Promoting Resilience in College Students Through Adventure Therapy Groups: A Pilot Study

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Abstract

In response to the need for engaging and innovative group therapy approaches to increase social supports and interpersonal relationships among college students, an adventure therapy (AT) program was implemented in a college counseling center. Using the Resiliency Scale for Young Adults and the Counseling Center Assessment of Psychological Symptoms (CCAPS), this mixed-methods, pilot study gathered preliminary data to examine the impact of group-based adventure therapy on personal resilience and distress among college students who participated in the adventure therapy program compared to those in the traditional counseling group and those who received no treatment at all. Findings showed increased treatment completion rates among college students who participated in the adventure therapy program, and well as changes in resilience, depression, anxiety, and distress based on large effect sizes for AT participants. Qualitative findings showed increased distress tolerance, trust and relationship-building skills, stress reduction, and reduced stigma. These finding support adventure therapy as an alternative treatment modality that may help address the growing number of unmet mental health needs among college students.

Keywords: group-based adventure therapy, college students, resilience

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Transition to college is a delicate time in which many students face unfamiliar stressors and are expected to use coping strategies to manage new relationships, possible setbacks, and increases in academic and personal responsibilities. The inability to make this transition can lead to mental health struggles including depression, anxiety, academic failure, and non-persistence (Prince-Embury et al., 2017). The Center for Collegiate Mental Health 2015 Annual Report showed the utilization rate of college counseling centers increased by 30-40% in the previous five years, with a 5% enrollment increase (Center for Collegiate Mental Health, 2016). According to Rakow & Eells (2019), "Many students struggle with managing uncomfortable emotions and display low levels of distress tolerance" (p. 8), leading to an increase in the demand for mental health care on campus. This has increased even more since the onset of the pandemic (Babb et al., 2022). In a recent study, over a third of undergraduate college students screened positive for major depressive disorder and generalized anxiety disorder (Chirikov et al., 2020). Another study found increased levels of stress, depressive thoughts, and anxiety due to the pandemic among 71% of students surveyed (Eysenbach et al., 2020).

College counseling centers report anxiety as the primary presenting concern in their clients, with 23.3% of counseling center clients seeking treatment for anxiety (Center for Collegiate Mental Health, 2017). The Center for Collegiate Mental Health (2017) shows an increasing trend in social anxiety and generalized anxiety disorders. Depression is the second highest reported concern, with 18.8 % of students seeking treatment at college counseling centers (Center for Collegiate Mental Health, 2017). Anxiety disorders have an onset between 14-20 years old, and over half of people with depression will experience onset in childhood, adolescence or young adulthood (Zisook et al., 2007). Kessler et al. (2005) found that 75% of those who will have a mental health disorder have had their first onset by age 25 years, and yet, while there is an increase in students seeking services at college counseling centers, many students who screen positive for depression and anxiety do not receive services (Eisenberg et al., 2007).

Most mental health disorders have an onset around the age when young adults often go to college, and symptoms may be triggered by ineffective coping skills for the transition from adolescence to young adulthood and exacerbated by the stressors of college life (Pedrelli et al., 2015). Perceived college stress, including academic pressures, adjusting to new interpersonal relationships with roommates, classmates, professors, etc., adjusting to new responsibilities

including housing, finances, and day-to-day life choices, is a predictor of non-persistence through college (Dixon Rayle et al.,2005). The combination of low distress tolerance with these perceived stressors can create an environment where anxiety is perceived as normal. The most common reason students with stress do not receive services is that they believe that stress is normal and does not warrant services from the counseling center on campus (Eisenberg, et al., 2007).

Not only are there high levels of psychological distress among this population, there is also low mental health engagement, particularly among males (Rice et al., 2018). The avoidance of seeking help early can lead to more significant mental health diagnoses (Hunt et al., 2010), especially when students have complex, developmental trauma and lack of social support (Watt et al., 2022). Therefore, college counseling centers often feel compelled to re-examine their services in order to better engage students. College counseling centers do so by providing therapeutic, trauma-informed services to students actively seeking clinical services, along with wellness initiatives to engage students and foster coping strategies to develop resilience and prevent the development of more acute mental health diagnoses.

