

Using the Adventure Therapy Experience Scale (ATES) to Explore Client Experiences in an Adventure Therapy Program for Youth Involved in Child Welfare

Christine L. Norton¹, Anita R. Tucker², Aaron Weibe³, Kendra Miekjohn², Nicholas D'Amore², Brandon Chiapuzio², Matteo Bessone⁴, Lucy Holmes Whitney⁵, and Rachel Ortiz¹

ABSTRACT

Youth involved in the child welfare system experience disproportionately high rates of complex trauma and related mental health challenges, underscoring the need for engaging, trauma-informed, and youth-centered interventions. Adventure therapy (AT) has demonstrated promise as an experiential, strengths-based group intervention; however, limited research has examined AT from the perspective of system-involved youth themselves. This study explores participants' subjective experiences within a long-standing adventure therapy program—the Wilderness School—using a convergent mixed-methods design. Data were collected from 85 youth aged 12–19 through the Adventure Therapy Experience Scale (ATES), which captures both quantitative ratings and qualitative reflections across five domains: interpersonal, intrapersonal, reflection, challenge, and nature. Quantitative findings indicated that interpersonal and intrapersonal factors were rated as the most impactful components of the program, followed by nature-based experiences. Exploratory analyses revealed significant differences related to gender, living situation, and prior participation. Qualitative analyses further highlighted predominantly positive affective experiences, emphasizing peer relationships, personal growth, and connection to nature, while also identifying challenges related to physical discomfort and goal focus. Findings underscore the importance of centering youth voice and choice in trauma-informed adventure therapy programming and suggest that AT may serve as a meaningful, voluntary intervention to support healing, resilience, and engagement among youth involved in child welfare. Implications for practice and future research are discussed.

Keywords: Adventure Therapy, Youth, Wilderness, Child Welfare, Foster Care

The Journal of Foster Care

2026 – Volume 7 – Issue 1 – Pages 1-28

Copyright of this article is held by the author(s) and distributed under a BY-NC-ND Creative Commons license. This license enables reusers to copy and distribute the material in any medium or format in unadapted form only, for noncommercial purposes only, and only if attribution is given to the creator.



¹ Texas State University

² University of New Hampshire

³ State of Connecticut Department of Children and Families (DCF)

⁴ Albany County Department of Mental Health

⁵ The Mountain Center

Youth involved in child welfare are considered a vulnerable population due to a high prevalence of exposure to traumatic events (Czerwińska & Kucharska, 2024). On average, there are 400,000 youth in foster care in the United States, many of whom have unmet mental health needs related to the complex trauma these individuals experience (Gupta-Kagan, 2020; The Policy Circle, 2024). The reasons for foster care placement are most often associated with abuse, neglect, and other safety concerns within their home, which lead to higher rates of PTSD and complex PTSD, causing emotional dysregulation, relationship disturbances, and overall negative self-concept (Czerwińska & Kucharska, 2024). Longitudinal research on adverse childhood experiences has found a clear positive relationship between complex trauma in childhood and future physical and mental health problems, especially for youth with lived experience in foster care (Felitti et al., 1998; Liming et al., 2021).

Research in recent years continues to demonstrate elevated mental-health risks among youth in foster care related to complex trauma. For instance, one 2021 study found that among adolescents (ages 11–17) in foster care, symptom levels for internalizing disorders such as social and generalized anxiety, as well as depression, were substantially more frequent than in community samples (Moussavi et al., 2022). Youth with lived experience in foster care are at an increased risk for negative psychological, neurobiological, and behavioral outcomes (Keefe et al., 2022). Specifically, Keefe et al. (2022) showed that children in foster care had roughly 2.5 to 2.3 times higher odds of being diagnosed with a mental health disorder or developmental disorder compared to non-foster youth. These mental health issues both precede involvement in the child welfare system but are also exacerbated by system involvement (Herd et al., 2023). While foster care is designed to replace a harmful environment with a more beneficial placement, research indicates that the application of evidence-based practices to assist youth during transitions has historically been inconsistent (Leathers et al., 2016; Teculeasa et al., 2023).

Several evidence-based interventions for youth and families involved in the child welfare system have been identified and supported by the Annie E. Casey Foundation (n.d.) and the U.S. Children's Bureau Child Welfare Information Gateway (n.d.). These include models such as trauma-focused cognitive behavioral therapy and multidimensional treatment foster care, which are designed to facilitate trauma recovery and strengthen systemic supports. However, among interventions developed specifically for youth with lived experience in foster care, relatively few directly target health and mental health outcomes while also meeting established criteria for best practices (Greeson et al., 2020).

In response to this gap, Teculeasa et al.'s (2023) recent meta-analysis restricted its review to randomized controlled trial studies to more accurately assess the effectiveness of trauma interventions. Notably, not all of the included studies focused exclusively on youth in foster care; some targeted foster parents or examined combined approaches. Although systemic treatment models and family engagement remain essential intervention components, it is equally important to identify which interventions directly support trauma recovery for youth themselves.

Access to youth perspectives is particularly critical. Many young people with lived experience in foster care are hesitant to engage in therapy, often reporting feelings of coercion and perceptions of over-diagnosis or over-medication (Miglani et al., 2019).

Consequently, there is a clear need for choice-based, youth-centered interventions that emphasize strengths, resilience, and coping skills, and that frame trauma recovery as a process of growth rather than as a response to pathology or diagnostic labels.

Group therapy may offer a less pathologizing approach to addressing mental health challenges, fostering healing through interpersonal relationships and corrective emotional experiences (Yalom, 1995). For youth transitioning into foster care, group therapy has been implemented using experiential learning methods—such as play- and art-based activities—to promote resilience and mastery (Craven & Lee, 2010). Similarly, Taussig and Culhane (2010) demonstrated through a rigorous randomized controlled trial that a mentoring and skills group improved mental health outcomes for preadolescent maltreated children in foster care, with significant reductions in trauma, anxiety, and depression-related symptoms. This intervention, like other experiential models, emphasized active skill development as a core mechanism of change. In line with these approaches, adventure therapy (AT) provides an experiential, skill-building group intervention—often facilitated or supervised by licensed mental health professionals—that uses outdoor activities and sequenced challenges to cultivate mastery, resilience, and social competence (Alvarez et al., 2021). While evidence-based interventions remain essential for supporting youth in foster care, AT shows promise as a complementary practice to meet the specific mental health and trauma recovery needs of youth and young adults involved in the child welfare system (Tucker et al., 2025).

AT involves the physical engagement of participants and the intentional use of cooperative games, problem-solving initiatives, challenge, and adventure activities, often in an outdoor setting (Alvarez et al., 2021; Gass, et al., 2020). AT gained traction upon the use of Outward Bound and the inception of several therapeutic programs using wilderness and adventure in the 1970s – 1980s. Early research in the field showed that the wilderness environment was healing for youth involved in the juvenile justice system, as well as inpatient and outpatient mental health settings and that cognitive and behavioral changes could happen because of its use (Davis-Berman & Berman, 1994). AT can be an effective intervention in promoting social skills (Tucker, 2009) and enhancing self-concept and perception of competence in essential life skills, and foster group cohesion (Norton & Tucker, 2010). AT has also been shown to reduce symptoms of distress related to interpersonal issues and mental health challenges as well as improve the overall functioning of adolescent clients (Norton et al., 2014; Tucker et al., 2013; Tucker et al., 2025; VanKanegan et al., 2019). Current research has shown reductions in substance use (Panagiotounis et al., 2021), conduct disorder behaviors (Mohan et al., 2022), and increases in hope (Norton et al., 2020) and self-efficacy (Christian et al., 2021). Research has highlighted AT's efficacy and noted the vital process of engaging clients experientially (Koperski et al., 2019; Newman et al., 2023; Tucker et al., 2025).

AT can be implemented in both wilderness/residential settings, as well as in community-based mental health, or a combination of the two (Alvarez et al., 2021; Norton et al., 2014). Community-based AT has shown to be more effective in treating youth with mental health issues than those without an adventure component in traditional therapy (Tucker et al., 2013). Community-based AT may be a viable option for more individuals and families due to its accessibility, as group therapies are often already being used (Tucker et al., 2025). Community programs can then include a wider variety of clients who would

not be able to participate in other traditional, more expedition-based programs, especially when clients attend programs out of state, far from their homes (Tucker et al., 2025).

Despite this, wilderness/residential models of AT (known as wilderness therapy) can help provide a meaningful separation for youth from family and community risk factors (Harper & Russell, 2008; Tucker et al., 2023). From the lens of attachment theory, wilderness therapy has been shown to be effective in clients developing healthy attachments with adults and peers while in treatment (Bettmann et al., 2011). With the occurrence of transition in relationships for those in foster care, the need for healthy attachments and relationships is essential to address in treatment settings (Bettmann et al., 2011). In addition to building healthy relationships and attachment, a recent meta-analysis showed that structured nature-based outdoor activities can improve depression, reduce anxiety, and improve positive affect (Coventry et al., 2021), all of which are important for youth involved in foster care who have experienced complex trauma.

