Average Number of Medications = 1.5**
- **Range of Medications = 0-5**

**Commonly Listed Medications:**

- Prozac, Lexapro, Subuxone, Zoloft, Seroquel

**Breakdown of Psychiatric Medications:**

- 50% taking none
- 25% taking one
- 14% taking two
- 8% taking three
- 2% taking four
- 1% taking five
Distress tolerance, defined as the capacity to experience and withstand negative psychological states, is a robust predictor of mental health and wellness. It allows individuals to tolerate temporary psychological discomfort, while simultaneously allocating resources towards managing and adapting to stress. Thus, poor—or limited—distress tolerance has been found to be associated with higher rates of psychopathology and addiction, including relapse following treatment. Moreover, improving distress tolerance is a primary target of certain evidence-based therapies; dialectical behavior therapy is one such example.

As depicted in the graphs, participants in the current study, receiving treatment at FCRC reported improved overall distress tolerance (as measured by the Distress Tolerance Scale, Simons & Gaher, 2005). They also demonstrated improvements in areas that are believed to comprise general distress tolerance. For example, tolerance refers to an individual’s belief that distress is unmanageable. Poor appraisal relates to an individual’s limited acceptance of distress and perception that their coping abilities are inferior. Poor emotional regulation is characterized by great efforts to avoid negative feelings. Absorption refers to the notion that individuals with poor distress tolerance tend to be consumed by their negative experiences and emotions (in each case, higher scores reflect improved skills). Study participants reported statistically significant improvements in overall general distress tolerance, absorption and emotional regulation, suggesting that they are acquiring and rehearsing critical skills necessary for successful management of their wellness and recovery.
Follow Up Assessment Period:

An examination of relapse rates for participants at Four Circles Recovery Center suggest that participants are maintaining therapeutic gains following program completion. Approximately 11% of participants reported increases in substance use problems from treatment termination to 3 months post-treatment. An additional 18% of participants reported a relapse to substance use, in the month preceding their assessment. This indicates that 71% of study participants are reporting persistent and positive treatment effects.

People around you are using drugs or alcohol when they are with you?

You are able to keep alcohol and drug use from interfering with your life?

You have had intense urges to use drugs or alcohol?

Duration of SUD Treatment:

<table>
<thead>
<tr>
<th>Number of Days in Treatment</th>
<th>Percentage of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;40</td>
<td>7%</td>
</tr>
<tr>
<td>40-50</td>
<td>21%</td>
</tr>
<tr>
<td>51-60</td>
<td>Average = 56 Days</td>
</tr>
<tr>
<td>61-70</td>
<td>19%</td>
</tr>
<tr>
<td>70-88</td>
<td>10%</td>
</tr>
</tbody>
</table>

3 Month Follow Up:

Programmatic Involvement:

- 2% in college
- 4% at home
- 46% in a halfway house
- 19% in a transitional living facility
- 9% in a residential treatment center
- 8% in an extended care program
- 12% other
Follow Up Assessment Period:

At the 12-month assessment, approximately 13% of participants reported increases in substance use problems from treatment termination. An additional 25% of participants reported a relapse to substance use. This suggests that approximately 62% of participants are maintaining treatment gains, one year following program completion. These relapse rates for FCRC participants are much improved, compared to rates of relapse in the overall treatment-seeking adult population. In general, abstinence rates are between 25-40% (for alcohol) and 20-30% (for illicit drugs) in the first 12 months after treatment.

You are working hard to solve your drug and alcohol problems?

You have hope you will solve your drug and alcohol dependency?

You feel treatment for drug and alcohol dependency is very important?

12 Month Follow Up:

Using Recovery Community:

<table>
<thead>
<tr>
<th>Type of Treatment:</th>
<th>Living Arrangement:</th>
</tr>
</thead>
<tbody>
<tr>
<td>20% Residential</td>
<td>13% Independently</td>
</tr>
<tr>
<td>5% IOP</td>
<td>28% with Parents</td>
</tr>
<tr>
<td>7% Outpatient SA</td>
<td>15% Outpatient</td>
</tr>
<tr>
<td></td>
<td>Counseling</td>
</tr>
<tr>
<td></td>
<td>50% None</td>
</tr>
<tr>
<td></td>
<td>3% Other</td>
</tr>
<tr>
<td></td>
<td>5% with Extended Family</td>
</tr>
<tr>
<td></td>
<td>18% with Friends</td>
</tr>
<tr>
<td></td>
<td>26% at Treatment Center</td>
</tr>
<tr>
<td></td>
<td>8% Other</td>
</tr>
</tbody>
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Summary:

- Young adults have a heightened risk for the development of substance use disorders.
  - They have higher prevalence rates for SUDS.
  - They report less motivation and commitment to recovery.

- Four Circles Recovery Center offers wilderness-based treatment for young adults with substance use disorders.

- To gain a better understanding of treatment effectiveness, FCRC participated in one of the most comprehensive studies to date.

- Results show that FCRC participants demonstrated marked improvements in symptoms of SUDs and psychopathology broadly.

- Results also indicated that participants acquired the necessary skills to better manage wellness and recovery.

- Improvements were largely maintained for a full year following treatment completion.

- Results from the current study STRONGLY SUPPORT the use of a wilderness-based intervention, such as practiced at FCRC, in treating young adults with substance use disorders.

Select Citations