Resilience as a Protective Factor

The developmental transition to college for traditionally aged students may include being away from their home environment for the first time. Once students transition to college, they must navigate a college culture that prizes traditional achievements, such as internships and awards (Rosenbaum & Liebert, 2015). Students feel pressure to achieve more, and often compare themselves with their peers. With the advent of social media, students receive immediate feedback in real time on their successes and failures. Often when students do not succeed, they see the failure as a lack of character or failure of will, instead of reflecting on the subjective factors. The combination of pressure to succeed, lack of acknowledgment of efforts, peer judgment, and fear of failure not only leads to anxiety; it leads to feelings of shame, low self-worth, and despair (Rosenbaum et al., 2015). Rarely is the arduous path leading to success or failure acknowledged, and students are left frustrated when success is not attained. Without support, this difficult path can lead to stress-related difficulties and maladaptive coping (Dvořáková et al., 2017).

To help college students persist in reaching their personal and academic goals, it is important to foster protective factors that help students with and without mental health challenges achieve their goals. Previous research on college student mental health has focused on self-efficacy and access to support as protective factors for young adults succeeding in college (Friedlander et al.,

2007; Peebles, 2007;). Resilience involves both of these factors and is a protective factor for college students that can be developed through growth experiences (Masten, 2014). Masten (2014) defines resilience as the "positive adaptation in the context of risk or adversity" (p.9). However, resilience is less an individual trait and more "a dynamic process involving an interaction between the individual and the environment" in which the individual can connect with others, problem-solve, and overcome (Prince-Embury et al, 2017, p.277).

This reinforces the importance of building resilience both in the individual and in their environment. For college students in particular, it is important to provide opportunities for meaningful social interaction and connection to help create positive peer support. This is critical because Rakow and Eells (2019) found that students who feel isolated are at greater risk for distress and need experiences that support connection and community with their peers. Watt et al. (2022) reaffirmed this research, documenting that social connections can mediate the negative relationship between trauma and depression/anxiety among college students.

In examining the promotion of resilience among college students, this study utilizes Prince-Embury et al.'s (2007) three-factor model of personal resilience. This model first includes a sense of mastery, comprised of optimism, self-efficacy, and adaptability. Second, a sense of relatedness, including a sense of trust, perceived access to support and comfort with and tolerance of others. The third factor is emotional reactivity, further described by sensitivity, length of recovery time from emotional upset, and degree of impairment related to the emotional upset. Given the stressors college students face, these three domains are important to focus on clinically. While continuing to provide traditional talk therapy options, college counseling centers also might consider how experiential, skill-building interventions can enhance mastery, relatedness and emotional self-regulation through interventions such as adventure therapy.

Adventure Therapy

Adventure Therapy (AT) is "the prescriptive use of adventure experiences provided by mental health professionals, often conducted in natural settings that kinesthetically engage clients on cognitive, affective and behavioral levels" (Gass et al., 2020). This is a broad term and has a large spectrum of treatment modalities. It extends from extended wilderness expeditions to outpatient sessions. Much of the research has been on the improved mental health functioning of youth and young adults in residential wilderness programs (Hoag et al., 2013; Norton et al,. 2014; Vankanegan et al., 2018); however, research on community-based AT is growing. Community-based AT is held in an outpatient

setting, and usually takes place through weekly individual or group sessions. Similar to residential wilderness programs, community-based AT has an impact on decreasing distress and increasing interpersonal skills in adolescent clients struggling with mental health concerns (Norton et al, 2014; Vankanegan et al., 2018). In one of the few studies on community-based AT with adults, researchers concluded that stress levels decreased and utilization of coping strategies increased after the AT treatment (Koperski et al., 2015). Though some research exists on the positive impact of outdoor adventure programs with college students (Chang et al., 2019; Paquette et al., 2014), currently, we have not found research assessing the use of campus-based adventure therapy groups with college students.

Adventure Therapy Groups

Group-based adventure therapy is grounded in an experiential education model and has key components that differentiate it from other therapeutic treatment modalities (Alvarez et al., 2021). The AT process includes placing participants in a novel environment, in which they work together on a task that contains real or perceived risk. During the task, the participants develop new beliefs and behaviors to adapt and master the task with the goal of transferring the learning from the activity to a generalization of mastery in other situations in their lives outside of treatment.

Clients use skills discussed in the group sessions and can receive and give each other feedback to meet their goals. Similar to group therapy, clients often discuss how they want to manage a certain situation; however, in AT the client can experientially practice and receive feedback on their problem-solving methods. AT provides an active approach that holds clients accountable for their behaviors. The use of nature and metaphors from the natural world is a component of this therapeutic modality (Gass et al., 2020). Nature is sometimes considered a co-therapist as it provides healing aspects that are unattainable without the group physically being in nature (Berger & McLeod, 2006; Taylor et al., 2010).