Adventure Therapy with Youth Involved in Child Welfare

While Adventure Therapy has a foundation of research supporting its overall efficacy with youth (Bowen & Neill, 2013; Norton et al., 2014), more research is still needed to fully assess the therapeutic components of adventure therapy for specific client populations, especially from the client's point of view. In an early study, Fischer & Attah (2001) examined the use of a seven-day Outward Bound experience tailored to address the therapeutic needs of 23 youth from four foster care group homes in Atlanta, Georgia. They collected scaled data on ratings of self-esteem and child behavior pre- and post- and 3-months post-program, along with open-ended post-course surveys to document the perspectives of the youth, their foster parents, and their foster care workers regarding the program's impact on the youth. In assessing the qualitative survey responses of foster youth, foster parents, and staff, Fischer & Attah categorized the responses as positive, negative, or neutral. Though 57% of youth in their study thought Outward Bound was a positive experience for them, the overall findings on child behavior were mixed with conflicting reports from foster youth and foster parents and staff.

More recent research on the use of therapeutic camps to bring together siblings separated within the foster care system found that the camp had a lasting impact on healthy relationships, social and leadership skills, and youth confidence (McCarthy et al., 2020). In another study, Waid & Wojciak (2022) examined counselor ratings of program implementation and youth-reported outcomes at a manualized camp-based reunification program for siblings separated by out-of-home care. This study paid careful attention to the physical and psychological safety of the camp environment and its ability to provide youth opportunities to bond, make memories, and have fun together. Findings highlighted important associations with youth belonging and resilience (Waid & Wojciak, 2022).

Currently, programs and practices are emerging that implement AT approaches with youth and families with lived experience in foster care (Norton et al., 2019; Tucker et al., 2025). In 2017, the Foster Care Adventure Therapy Network was created to bring together programs and practitioners around the world who are using AT with youth involved in child welfare (Norton et al., 2017). This group networks and shares practice ideas and approaches at conferences and through social media and other formats. Research collaboratives have also emerged from this group and spurred a recent study that

examined the impacts of a statewide trauma-informed group work initiative for youth involved in Child Protective Services in the state of Ohio (Tucker et al., 2025). The Ohio Adventure Therapy Coalition (OATC) developed an implementation model to support youth workers in facilitating adventure therapy groups across the state with a focus on trauma-informed care and involving providers in a parallel process so they can personally understand the process of adventure therapy. Researchers conducted a pilot study which collected data from youth, parents, and providers to assess overall mental health functioning and trauma symptoms (Tucker et al., 2025). Overall, there were significant decreases in trauma symptoms, behavioral issues and risk behaviors as reported by their providers captured by the Child and Adolescent Needs Assessment (CANS), and significant decreases in social problems, behavior disorders and depression and anxiety after participation as reported by the guardians on the Youth Outcomes Questionnaire (Tucker et al., 2025).

Research is also emerging examining the use of adventure therapy for youth with complex trauma (many of whom were system-involved) (Norton et al., 2019; Pringle et al., 2023; Pryor et al., 2018). Norton and colleagues (2019) found that adventure therapy decreased trauma symptomatology among children who participated in adventure therapy with their families. Pryor's et al.'s review (2018) outlined benefits to youth with trauma across various aspects of well-being, including mental, emotional, behavioral, social, cultural, economic, and environmental wellbeing. The benefits of adventure therapy are highlighted to include improvements in attachment, skills, schemas, and stress management (Pringle et al., 2023). Researchers also advocate for an ecological, human-rights-based approach to avoid harmful practices and shift to a complex trauma-informed approach in all of adventure therapy practices (Pringle et al., 2023).

Due to the challenges of treating survivors of complex trauma, researchers and practitioners have stressed the need for experiential interventions for trauma treatment (Alvarez et al., 2021; Senreich et al., 2024). Adventure therapy can meet this need as it naturally aligns with the tenets of trauma-informed care (Stauffer et al., 2026; Tucker et al., 2025). By utilizing AT to promote trauma recovery and growth, we can increase the range of treatment options available to youth affected by abuse and neglect. This type of intervention could be replicated in mental health settings as a viable group intervention to be used as a voluntary, strength-based option to improve mental health outcomes and contribute to retention and academic success (Tucker et al., 2025).

The Wilderness School Program Model & Outcomes

The Wilderness School is an intervention program sponsored by the State of Connecticut Department of Children and Families (DCF) that implements adventure therapy practices serving youth facing multiple risk factors, including complex developmental trauma, many of whom are in foster care. Participants are often referred to the program through child protective service social workers, juvenile court diversion programs, youth service bureaus, schools, private clinical practices, and parents. Once referred, all participation in the program is voluntary. The goal of the Wilderness School is to help participants discover a broader knowledge of their strengths and enhance their capabilities in their roles in their family and community social system by utilizing adventure therapy as a treatment modality (Connecticut Department of Children and Families -DCF, 2025).

The Wilderness School has a long history of using adventure therapy approaches with foster and at-risk youth. Since its inception in 1974, the Wilderness School has applied an adapted Outward Bound approach as its primary intervention in working with struggling teens. In this approach, identified adolescents participate in a wilderness expedition-based experience with others in their peer group. In a physically and emotionally safe environment, the group may experience challenges and stressors that often come with living together and camping outdoors while participating in strenuous physical and emotional activities such as hiking up mountains, rock climbing, canoeing, a solo reflection activity, and challenge course activities often involving heights. As part of the programming, instructors trained in group facilitation, risk management, psychological first aid, and youth development support students by teaching the tangible skills involved with each activity. They approach students with empathy, encourage and celebrate student successes, and support interpersonal problem-solving and social skills while maintaining the physical and emotional safety of the environment. These non-clinical staff have supervision from mental health professionals trained in trauma-informed care. The program highlights the therapeutic effect of the experience and the transfer of learning and skills that can be applied in students' lives outside the program; however, formal talk therapy is not practiced. As a companion to a youth's expedition experience, a nine-month follow-up program is offered to help maintain the growth and progress attained during the expedition.

The program aims to help each participant experience and internalize a positive, prosocial, and more capable sense of self in this challenge-rich and supportive wilderness environment. This is often qualified as an enhanced self-concept or self-esteem. Through accountability to the peer group and the natural consequences inherent to the environment, the program empowers participants and increases their ability to take responsibility for their actions and choices in a non-coercive manner. In addition, through the group-oriented process of the courses, the program works to support participants' interpersonal skill enhancement and social ability (DCF, 2025).

Prior Research Conducted on The Wilderness School

Over the years, unpublished studies, also known as gray research, have focused on the Wilderness School's effect on selected personality characteristics of participants as well as the effect of reducing delinquent behavior, leadership qualities of successful outdoor leaders, and sex-role stereotypes held by participants on Wilderness School Courses (Cytrynbaum & Ken, 1978; Gaston, 1978; Gaston et al., 1978; Pate, 1997; Plouffe, 1980; Stewart, 1978).

In the preliminary evaluation report conducted one year after the inception of the Wilderness School, the State of Connecticut Council on Human Services utilized measures like the Background History and Social History Questionnaire, Semantic Differential Ratings on Students (by self and staff), Behavior Ratings on Students (by self and staff), and Outcome Questionnaires and found post program that students experienced improvement with legal difficulties, and had a lower occurrence of substance abuse and social welfare system dependency (Cytrynbaum & Ken, 1978). Another study completed in the same year based on instructor and participants reports found that participants became more internally oriented, gained self-confidence, came to view

themselves more positively and were able to solve interpersonal problems better after the programs (Gaston et al., 1978).

Participation in Wilderness School programming has also been shown to have a significant impact on gender and sex-role stereotyping. A sex role questionnaire was given before and after the expedition, and researchers found that participants reported a significant change toward non-traditional sex-role stereotypes upon finishing their program (Pate, 1997). These results occurred in both co-ed groups as well as female-only groups.

Several studies measured participant change over time. In Stewart's 1978 study, adolescents were administered a pre-test, post-test, and follow-up Jesness Inventory, which measured 11 scales including an alienation scale, a withdrawal scale, and social anxiety scale, as well as Delinquency Attitude Scale measuring variables such as attitude towards school, family, and others. The results of the study indicated that the program showed significant changes in 6 out of the 16 areas of evaluation and "tend[ed] to support the Wilderness School as a catapult for long-range behavioral change" (Stewart, 1978, p. 76). A study conducted by the University of Connecticut expanded on previous work in that it measured not only personality change but behavior change post-treatment (Plouffe, 1980). This single-group design study reported a positive change in participants' sense of personal control and self-confidence. Additionally, the study indicated that participants exhibited less deviant behavior in their homes, schools, and community settings and were half as likely to be arrested as compared to their peers (Plouffe, 1980).

Similarly, Gaston (1978) found that participants experienced positive changes for at least 6 months after participation. Utilizing a Behavior Problem Checklist completed by referring agencies, the Nowicki Strickland I-E Scale, Clifford and Clifford self-confidence scale, a "Like Me-Not Like Me" questionnaire, randomized interviews, and an Interpersonal Problem-Solving Assessment technique, participants reported that they remained more internally oriented and experienced significantly lower overall frequency of deviant behavior in their 6-month follow-up report. They also reported positive changes in meeting challenges, self-confidence, getting along with parents, grades in school, and controlling their temper (Gaston, 1978). These results suggest that participation in Wilderness School programming can have long-lasting positive effects on foster and at-risk youth.

Study Rationale

Although prior research on the Wilderness School and other adventure therapy (AT) programs have demonstrated promising outcomes for youth, existing studies have primarily emphasized outcome measures rather than participants' lived experiences. Early and current research on AT with youth involved in child welfare highlights the importance of understanding not just whether programs work, but how young people perceive and make meaning of these experiences. Studies such as Fischer and Attah's (2001) Outward Bound evaluation and more recent investigations of therapeutic camps for siblings in foster care (McCarthy et al., 2020; Waid & Wojciak, 2022) underscore this need, revealing both the potential benefits of experiential interventions and the variability in how youth, caregivers, and providers interpret program impacts.

Emerging literature also emphasizes the unique relevance of adventure therapy for youth with complex trauma, many of whom are involved in child welfare systems (Norton et al., 2019; Tucker et al., 2025). AT aligns naturally with trauma-informed care principles and has been associated with improvements in attachment, emotional regulation, social functioning, and overall well-being (Norton et al., 2019; Pringle et al., 2023; Tucker et al., 2025). However, despite these contributions, most studies have prioritized provider or caregiver assessments, quantitative symptom reduction, or program implementation outcomes rather than capturing youth perspectives.

Given the Wilderness School's 50-year history of serving youth facing multiple risk factors—including many in foster care—there is a clear need to explore participants' own reflections on what aspects of the program feel meaningful, supportive, challenging, or therapeutic. While historical evaluations of the Wilderness School documented improvements in behavior, self-confidence, interpersonal skills, and long-term functioning, these studies also relied on staff reports, archival measures, or behavioral indicators rather than direct accounts from the youth themselves.

To address these gaps, the current study focuses explicitly on exploring participants' subjective experiences within the Wilderness School's adventure therapy model. Using the Adventure Therapy Experience Scale (ATES), this study examines participants' self-reported interpersonal, intrapersonal, reflection, challenge, and nature-based experiences (Russell & Gillis, 2017; Russell et al., 2017). By centering youth voices, this research aims to illuminate the therapeutic components most salient to participants, provide insight into how they experience AT, and deepen our understanding of how adventure therapy contributes to healing, growth, and resilience among system-involved youth.

Methods

Study Design and Measures

This study employed a convergent mixed-methods research design to create multiple datasets that could inform one another by collecting and analyzing both qualitative and quantitative data simultaneously, separately, and then merging them (Dawadi et al., 2021). In this case, Moseholm & Fetter's (2017) bidirectional approach was used to merge data so that the researchers could "use results from the quantitative and qualitative strands to look at each other and structure the merged findings based on both" (p. 5). The Adventure Therapy Experience Scale (ATES) 5.0 was used to collect both quantitative and qualitative data from youth participants (Russell & Gillis, n. d.). Qualitatively, it asks respondents to describe their adventure experience, explain how focused they were on their treatment goals during the experience, and share any additional thoughts or feelings about their experiences. Quantitatively, it asks respondents to "Indicate how much the adventure experience(s) helped you with your treatment goals" from 0 (not helpful) to 10 (completely helpful). In addition, the ATES asks students about their level of agreement from 0 (Strongly Disagree) to 10 (Strongly Agree) on a series of 20 statements. Those 20 questions are broken down into five subscales which look specifically at factors related to participants' *Interpersonal*, *Intrapersonal*, *Reflection*, *Challenge*, and *Nature* experiences during their adventure programming. Some examples of questions the subscales include, "I was intentionally supportive and encouraging of my peers" (Interpersonal); "I achieved

my treatment goals” (Intrapersonal); “I now think differently about my life” (Reflection); “Getting away and being in nature was especially meaningful for me” (Nature); and “I was physically challenged” (Challenge). Finally, the measure asks participants to indicate “How focused were you on your treatment goals during the experience” from 0 (not at all focused) to 10 (completely focused). The ATES was developed to include samples from a variety of AT programs over a several-month period and included a total of 720 assessments from 496 clients (Russell et al., 2017). Although the Adventure Therapy Experience Scale (ATES) was based on the goal of making the scale useful as a tool that could be used in the context of routine outcome monitoring (ROM), in this study the research used it to understand the impact of the adventure experience from the youth’s perspective (Russell et al., 2017).

This study used a posttest-only design and collected data at the end of the program from youth who attended the Wilderness School over the summer of 2019 and the summer of 2021. Due to Covid-19, no programs were run over the summer of 2020, and data collection and analysis were put on hold. After the summer of 2021, the study concluded and no further data were collected.

To ensure ethical standards, the study was approved by the Institutional Review Board at the first author’s university prior to data collection and by the Connecticut Department of Children and Families (DCF) Review Board. The third author is a Wilderness School employee who helped recruit the study sample and write up the program model; however, he was not involved in data analysis in order to manage the potential conflict of interests and ensure an ethical and appropriate research process. To further minimize conflict of interests, the first and second authors, who have no professional affiliation with the program, conducted all data analyses for this study.

Participants

The Wilderness School is a therapeutic outdoor adventure program overseen by the Department of Children and Families (DCF). This study recruited youth referred to the Wilderness School using purposive and snowball sampling methods (Sharma et al., 2017). The program hosted wilderness program orientations and gave recruitment fliers out to youth ages 12 and older to engage them in the study. Youth who volunteered for the study had to have participated in either the 5-, 7- or 20-day Wilderness School program. Some youth may have participated in two trips in one summer, so days of participation vary from five to 40 ($M = 11.1$, $SD = 7.3$), depending on the youth.

In total, data were gathered from 85 youth between the ages of 12 to 19 with a mean age of participants of 15.35 years ($SD = 1.82$). In terms of gender, 26 youth identified as Female (30.6%), 56 youth identified as Male (65.9%) and three youth identified as Transgender (3.5%). In terms of race, three participants identified as Asian (3.6%), eight as Black (9.6%); 13 as Hispanic (15.7%), 14 as Biracial or Multiracial (16.9%) and 45 as White (52.9%). Youth were also asked about their current living situation at the time of their participation. Of the 83 youth who responded, 23 were currently living in a foster home (27.7%), four were living in a group home (4.8%), 54 were living with their parents or legal guardians (63.5%), and two were in other living arrangements (2.4%). Although the specific circumstances of the youth living with parents or legal guardians were not collected, all youth in this study were referred to the Wilderness School from a variety of

youth-serving agencies, including a few schools, hospitals, and counseling centers; however, most were referred from local Connecticut Department of Children and Families agencies, indicating child welfare involvement of some kind. It is important to note that 27 (31.8%) of the youth had previously attended a summer program at the Wilderness School.

Data Analysis

This study employed both quantitative and qualitative data analysis methods. Quantitatively, the researchers used SPSS to analyze the data. Specifically, they computed descriptive statistics, including means, standard deviations, and ranges, for the ATEs questions to see the value participants placed on each of the five ATEs factors. After data were collected, additional data analyses, not originally planned, were conducted to explore possible differences between gender, living situation, previous participation and race. Gender is not addressed in the most recent literature (Norton et al., 2019; Norton et al., 2023; Tucker et al., 2025) and it looked at outcomes, not process factors. Living situation was explored by researchers due to a lack of literature specifically investigating its relationship with treatment factors. This study also looked at differences in youth experiences whether they were previous Wilderness School participants or attended for the first time. While different research has looked at how length of treatment impacts outcomes of youth participants in adventure therapy (Bowen & Neill, 2013), an analysis of the impact of treatment factors as reported by participants is missing from these discussions. Comparisons by race were completed to look at perspectives by youth across identities. Previous research has found Black males to report significantly larger improvements after participation in adventure therapy in comparison to non-Black participants (Tucker et al., 2014).

For these exploratory analyses, some statistical analyses could not be performed due to small sample sizes. Only three youth identified as transgender, which prevented conducting ANOVA analyses comparing male, female, and transgender youth. Similarly, because of limited sample sizes for youth identifying as Asian, Black, Hispanic, and Biracial/Multiracial, only descriptive, not inferential statistics were completed, as the researchers deemed it inappropriate to combine all youth of color into a single category for analysis. In fact, using “White” and “Non-White” as descriptors is biased and disrespectful language that does not promote diversity, and should be avoided (Flanagin et al., 2021). In addition, only two youth were in “other” placements, so those youth were not included in the independent t-test analyses due to sample size. Hence, independent-samples t-tests were only conducted with gender (male/female), living situation (guardians/foster or group home), and previous participation (yes/no) and the ATEs questions.

Similar to Fischer & Attah (2001) who categorized survey responses as positive, negative, or neutral, the qualitative responses were coded to differentiate between clients who had a positive affective experience (responses that showed client satisfaction), neutral experience (for responses that couldn’t be determined as positive or negative/satisfaction or dissatisfaction), or a negative affective experience (responses that showed client dissatisfaction). This type of affective coding allowed the researchers to center client experience by relating emotional dynamics to client satisfaction with the intervention

(Locke et al., 2022). Two of the authors independently coded all of the qualitative responses and then came together to discuss their coding until they had 100% agreement.