Not only are the group environment and the outdoors critical to AT, the relationship between the therapist and the clients is also important to the success of the intervention and is uniquely shaped by shared experiences (Newes et al., 2004). Clinicians are, in some ways, part of the group. This is different from traditional counseling, in which the client seeks guidance from the clinician, and there is a defined hierarchy. The adventure therapy clinician role models vulnerability, which helps create the emotionally safe environment necessary to facilitate activities that require risk and perceived stress. This type of therapeutic

relationship minimizes counter-therapeutic hierarchy and may allow the client to be more open to feedback from the clinician, thus improving the therapeutic alliance (Koperski et al., 2015).

Purpose

In response to college counseling centers searching for engaging and innovative group therapy approaches to increase social supports and interpersonal relationships, group-based adventure therapy surfaced as a possible way to achieve these goals. A pilot study was developed to gather preliminary data about the impact of adventure therapy on resilience in college students, with a comparison group of college students receiving traditional group therapy, as well as a comparison group that did not receive any counseling services.

A collaborative partnership between a university counseling center and an outdoor recreation program on campus was developed to provide this new therapeutic program. These departments had similar strategic goals to enhance student wellbeing, and the AT program model was implemented with little to no additional cost. The collaborative partnership will be discussed in further detail in the discussion and implication sections.

This pilot study examined the impact of group-based adventure therapy on personal resilience and distress in college students. Though a pilot study is not a hypothesis testing study (Hazzi & Maldaon, 2014), we wanted to compare AT with a traditional counseling group, and no counseling at all, in order to examine if there was any preliminary effect. Likewise, we wanted to see if AT participants experienced a decrease in anxiety, depression, social anxiety, academic distress, and overall distress compared to those in the traditional counseling group or those who received no treatment at all.

Participants

Undergraduate college students at a Hispanic Serving Institution (HSI) in the Southwest were given the opportunity to participate in this study, which was approved by the Institutional Review Board at the university where the study took place. Students were informed of the study through university-wide marketing. A total of 25 students were either clinically referred or self-referred participants and were screened for appropriateness for the study. All gave informed consent per ethical research guidelines. Ten of the participants were referred to the study by clinicians in the counseling department, and 15 were self-referred from campus promotion. Three students did not respond to participation in the study after the initial screening. Out of these 25 students, 22 were randomly assigned to three groups: no group (NG), counseling group (CG) and

adventure therapy group (AT). All participants were screened using a demographic form and the Counseling Center Assessment of Psychological Symptoms (CCAPS; Locke et al., 2011). All participants who were assessed were accepted into the study. Exclusionary criteria included eating disorders, active suicide ideation, active homicide ideation, substance abuse and psychosis.

Out of the 22 students who responded after the screening to be randomized, eight were randomized into the no counseling group (NG). As a comparison group, NG group did not receive any group counseling. The other comparison group, the counseling group (CG), had eight students, and this group received group counseling from the same clinicians who facilitated the Adventure Therapy group. This group focused on resilience skills as well, was primarily process based, and was held in the counseling center. The Adventure Therapy group (AT) consisted of seven students. This group was held outside on campus in a wooded area that has a primitive trail system and included a 3-day backpacking trip.

Out of the originally randomized groups, four students did not show up for the CG group, which left four participants at the first session. After four sessions, the CG group dropped to two participants. The dropout rate from randomization was 75%, and the dropout rate from the beginning of the group was 50%. The attendance rate for the two remaining participants was 60%. The comparison group (NG) had one person that did not participate in the post-treatment assessments due to being "too busy at exam time." The AT group started with seven participants, and one person dropped out after the first session due to obtaining a new job, equating to a 14% dropout rate. From the second session on, the AT group had a 99% attendance for the remaining group members, including the backpacking trip.

In all groups, students self-identified race and gender on their initial intake forms. The AT group (n = 6) included three students referred by clinicians and three self-referrals: four students who identified as females (66.6%) and two students who identified as males (33.3%); two African American (33.3%), two Caucasian (33.3%), and two Asian (33.3%). The CG group (n = 2) included two females (100%), one Latina (50%), and one Caucasian (50%). The NG group included four students who identified as female (66.6%) and two students who identified as male (33.3%), including one participant who identified as African American (16.6%), two as Caucasian (33.3%) and three as Latino (50%). No students in either group identified as gender non-binary or transgender. Due to the lack of attendance by the counseling group participants, the CG group pre-post measures were not analyzed. While this is seen as a limitation, this is also a possible indicator that college students prefer and/or prioritize the adventure therapy aspect of the group.