Findings

Quantitative ATES Findings

As shown in Table 1, wilderness school participants reported interpersonal factors as the most impactful part of their Wilderness School experience as measured by the quantitative subscale of Self-Interpersonal. Additionally, the next two highest factors included Self-Intrapersonal and Nature. Challenge and Reflection were the lowest ranked factors reported by youth participants.

Table 1. ATES Scores

Adventure Therapy Experience Scale	M (SD)	Range
ATES Subscale: Self Interpersonal	7.37 (1.68)	1-10
ATES Subscale: Self Intrapersonal	6.96 (1.78)	0-10
ATES Subscale: Reflection	6.21 (1.58)	2-9
ATES Subscale: Challenge	6.30 (1.49)	1-9
ATES Subscale: Nature	6.98 (2.47)	0-10
ATES Total Score	137.13 (28.1)	60-195

Comparisons of Gender, Living Situation and Previous Participation

Exploratory comparison across means on the ATES and its subscales on gender, living situation, previous participation and race are presented in Table 2 and 3. In terms of gender, independent samples t-tests found two statistically significant differences between males and females as measured by the ATES. Females reported statistically significant higher levels of Reflection ($M = 6.67$, $SD = 1.64$) than males [$M = 5.95$, $SD = 1.78$, $t(65) = 1.75$, $p = .04$]. Similarly, females reported significantly higher levels of Challenge ($M = 6.82$, $SD = 1.21$) compared to the male participants [$M = 6.03$, $SD = 1.57$, $t(64) = 2.06$, $p = .04$] with moderate effect sizes for each of these differences (See Table 2). In terms of living arrangement, there was one statistically significant difference reported by youth; youth living in a foster or group home reported statistically significant higher levels of Challenge ($M = 6.71$, $SD = 1.34$), than youth living with their parents or guardians [$M = 6.08$, $SD = 1.51$, $t(66) = 1.67$, $p = .04$], with a moderate effect size ($d = .43$) as well for this relationship (See Table 2).

Table 2. Comparison of Gender, Living Situation and Previous Participation across ATES Scores

ATES Scales				n	M	SD	t	Cohen's d (CI low to high)
ATES Subscale: Self Interpersonal		Female		23	7.65	1.29	.98	.25 (-.25 to .76)
		Male		45	7.22	1.88		

Adventure Therapy for Youth Involved in Child Welfare

ATES Intrapersonal	Subscale: Self	Female	23	6.83	1.64	-.40	-.10 (-.61 to .41)
		Male	41	7.01	1.90		
ATES Reflection	Subscale:	Female	22	6.67	1.08	1.75*	.45 (-.06 to .97)
		Male	45	5.95	1.78		
ATES Challenge	Subscale:	Female	22	6.82	1.21	2.06*	.54 (.01 to 1.06)
		Male	44	6.03	1.57		
ATES Subscale: Nature		Female	22	7.40	2.11	.92	.24 (-.27 to .76)
		Male	43	6.79	2.68		
ATES Total Score		Female	20	142.4	20.04	1.03	.29 (-.27 to .85)
		Male	33	134.1	32.21		
ATES Interpersonal	Subscale:	Parents/ Guardian	46	7.34	1.44	.08	.02 (-.48 to .52)
		Foster/Grou p home	23	7.37	2.12		
ATES Intrapersonal	Subscale:	Parents/ Guardian	44	7.11	1.36	-.45	-.15 (-.68 to .38)
		Foster/Grou p home	20	6.85	2.42		
ATES Reflection	Subscale:	Parents/ Guardian	47	6.18	1.56	.26	.07 (-.44 to .57)
		Foster/Grou p home	22	6.29	1.70		
ATES Challenge	Subscale:	Parents/ Guardian	44	6.08	1.51	1.70*	.43 (-.08 to .93)
		Foster/Grou p home	24	6.71	1.34		
ATES Subscale: Nature		Parents/ Guardian	44	6.81	2.36	.89	.23 (-.28 to .75)

Adventure Therapy for Youth Involved in Child Welfare

		Foster/Group home	22	7.39	2.73		
ATES Total Score		Parents/Guardian	37	134.8	25.33	.88	.26 (-.32 to .84)
		Foster/Group home	17	142.1	33.54		
ATES Interpersonal	Subscale:	Previous Client	22	7.80	1.52	1.45	.37 (-.14 to .88)
		First Time Client	48	7.18	1.73		
ATES Intrapersonal	Subscale:	Previous Client	22	7.47	1.40	1.80*	.43 (-.09 to .95)
		First Time Client	44	6.67	1.91		
ATES Reflection	Subscale:	Previous Client	24	6.65	1.32	1.72*	.41 (-.10 to .92)
		First Time Client	48	6.01	1.67		
ATES Challenge	Subscale:	Previous Client	21	6.14	1.65	-.58	-.15 (-.67 to .36)
		First Time Client	47	6.37	1.42		
ATES Subscale: Nature		Previous Client	21	8.20	1.55	3.45**	.76 (.23 to 1.29)
		First Time Client	46	6.42	2.65		
ATES Total Score		Previous Client	18	146.2	22.02	1.71*	.50 (-.08 to 1.05)
		First Time Client	36	132.6	30.01		

* $p < .05$, ** $p < .01$

In terms of previous participation, there were several statistically significant differences between youth returning to the Wilderness School and those for which it was their first summer of participation. As reported in Table 2, compared to first time clients, previous clients reported statistically significant higher levels of Self-Intrapersonal [$t(55) = 1.80, p = .04$], Reflection [$t(51) = 1.72, p = .04$], Nature [$t(60) = 3.45, p = .003$], and their total ATES Score [$t(52) = 1.71, p = .04$]. Moderate effect sizes were reported for

Self-Intrapersonal, Reflection, and Total Score; however, strong effect sizes were reported for Nature, with previous clients reporting almost two points higher than first-time clients.

Table 3 reports the descriptive means for youth across race on the ATEs and its subscales. Due to low sample sizes, we could not analyze differences statistically, but there are a few noticeable differences. Overall, Black youth reported the highest means for Reflection. Asian youth reported the highest levels for Self-Interpersonal, Self-Intrapersonal, and Nature, with Hispanic youth reporting the lowest means for the subscales of Nature and Reflection. Although only three youths identified as Asian, hence these findings are limited. The subscale with the least difference across race was Challenge, with all means within less than one point of each other.

Table 3. Means across ATEs Total and Subscales by Race

	ATES Subscale: Self- Interpersonal	ATES Subscale: Self- Intrapersonal	ATES Subscale: Reflection	ATES Subscale: Challeng e	ATES Subscale: Nature	ATES Total Score
Race	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Asian (<i>n</i> = 3)	9.17 (.76)	8.08 (1.66)	7.33 (2.32)	6.33 (2.50)	9.25 (1.29)	160.67 (31.53)
Black (<i>n</i> = 8)	6.75 (3.31)	5.80 (3.98)	8.25 (1.19)	6.50 (1.40)	7.15 (4.40)	142.75 (58.46)
Hispanic (<i>n</i> = 11)	6.80 (1.94)	6.77 (1.95)	5.53 (1.61)	6.20 (.78)	5.89 (3.04)	126.00 (36.85)
White (<i>n</i> = 40)	7.52 (1.32)	7.18 (1.28)	6.30 (1.43)	6.15 (1.58)	7.00 (2.09)	137.00 (22.39)
Bi or Multi- Racial (<i>n</i> = 13)	7.29 (1.38)	6.57 (1.59)	5.52 (1.34)	6.72 (1.71)	7.13 (1.84)	135.44 (18.98)
Total Sample	7.37 (1.69)	6.93 (1.78)	6.20 (1.59)	6.29 (1.50)	6.94 (2.46)	136.85 (28.24)

This study was also interested in looking at how gender, race, living situation, and previous participation impacted participants' perception of how the adventure experience helped them towards their treatment goals as well as how focused they were on their goals during the experience. Table 4 reports out the means for these questions across groups. Overall, the total sample reported a mean of 6.01 (*SD* = 2.72) out 10 in terms of how focused they were on their treatment goals and a 7.15 (*SD* = 2.05) out 10 for how much the experience helped with their treatment goals. Due to low sample sizes, we were unable to analyze mean differences across races; however, it is interesting to note that both Black and Bi-or Multi-racial youth reported the highest means levels for focusing on their treatment goals. As shown in Table 4, only one statistically significant relationship was found. Youth living in a foster or group home were statistically significantly more focused on their treatment goals during the experience (*M* = 6.92, *SD* = 2.79) than those living with their parents or guardians [*M* = 5.62, *SD* = 2.60, *t*(69) = 1.94, *p* = .03] with a moderate effect size (*d* = .49). There were no significant differences between

groups in terms of client's perception of how much the experience helped them with their treatment goals (See Table 4).