Measures

The Resiliency Scale for Young Adults (RSYA) is a developmental adaptation of the Resiliency Scales for Children and Adolescents (RSCA; Prince-Embury et al., 2017). It was developed with a focus on postsecondary student success and sampled on college students. The RSYA was also chosen because its predecessor, the RSCA, has been used in prior research to assess the effectiveness of adventure programming in increasing resilience (Whittington et al., 2016). Based on Prince-Embury's model, the RYSA divides personal resilience into three factors: Sense of Mastery, Sense of Relatedness, and Emotional Reactivity. Sense of Mastery is related to self-reported wellbeing, and congruous with positive psychology. Prince-Embury et al. (2017) pointed out that those students with a higher sense of mastery may develop more effective academic skills, which generates higher grades and leads to completion of academic goals. This subscale includes optimism about self, self-efficacy, and adaptability. Trust, access to support, comfort with others, and tolerance are subscales of Sense of Relatedness. Emotional Reactivity consists of sensitivity to stressors and recovery time from an upset and impairment. Stress, depression, and anxiety are correlated with emotional reactivity in the RSYA (Prince-Embury et al., 2017). The RSYA includes five questions for each of the ten subscales for the three-factor model, for a total of 50 questions. Questions are answered on a 5-point scale (0 = never to 4 = almost always), and the three factors are scored separately, 0-60 for Sense of Mastery and Emotional Reactivity and 0-80 for Sense of Relatedness. The internal consistency reliabilities of the three factors have coefficient alpha values that range between .89 and .92. The ten subscale internal consistencies range from .75 to .87, which are adequate to good, except Tolerance with a value of .65.

The Counseling Center Assessment of Psychological Symptoms (CCAPS; Locke et al., 2011) was designed for college counseling centers to assess mental health issues. The CCAPS-62 includes 62 questions and is split into eight subscales and the overall score is the Distress score. The eight subscales include, Depression, Generalized Anxiety, Social Anxiety, Academic Distress, Eating Concerns, Family Distress, Hostility and Substance Use, and an overall distress scale that encompasses all of the subscales (Locke et al., 2011). The questions ask clients to indicate distress over the past two weeks, and rank themselves on a five-point scale, (0 = not at all like me; 4 = extremely like me).

In Locke et al.'s (2011) study on internal consistency, in which he used 499 college students as participants, the eight subscales have acceptable to very good internal consistency coefficients. This study chose to focus on four subscales: Depression, Generalized Anxiety, Academic Distress, Social Anxiety and overall

Distress. The internal consistency for these subscales were Depression, Cronbach's α = .913; Generalized Anxiety, Cronbach's α = .846; Social Anxiety's Cronbach's α = .823; and Academic Distress' α = .781 (Locke et al., 2011). The test-retest reliability coefficients of 1-week and 2-week measures ranged from .782 for Generalized Anxiety to .927 for Depression in the one-week retest, and .759 for Academic Distress to .917 for Depression in the 2-week retest (Locke et al., 2011).

We chose anxiety, depression, and social anxiety due to their correlation with resilience subscales in the RSYA. Social anxiety has a negative correlation with sense of relatedness. Depression, anxiety, and stress have a positive correlation with emotional reactivity, and a negative correlation with sense of mastery, and sense of relatedness. (Prince-Embury, 2017). Also, adventure therapy has been shown to have a positive impact on decreasing depression, and anxiety and building healthy relationships (Gass et al., 2012; Norton et al., 2014; VanKanegan et al., 2018). The academic distress subscale was chosen due to this impact on college students' ability to persist and reach their academic career goals. Overall distress shows if participants were impacted in all subscales. Eating Concerns, Substance Use, Family Distress and Hostility were not specifically monitored; however, they were part of the overall distress score.

Pilot Research Design

This pilot study utilized a mixed-methods, exploratory research design, triangulating the quantitative data with qualitative data. The quantitative data included a pre-program self-report assessment for the no treatment comparison group (NG), and treatment group (AT) to determine differences in three resilience factors, as well as the four subscales of the CCAPS and overall distress. At the completion of the treatment program, participants in both groups also provided post-assessment data through the CCAPS and RSYA.