Table 4. Comparisons Across Gender, Race, Living Situation and Previous Participation on Help with and Focus on Treatment Goals

	How much has your adventure experience helped you with your treatment goals? (0 to 10) 0 - Not Helpful at All 5 - Somewhat Helpful 10 – Completely Helpful		How focused were you on your treatment goals during the experience? (0 to 10) 0 – Not at All Focused 5 – Somewhat Focused 10 – Completely Focused	
	M (SD)	Range	M (SD)	Range
Gender				
Female (<i>n</i> = 22)	7.30 (1.89)	3-10	6.63 (2.34)	3-10
Male (<i>n</i> = 34)	7.10 (2.18)	0-10	5.76 (2.79)	0-10
Transgender (<i>n</i> = 3)	6.50 (2.12)	5-8	5.00 (4.35)	0-8
Race				
Asian (<i>n</i> = 3)	9.50 (0.71)	9-10	4.50 (3.53)	2-7
Black (<i>n</i> = 8)	6.60 (4.22)	0-10	6.80 (2.78)	3-10
Hispanic (<i>n</i> = 11)	6.73 (1.90)	4-10	5.18 (3.25)	0-10
White (<i>n</i> = 40)	7.27 (1.65)	3-10	5.85 (2.66)	0-10
Bi or Multi-Racial (<i>n</i> = 13)	6.96 (2.09)	3-10	6.75 (2.38)	3-10
Current Living Situation				
With Parents/Guardians (<i>n</i> = 47)	7.07 (1.67)	3-10	5.62 (2.60) ^a	0-10
Foster Care/Group Home (<i>n</i> = 24)	7.62 (2.50)	0-10	6.92 (2.79) ^a	0-10
Prior Wilderness School Participant				
Yes (<i>n</i> = 22)	7.47 (1.74)	5-10	5.91 (2.84)	0-10
No (<i>n</i> = 47)	7.03 (2.20)	0-10	6.13 (2.62)	0-10
Total Sample	7.15 (2.05)	0-10	6.01 (2.72)	0-10

^a significant mean differences *p* < .05

Qualitative ATES Findings

At the beginning of the ATES, participants are asked the open-ended question “Describe adventure experience(s)”. Some respondents wrote about the actual activity in which they participated, which included things like hiking, rock climbing, canoeing, cooking, solo, camping, swimming/dipping, backpacking, rappelling, ropes course, and community services. However, many participants answered this question by describing the affective quality of their experience in the Wilderness School Program. Though this may not have been the intent of the question, we wanted to capture this data because it reflected clients’ experiences and voices. These were often short, 1–2-word responses that included feeling words, adjectives, or descriptive verbs. These responses were analyzed, coded, and

Adventure Therapy for Youth Involved in Child Welfare

categorized into positive, negative, or neutral. To minimize subjectivity of the coding multiple researchers examined and verified the codes. When the coders could not ascertain the meaning of the client's response or there was disagreement about whether a client response was positive or negative, it was coded as neutral. Several participants answered the question with multiple words or phrases, so the total number of responses is greater than the sample size. If multiple participants responded using the same word or phrase, it was counted numerous times. For example, the word "fun" was used to describe the Wilderness School experience by 28 different participants. Responses were not coded demographically but reflected attitudes of the overall sample demographics presented previously. Finally, the number of responses in each category was calculated to determine the percentages of each category. Based on these calculations and coding categories, 63% of participants' responses were coded as positive (67 responses), 13% as negative (14 responses), and 24% (26 responses) were categorized as neutral. All participant responses can be seen in Table 5. Participants described their experiences with positive affective words and phrases that reflected things like enjoyment, adventure, accomplishment, and the beauty of nature. Those who had negative responses seemed to be reacting to the physical discomfort and challenge of the intervention. The neutral responses demonstrated novel experiences or emotions but were hard to categorize whether they were positive or negative without making assumptions.

Table 5. ATEs: "Describe Your Experience"

Positive Responses) (67	Exciting (x 4) Fun (x3) Adventurous (x3) Learning (x 2) Bonding Amazing Exploration Healthy Rejuvenation Beautiful Thrilling Great Sense of Accomplishment I absolutely loved every minute of it. Nice to try new things.	New (x 3) Enjoyment (x 3) Cool (x 2) Relaxing (sometimes) (x 2) Breathtaking Intriguing Teamwork Giving Back Unforgettable Enlightening Hardworking Exhilarating Getting to learn more about myself as a whole and being able to push myself to the limits.
Negative responses) (14	Tiring (x 3) Frustrating (x 2) Irrigating Not Interesting Wet Socks	Annoying Anxiety Exhausting Sucked Some things I didn't like
Neutral responses) (26	Hard (x 7) Boring (x 5) Crazy Physically Challenging	Challenging (x 3) Long (x2) Weird Mentally challenging

Adventure Therapy for Youth Involved in Child Welfare

	Slow Type 2 Fun	Rain Simple
--	--------------------	----------------

The final open-ended question in the ATES is a three-part question that asks participants a series of treatment-related questions:

- Q1: How focused were you on your treatment goals during the experience?
- Q2: Can you provide a specific example of why you answered the above question the way you did?
- Q3: Are there any other thoughts or feelings you would like to share about your experience?

The answers provided to these Q1, Q2, and Q3 were coded and analyzed together within a similar framework of client satisfaction and positive, negative, or neutral experiences and reactions and can be found in Tables 6 and 7. Not all participants took the time to answer the qualitative questions so the total number of responses in each category is less than the sample size.

In Table 6, we see that 50% (10 responses) of responses were positive in terms of working on treatment goals, 30% were negative, and 20% were deemed neutral. In Table 7, 71% of responses were positive, 13% were negative, and 16% of responses were deemed neutral. It is important to note that this question was “extra” and was an opportunity for youth to use their voice to give open-ended feedback about their experiences. In this sense, we believe the ATES is a useful tool for elevating client voice.

Table 6. Focus on Treatment Goals with Specific Examples

Positive (10 responses) “I was focused on my goals because I always tried to make new friends each day.” “I felt almost always focused at all times.” “During breaks and solo I got a chance to reflect on what I was doing.” “I knew the things I had to work on, and when I took space, I reminded myself of those things.” “I was thinking about life and how I could take the things I learned here into my life.” “I was focused because I wanted to be really determined and complete my goals to make myself better.” “We took time to talk over what we were gonna take away from this experience.”

"Being outside helped me appreciate the simplicity of things."

"I realized what was all around me."

"I was also focused on trying to find a new me."

"I put myself into the situation I was in mentally and had a reflection on myself."

Negative (6 responses)

"I absentmindedly worked on my goals without trying to."

"I wasn't concentrating most of the time on my treatment goals."

"I didn't think of my goals during my trip."

"I didn't care enough about the goals to work on them."

"I didn't think I had a treatment plan."

"I was more focused on the fact that we were trying to survive in the woods."

"I was too focused on how much my body hurt and how much everything hurt."

Neutral (4 responses)

"I was more focused on nature than my goals."

"I was more focused on the fact that I was "climbing" and hiking hard."

"When I was hiking or canoeing, and especially during the marathon, I pushed myself farther than I thought."

Table 7. Other Thoughts or Feelings

Positive (23 responses)

"My crew helped me look at myself in a different light."

"I was challenged enough to accomplish goals but was not pushed past my limits."

"The adventure allowed me to bond with peers and go through the week as if I wanted to be here."

"I really enjoyed this. It gave me a new experience. It also changed me mentally and physically a little."

"I was very relaxed just looking at nature and getting away from the world."

"I am really grateful for this experience and if I get the chance, I'm 90% sure I would do it again."

"At first I wasn't enjoying myself, but halfway through I began to love it."

"I was proud of myself for getting through it."

"I had the time of my life! I feel like I can really discipline and condition myself."

"I enjoy the WS every time I come."

"I would do it ten times over again."

"It was an amazing experience of "type 2 fun" that I was very reluctant to do in the first place."

"I really liked it, and I would hope to do it again."

"My experience was new. I enjoyed it and wanna come back again soon!"

"I had a really great time, and I am happy with the group I went out with, along with the instructors."

"It was fun, and I would want others to try it." x2

"I'm excited to do the next outdoor adventure!"

"I loved the majority of the trip and had a great time."

"I thought that this trip was exhausting and well worth it."

"The instructors did great, loved being out in the wilderness again."

"It was amazing!"

"It was great all around."

"Best days ever."

Negative (4 responses)

"I felt like I was treated unfairly."

"I felt that some of the group wasn't happy with me. They seemed annoyed at who I was."

"The instructor shouldn't force a student to drink or eat dirty ass water that makes you want to puke."

"No. It sucked. I am never coming back. I need to ice my feet."

Neutral (5 responses)

"Emotions can change depending on the setting you are in."

"Day 2 was hard."

"It was tiring."

"We should be able to have coffee."

"I put myself into the situation I was in mentally and had a reflection on myself."

Discussion

Based on both quantitative and qualitative findings, Wilderness School participants overall experienced the program positively and were able to both enjoy the experience and its therapeutic effects. Since adventure therapy is a group intervention that inherently requires group members to work together to be successful and meet group goals (Alvarez et al., 2021; Tucker, 2009), the fact that youth reported the Interpersonal factor of the ATEs as having the highest impact on their experience is unsurprising. In the Wilderness School program, youth are on expedition for multiple days, travel and live together all while carrying their own gear and preparing their own meals. This process provided opportunity for the participants to build interdependence and relationships as well as time to notice and be aware of the beauty of the natural environment as highlighted by the Nature subscale. This aligns with Tucker et al.'s 2023 study with youth who attended wilderness programming and reported feelings of awe due to their time in nature. It is unclear why both Challenge and Reflection were considered lower than other ATEs subscales. Qualitative responses suggested that participants were indeed challenged by their trip and engaged in times of reflection as highlighted in Tables 5 -7. One explanation may be due to the

ATES measure itself, and the questions used to measure these subscales. Questions from the subscale Challenge like “I was emotionally exhausted” or “I was never pushed to my limits” may not reflect participant’s own definition of challenge. In fact, one participant said in this study “I was challenged enough to accomplish goals but was not pushed to past my limits” (See Table 7), suggesting that feeling challenged does not necessarily require being pushed beyond one’s perceived limits. Similarly, one of the subscale questions for Reflection, “my actions and thoughts were not intentional,” is double-barreled in that it asks two questions in one, making the response hard to interpret.

In all three categories of qualitative responses, a large percentage of responses were positive (67%, 50%, and 71%); however, the lowest level of positive responses was in response to being asked about their treatment goals. Given that the Wilderness School’s AT program model does not engage in traditional counseling services, it is possible that some participants didn’t view the outdoor experience as part of their treatment. One client even stated they “didn’t know they had a treatment plan.” However, the quantitative data showed that youth living in a foster or group home were significantly more focused on their treatment goals during the experience than those living with their parents or guardians. Perhaps more integration is needed to identify, frontload, and integrate all participants’ treatment goals outside of the Wilderness School to work on them more intentionally while in the outdoor program.

Based on these findings it seems that client satisfaction in the Wilderness School program is high. High client satisfaction in the Wilderness School is supported by the fact that participants not only return to the program, but also report significantly higher levels of Self-Intrapersonal, Reflection, Nature and for their total ATES Score. Client satisfaction in the program and the fact that participants willingly return to the program may be signs of client preference in this treatment modality. From a treatment perspective, it is interesting that so many participants took time to share their satisfaction and enjoyment and even shared their interest in continuing their participation in the program. For youth who are system-involved and often forced into treatment, the voluntary nature of this program created choice points for them to consider doing it again, which can be a key building block in the change process (Rajaraman et al., 2022).

Client preference has been deemed a key variable in treatment completion and clinical outcomes and should be given more attention in adventure therapy (Windle et al., 2020). Choice is a key element of a trauma-informed approach and may be especially important for clients who have experienced trauma (Simiola et al., 2015). This is not to say that participants who have experienced trauma cannot handle the challenges of an outdoor program, but it does mean that they may experience these challenges differently or more intensely (Alvarez et al., 2021). In fact, this study supports this, as youth living in a foster or group home reported significantly higher levels of Challenge than youth living with their parents or guardians. This reaffirms that programs need to be designed with the client’s voice/choice in mind and provide opportunities to assess what level of challenge is needed to avoid re-traumatization and support therapeutic growth and change (Pringle et al., 2023). Several negative comments from students who had poor experiences indicate that when youth are overly focused on survival or distracted by discomfort, they cannot focus on their treatment goals. Though most participants enjoyed the level of challenge, comments from the qualitative data also suggested that some students did not respond well to the physical challenges presented, which should be examined just as closely to better assess “goodness of fit” when determining who is appropriate for the Wilderness School programming.

The findings in this study also support the need for adventure therapy programming to be culturally relevant. Though we were unable to analyze racial and ethnic differences statistically, the noticeable differences between Black, Hispanic, and Asian youth remind us that there is no one-size-fits-all intervention and the Wilderness School’s attention to their training on cultural humility and trauma informed practices are particularly important to support the varied personal narratives and experiences

that you bring with them to the program. As noted earlier, it is essential to center youth voice and choice in program design and implementation (Bloomer et al., 2023). This may be especially true for underrepresented groups in adventure therapy settings because, thus far, best practices have only been developed and normed with primarily white participants (McLain et al., 2025). Therefore, we not only need more AT research with diverse youth, but we also need to invite and structure participant feedback into our research and interventions.

Limitations

Because we administered the ATES as a stand-alone tool and did not pair ATES data collection with routine outcome monitoring, we could not determine which factors were at work in helping effectuate treatment outcomes at various points in the treatment process. In addition, we did not collect detailed information regarding the specific nature of DCF involvement for youth living with their parents or legal guardians. Although most participants were referred by DCF—indicating some level of child welfare system involvement—we were unable to distinguish differences in type or intensity of involvement across these youth. When comparing outcomes between youth living with parents or legal guardians and those living in foster care or group homes, only one statistically significant difference emerged: youth residing in foster care or group homes reported significantly higher levels of Challenge than those living with their parents or guardians. Future research should more closely examine youth outcomes in relation to specific types and levels of child welfare involvement. Additionally, we did not track youth after program completion, limiting our understanding of the program's long-term impacts. We also had small sample sizes regarding race, and youth who identify as transgender, limiting our ability to do statistical analyses and determine if significant differences existed across groups. Future research is needed to further explore and highlight the role of the client's voice; hence, additional qualitative research, including focus groups with parent/guardian participation, could deepen our understanding of the impact and potential of the Wilderness School's programming.

Conclusion

Much of the prior research on adventure therapy has focused on treatment outcomes with limited samples of mostly white males. Though outcome research helped to legitimize the field of adventure therapy as a viable mental health treatment option, the field has been accused of overly focusing on outcomes at the expense of ongoing progress monitoring, client voice and choice, and client preference and satisfaction (Dobud et al., 2020; Harper et al., 2021; Magnuson et al., 2022) —all process variables related to quality care and treatment completion (Lindhiem et al., 2014). According to Fischer et al. (2020), "Previous studies exploring client processes and the interventions assumed to promote them have found that both processes and interventions are related to a reduction in symptoms" (p. 1). Therefore, by utilizing the ATES, this study sought to understand processes with underrepresented and system-involved clients, such as client satisfaction and preference regarding specific treatment components, including time in nature, adventure activities, peer relationships/leader relationships, and activity reflection. The data showed largely positive experiences and outcomes but also yielded important data regarding cultural and gender differences that should be explored in future research.

References

- Alvarez, T. G., Stauffer, G., Lung, D. M., Sacksteder, K., Beale, B., & Tucker, A. R. (2021). *Adventure group psychotherapy: An experiential approach to treatment*. Routledge.
- Annie E. Casey Foundation. (n.d.). *Evidence-based practice*. <https://www.aecf.org/work/evidence-based-practice>

- Bettmann, J. J., Olson-Morrison, D. D., & Jasperson, R. R. (2011). Adolescents in wilderness therapy: A qualitative study of attachment relationships. *Journal of Experiential Education*, 34(2), 176-194. <https://doi.org/10.1177/105382591103400206>
- Bloomer, R., Harris, L. M., Brown, A. A., & Crosby, S. (2023). Exploring the promotion of youth voice in community-based youth development programmes. *Child & Family Social Work*, 28(2), 291-301. <https://doi.org/10.1111/cfs.12961>
- Bowen, D., & Neill, J. (2013). A meta-analysis of adventure therapy outcomes and moderators. *The Open Psychology Journal*, 6, 28–53. <https://doi.org/10.2174/1874350120130802001>
- Christian, D. D., McMillion, P., Brown, C. L., Schoonover, T. J., & Miller, B. A. (2021). Using adventure therapy to improve self-efficacy of middle school students. *Journal of School Counseling*, 19(26), n26.
- Connecticut Department of Children and Families. (2025). *The Wilderness School*. https://portal.ct.gov/dcf/knowledge-base/articles/supports-for-children-and-families/tss-and-supports-for-adolescents/the-wilderness-school?language=en_US
- Coventry, P. A., Brown, J. V. E., Pervin, J., Brabyn, S., Pateman, R., Breedvelt, J., Gilbody, S., Stancliffe, R., McEachan, R., & White, P. C. L. (2021). Nature-based outdoor activities for mental and physical health: Systematic review and meta-analysis. *SSM - Population Health*, 16, 100934. <https://doi.org/10.1016/j.ssmph.2021.100934>
- Craven, P. A., & Lee, R. E. (2010). Transitional group therapy to promote resiliency in first-time foster children: A pilot study. *Journal of Family Psychotherapy*, 21(3), 213-224. <https://doi.org/10.1080/08975353.2010.505539>
- Cytrynbaum, S., & Ken, K. (1978). *The Connecticut Wilderness Program: A preliminary evaluation*. A report submitted to the State of Connecticut, Council on Human Services. Unpublished.
- Czerwińska, M., & Kucharska, K. (2024). PTSD and cPTSD in foster children-a review of the literature. *Psychiatria i Psychologia Kliniczna*, 24(1), 89-97. <https://doi.org/10.15557/PiPK.2024.0012>
- Davis-Berman, J., & Berman, D. (1994). *Wilderness therapy: Foundations, theory and research*. Kendall/Hunt Publishing.
- Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-methods research: A discussion on its types, challenges, and criticisms. *Journal of Practical Studies in Education*, 2(2), 25-36. <https://doi.org/10.46809/jpse.v2i2.20>
- Dobud, W. W., Cavanaugh, D. L., Harper, N. J. (2020). Adventure therapy and routine outcome monitoring of treatment: The time is now. *Journal of Experiential Education*, 43(3), 262–276. <https://doi.org/10.1177/1053825920911958>
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, 14(4), 245-258. [https://doi.org/10.1016/s0749-3797\(98\)00017-8](https://doi.org/10.1016/s0749-3797(98)00017-8)
- Fischer, R. L., & Attah, E. B. (2001). City kids in the wilderness: A pilot-test of Outward Bound for foster care group home youth. *Journal of Experiential Education*, 24(2), 109-117. <https://doi.org/10.1177/105382590102400208>
- Fisher, H., Rafaeli, E., Bar-Kalifa, E., Barber, J. P., Solomonov, N., Peri, T., & Atzil-Slonim, D. (2020). Therapists' interventions as a predictor of clients' emotional experience, self-understanding, and treatment outcomes. *Journal of Counseling Psychology*, 67(1), 66-78. <https://doi.org/10.1037/cou0000377>

- Flanagin, A., Frey, T., Christiansen, S. L., & AMA Manual of Style Committee (2021). Updated guidance on the reporting of race and ethnicity in medical and science journals. *JAMA*, 326(7), 621-627. <https://doi.org/10.1001/jama.2021.13304>
- Gass, M. A., Gillis, L. H., & Russell, K. (2020). *Adventure therapy: Theory, research and practice* (2nd Ed.). Routledge Press. <https://doi.org/10.4324/9781003016618>
- Gaston, D. W. (1978). *Evaluation of the Connecticut Wilderness School: A wilderness adventure program for pre-delinquent and delinquent teenagers*. [Unpublished doctoral dissertation, The University of Connecticut].
- Gaston, D.W., Plouffe, M. M., & Chinsky, J. M. (1978). *An empirical investigation of a wilderness adventure program for teenagers: The Connecticut Wilderness School*. Paper presentation at the Eastern Psychological Association, 49th Annual Meeting, Washington, DC. ED 17B250
- Gillis, H. L., Gass, M. A., & Russell, K. C. (2008). The effectiveness of project adventure's behavior management programs for male offenders in residential treatment. *Residential Treatment for Children & Youth*, 25(3), 227-247. <https://doi.org/10.1080/08865710802429689>
- Greeson, J., Garcia, A. R., Tan, F., Chacon, A., & Ortiz, A. J. (2020). Interventions for youth aging out of foster care: A state of science review. *Children and Youth Service Review*, 113(1), 105005. <https://doi.org/10.1016/j.childyouth.2020.105005>
- Gupta-Kagan, J. (2020). America's hidden foster care system. *Stanford Law Review*, 72, 841.
- Harper, N. J., Magnuson, D., & Dobud, W. W. (2021). A closer look at involuntary treatment and the use of transport service in outdoor behavioral healthcare (wilderness therapy). *Child & Youth Services*, 42(2), 200-219. <https://doi.org/10.1080/0145935X.2021.1938526>
- Harper, N. J., & Russell, K. C. (2008). Family involvement and outcome in adolescent wilderness treatment: A mixed-methods evaluation. *International Journal of Child & Family Welfare*, 11(1), 19-36.
- Herd, T., Palmer, L., & Font, S. (2023). Prevalence of mental health diagnoses among early adolescents before and during foster care. *Journal of Developmental and Behavioral Pediatrics*, 44(4), e269–e276. <https://doi.org/10.1097/DBP.0000000000001191>
- Keefe, R. J., Cummings, A. D. L., Greeley, C. S., & Van Horne, B. S. (2022). Mental health and developmental disorder diagnoses of foster and nonfoster children enrolled in Medicaid. *Journal of Developmental and Behavioral Pediatrics*, 43(5), e296–e303. <https://doi.org/10.1097/DBP.0000000000001030>
- Leathers, S. J., Melka-Kaffer, C., Spielfogel, J. E., & Atkins, M. S. (2016). Use of evidence-based interventions in child welfare: Do attitudes matter? *Children and Youth Services Review*, 70, 375-382. <https://doi.org/10.1016/j.childyouth.2016.10.022>
- Liming, K. W., Akin, B., & Brook, J. (2021). Adverse childhood experiences and foster care placement stability. *Pediatrics*, 148(6), e2021052700. <https://doi.org/10.1542/peds.2021-052700>
- Lindhiem, O., Bennett, C. B., Trentacosta, C. J., & McLearn, C. (2014). Client preferences affect treatment satisfaction, completion, and clinical outcome: a meta-analysis. *Clinical Psychology Review*, 34(6), 506-517. <https://doi.org/10.1016/j.cpr.2014.06.002>
- Locke, K., Feldman, M., & Golden-Biddle, K. (2022). Coding practices and iterativity: Beyond templates for analyzing qualitative data. *Organizational Research Methods*, 25(2), 262-284. <https://doi.org/10.1177/1094428120948600>
- Magnuson, D., Dobud, W., & Harper, N. J. (2022). Can involuntary youth transport into outdoor behavioral healthcare treatment programs (wilderness therapy) ever be ethical? *Child and Adolescent Social Work Journal*, 41(3), 417-425. <https://doi.org/10.1007/s10560-022-00864-2>
- McCarthy, L. P., Lee, B. R., Schagrin, J., & Loysen, S. (2020). “Knowing that I wasn’t alone”: An evaluation of a therapeutic camp reunifying siblings in foster care. *Children and Youth Services Review*, 117, 105296. <https://doi.org/10.1016/j.childyouth.2020.105296>

- McLain, J. R., Russo, G. M., Brown, C. L., McKenzie, S., & Crowson, H. M. (2025). Evaluating the effectiveness of adventure therapy in anxiety-related disorders: A meta-analysis. *Journal of Counseling & Development*, 103(3), 373-386. <https://doi.org/10.1002/jcad.12563>
- Miglani, J., Scrivener, J., & Miglani, S. (2019). Are we overdiagnosing and overmedicating children & adolescents being raised in non-parental households & foster care? A community mental health center perspective. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 28(1), 4-6.
- Mohan, A., Malhotra, S., Narayanan, M., White, H., & Gaffney, H. (2022). PROTOCOL: The effectiveness of wilderness therapy and adventure learning in reducing anti-social and offending behaviour in children and young people at risk of offending. *Campbell systematic reviews*, 18(3), e1270. <https://doi.org/10.1002/cl2.1270>
- Moussavi, Y., Wergeland, G.J., Bøe, T. Haugland, B. S. M., Larsen, M., & Lehmann, S. (2022). Internalizing symptoms among youth in foster care: Prevalence and associations with exposure to maltreatment. *Child Psychiatry & Human Development*, 53(2), 375–388. <https://doi.org/10.1007/s10578-020-01118-x>
- Moseholm, E., & Fetters, M. D. (2017). Conceptual models to guide integration during analysis in convergent mixed methods studies. *Methodological Innovations*, 10(2). <https://doi.org/10.1177/2059799117703118>
- Norton, C. L., Pruess, R., Weibe, A., Pryor, A., Horn, A., et al. (2017). *Trauma-informed adventure therapy with current and former foster care youth*. Professional Development Intensive. Association for Experiential Education International Conference, Montreal, Canada.
- Norton, C. L., & Tucker, A. R. (2010). New heights: Adventure-based group work in social work education and practice. *Groupwork*, 20(2), 24-44. <https://doi.org/10.1921/gpww.v20i2.701>
- Norton, C. L., Tucker, A., Farnham-Stratton, M., Borroel, F., & Pelletier, A. (2019). Family enrichment adventure therapy: A mixed methods study examining the impact of trauma-informed adventure therapy on children and families affected by abuse. *Journal of Child & Adolescent Trauma*, 12(1), 85-95. <https://doi.org/10.1007/s40653-017-0133-4>
- Norton, C.L., Tucker, A. R., Pelletier, A., VanKanegan, C., & Boggs, K. (2020). Utilizing adventure therapy to increase hope and well-being among shelter residents. *the Journal of Outdoor Recreation, Education, and Leadership (Special Issue: A Critical Exploration of Girls' and Women's Experiences in Outdoor Recreation, Education, and Leadership)*, 12(1), 87-101. <https://doi.org/10.18666/JOREL-2020-V12-I1-9928>
- Norton, C. L., Tucker, A., Russell, K. C., Bettmann, J. E., Gass, M. A., Gillis, H., & Behrens, E. (2014). Adventure therapy with youth. *Journal of Experiential Education*, 37(1), 46-59. <https://doi:10.1177/1053825913518895>
- Panagiotounis, F., Theodorakis, Y., Hassandra, M., & Morres, I. (2021). Psychological effects of an adventure therapy program in the treatment of substance use disorders. A Greek pilot study. *Journal of Substance Use*, 26(2), 118-124. <https://doi.org/10.1080/14659891.2020.1807630>
- Pate, L. J. (1997). Adolescent sex-role stereotyping: Change through wilderness courses. *Journal of Experiential Education*, 20(3), 161-165. <https://doi.org/10.1177/105382599702000309>
- Plouffe, M. E. (1980). *A longitudinal analysis of the personality and behavioral effects of participation in the Connecticut Wilderness School: A program for delinquent and pre-delinquent youth*. [Unpublished doctoral dissertation, The University of Connecticut].
- Pringle, G., Boddy, J., Slattery, M., & Harris, P. (2023). Adventure therapy for adolescents with complex trauma: A scoping review and analysis. *Journal of Experiential Education*, 46(4), 433-454. <https://doi.org/10.1177/10538259221147>

- Pryor, A., Pryor, R., & Carpenter, C. (2018). *Outdoor adventure interventions young people and adversity: A literature review*. Berry Street.
- Rajaraman, A., Hanley, G. P., Gover, H. C., Staubitz, J. L., Staubitz, J. E., Simcoe, K. M., & Metras, R. (2022). Minimizing escalation by treating dangerous problem behavior within an enhanced choice model. *Behavior Analysis in Practice*, 15(1), 219-242. <https://doi.org/10.1007/s40617-020-00548-2>
- Russell, K., & Gillis, H. L. (n. d.). *The Adventure Therapy Experience Scale (ATES)*. <https://atescale.info/>
- Russell, K., & Gillis, H. L. (2017). The adventure therapy experience scale: The psychometric properties of a scale to measure the unique factors moderating an adventure therapy experience. *Journal of Experiential Education*, 40(2), 135-152. <https://doi.org/10.1177/1053825917690541>
- Russell, K. C., Gillis, H. L. L., & Kivlighan, D. M. (2017). Process factors explaining psycho-social outcomes in adventure therapy. *Psychotherapy*, 54(3), 273–280. <https://doi.org/10.1037/pst0000131>
- Senreich, E., Straussner, S. L. A., & Dann, J. (Eds.). (2024). *Experiential therapies for treating trauma*. Taylor & Francis.
- Sharma, G. (2017). Pros and cons of different sampling techniques. *International Journal of Applied Research*, 3, 749-752. <https://www.allresearchjournal.com/archives/2017/vol3issue7/PartK/3-7-69-542.pdf>
- Simiola, V., Neilson, E. C., Thompson, R., & Cook, J. M. (2015). Preferences for trauma treatment: A systematic review of the empirical literature. *Psychological Trauma: Theory, Research, Practice, and Policy*, 7(6), 516–524. <https://doi.org/10.1037/tra0000038>
- Smith, T. (1987). Foster families and adventure/challenge therapy. *The Bradford Papers Annual*, 2, 65-72.
- Stewart, M. W. (1978). *Effects of the Connecticut Wilderness School on selected personality characteristics and attitudes of troubled youth*. [Unpublished Doctoral dissertation, University of Utah].
- Stauffer, G., Alvarez, T. G., Lung, D. M, Sacksteder, K., Tucker, A. R., & Beale, B. (2026). *Individual adventure psychotherapy*. Routledge.
- Taussig, H. N., & Culhane, S. E. (2010). Impact of a mentoring and skills group program on mental health outcomes for maltreated children in foster care. *Archives of Pediatrics & Adolescent Medicine*, 164(8), 739–746. <https://doi.org/10.1001/archpediatrics.2010.124>
- Teculeasa, F., Golu, F., & Gorbănescu, A. (2023). The effectiveness of psychological interventions on the impact of trauma exposure in foster care: A meta-analysis. *Journal of Child and Adolescent Trauma*, 16, 917–932. <https://doi.org/10.1007/s40653-023-00563-9>
- The Policy Circle. (2024). *Policy Circle brief: Foster care*. <https://www.thepolicycircle.org/briefs/the-failures-and-future-of-the-u-s-foster-care-system/>
- Tucker, A. R. (2009). Adventure-based group therapy to promote social skills in adolescents. *Social Work with Groups*, 32(4), 315-329. <https://doi.org/10.1080/01609510902874594>
- Tucker, A. R., Beale, B., Norton, C. L., Walsh, H., Keefe, K., Holmes, L., & Wermer-Colan, R. (2025). The Ohio Adventure Therapy Coalition: A statewide trauma informed group work initiative to meet the needs of CPS youth. *The Journal of Creativity in Mental Health*, 20(3), 376–390. <https://doi.org/10.1080/15401383.2024.2386163>
- Tucker, A. R., DeMille, S., Newman, T. J., Polachi Atanasova, C., Bryan, P., Keefe, M., & Smitherman, L. (2023). How adolescents view the role of the wilderness in wilderness therapy: “I am in the

- middle of nowhere and that is okay". *Children and Youth Services Review*, 153(1), 107045. <https://doi.org/10.1016/j.childyouth.2023.107045>
- Tucker, A.R., Javorski, S., Tracy, J., & Beale, B. (2013). The use of adventure therapy in community-based mental health: Decreases in problem severity among youth clients. *Child and Youth Care Forum*, 42(2), 155-179. <https://doi.org/10.1007/s10566-012-9190-x>
- U.S. Children's Bureau. (n.d.). *Evidence-based practice*. <https://www.childwelfare.gov/topics/casework-practice/evidence-based-practice/?top=287>
- VanKanegan, C., Tucker, A.R., McMillion, P., & Gass, M. (2019). Adventure therapy and its impact on the functioning of youth in a community setting. *Social Work with Groups*, 42(2), 127-141. <https://doi.org/10.1080/01609513.2018.1478761>
- Waid, J., & Wojciak, A. (2022). What makes summer camp therapeutic for siblings separated by out-of-home care? Associations from counselor ratings of program implementation to youth-reported outcomes. *Developmental Child Welfare*, 4(2), 136-153. <https://doi.org/10.1177/25161032221093409>
- Windle, E., Tee, H., Sabitova, A., Jovanovic, N., Priebe, S., & Carr, C. (2020). Association of patient treatment preference with dropout and clinical outcomes in adult psychosocial mental health interventions: A systematic review and meta-analysis. *JAMA Psychiatry*, 77(3), 294-302. <https://doi.org/10.1001/jamapsychiatry.2019.3750>
- Yalom, I. (1995). *The theory and practice of group psychotherapy* (4th Ed). Basic Books.

About the Authors

Christine L. Norton, PhD, LCSW-S, CCAT, CCTP, CET, is a Professor of Social Work at Texas State University and a Licensed Clinical Social Worker with over 30 years of experience working with youth and young adults across therapeutic and community settings. Her research and practice focus on trauma-informed care, positive youth development, and adventure therapy. She co-coordinates the Outdoor Research Collaborative, founded the Foster Care Adventure Therapy Network, provides foster care support in higher education, and is an internationally published Fulbright Scholar and TEDx speaker.

Anita R. Tucker, LICSW, PhD, CCAT is a Professor in the Department of Social Work at the University of New Hampshire. She is the Co-Coordinator of Outdoor Research Collaborative for Health, Wellbeing and Experiential Engagement which focuses on supporting research and best practices in outdoor and experiential interventions.

Aaron Wiebe, Ed.M., is the State of Connecticut Department of Children and Families (DCF) Wilderness School Director. Aaron has worked for decades as an active practitioner in the field of Outdoor Therapeutic Adventure. Aaron holds a master's degree in Education from Smith College, along with training and experience in Psychology, Social Work, and Outdoor Education.

Kendra Micklejohn, MSW, LCSW, is a graduate of the University of New Hampshire's dual master's degree in Social Work and Outdoor Education. She has been a guide and clinical therapist for families in both backcountry and residential settings since 2005.

Nicholas D'Amore, MS, MSW, is a graduate of the University of New Hampshire's dual master's degree in Social Work and Outdoor Education. They live in the Boston area, but are involved in environmental justice and food sovereignty efforts throughout New England.

Adventure Therapy for Youth Involved in Child Welfare

Brandon Chiapuzio, MS, MSW, is a graduate of the University of New Hampshire's dual master's degree in Social Work and Outdoor Education. Brandon is a Licensed Clinical Social Worker in Oakland, California, and his work is focused on serving teens and young adults.

Matteo Bessone, MS, MSW, is a graduate of the University of New Hampshire's dual masters degree in Social Work and Outdoor Education. He grew up in Mamaroneck NY, got his BS in creative writing at Warren Wilson College in Swannanoa, NC, and currently resides in Albany NY, where he works as a psychotherapist at the Albany County Department of Mental Health outpatient clinic.

Lucy Holmes Whitney, MS, LMSW, CTAS, is a graduate of the University of New Hampshire's dual master's degree in Social Work and Outdoor Education. She now works as a full-time Adventure Therapist at the Mountain Center in Santa Fe, New Mexico.

Rachel Ortiz, LMSW, holds both a BSW and an MSW in Social Work from Texas State University. She currently works in private practice in Austin, Texas, where she regularly integrates nature-based interventions into her clinical work. Rachel specializes in trauma treatment, with a particular focus on veterans and first responders, and uses psychodynamic therapy and EMDR in her practice.