All statistical data was analyzed via SPSS to calculate standardized mean difference effect sizes. Given the small sample size and the quasi-experimental nature of this study, we recognized that it would not be possible to generalize our findings based on statistical significance. Statistical significance alone can be misleading because it is influenced by sample size; whereas effect sizes are independent of the sample size and are used to show practical significance of the findings (Bhandari, 2022). For these reasons, we calculated effect sizes, which need to be more fully reported and understood as measures of clinically significant change (Sullivan et al., 2012).

In addition to the quantitative data, a focus group for the AT treatment group was conducted at four-weeks post-treatment to examine aspects of the AT

experience that could not be captured in a quantitative assessment. Due to attrition, as well as the fact that the CG was meant to be a control group, and not the primary intervention being explored, only the AT group participated in a focus group. As this was a new intervention, we wanted to explore in the client's voice and words, how they experienced the AT group. An external, trained facilitator was chosen to conduct the focus group to decrease bias or influence that may occur from the primary researcher and clinicians involved in the study. The questions were partially developed by the primary investigators and partially left flexible to evolve naturally. Content analysis was used to analyze the qualitative data and deduce patterns and themes. This research design supports Tusaie and Dyer's (2004) assertion that the quantitative scale used to assess resilience should be specific to the population and scope of resilience being studied and should include a qualitative assessment to highlight the personalized dynamics of resilience (Tusaie & Dyer, 2004).

Because this was a pilot study, which is defined as "a small scale test of the methods and procedures to be used on a large scale" (Porta, 2008, p. 320), we also wanted to learn from the overall research process. The study methodology was initiated by a practitioner in the college counseling center, based on what was feasible at the time. However, the methodology should be viewed as a first attempt, and a means of revealing some logistics issues, in order to inform feasibility and identify modifications needed in a larger, secondary study (Hazzi & Maldaon, 2014).

Procedures

All participants completed the RSYA and CCAPS a week before participating in any intervention. The counseling and AT groups were conducted once a week for ten weeks and were 90 minutes in length. The curriculum and structure for both the AT and the counseling groups were based on the treatment needs of students identified through the initial counseling assessment conducted at intake. Both groups focused on clinical factors identified through the subcategories of the RSYA, including increasing sense of mastery and sense of relatedness, and decreasing emotional reactivity. Interpersonal skills and processes like effective communication, problem solving, conflict resolution and emotional regulation were addressed in both groups; however, in the AT groups, these topics were explored experientially (Alvarez et al., 2021). Additionally, between groups eight and nine, the AT group participated in a 3-day, 2-night backpacking trip to a state park located three hours from the university.

Clinicians started both the counseling group and AT group sessions with a guided meditation as a mindfulness activity that allowed participants to be

present and frontload the theme for the day. In both groups, clients shared current mood and energy levels, and after week one, the clients described their experience transferring the skills developed in the previous group into aspects of their lives throughout the week.

In the counseling groups, talk therapy was utilized each week to process client issues; whereas clinicians in the AT groups utilized activities that followed Kolb's (1984) model of experiential learning including frontloading, doing, and then debriefing. As is common in adventure therapy, metaphors sometimes happened spontaneously and the debriefing focused on transfer of learning to other areas of the clients' lives (Alvarez et al., 2021). The debrief phase of the experiential learning cycle included reflection ("What?"), generalization ("So what?"), and transfer of learning ("Now what?") (Greenaway, 2007). Transference of the skills to daily life, and processing the emotions associated with trying a new skill or behavior were priorities for the AT group.

However, in both the counseling and AT groups, clients wrote one thought or behavior that surfaced during the group that they wanted to change to help them with their therapeutic goals. Participants also wrote down the barriers associated with following through with cognitive or behavioral change and discussed the courage it takes to make changes that may end in failure. The main difference, however, was that when the AT participants reported back on what they were learning, they were given a chance to practice the skill through a new activity or initiative and receive feedback from other group members. The skills were taught in an intentional progression, and participants were assessed to determine mastery of the skills prior to moving forward; this use of scaffolding is a key aspect of adventure therapy programming (Alvarez et al., 2021). Activities included icebreakers, games and an explanation of group norms provided by clinicians, and then those developed by the group. All groups ended with an appreciation activity.

The goals of these experiential activities were to build a trusting and emotionally safe environment and enhance effective communication. AT clients were assessed on their communication skills through experiential, problem-solving activities. The debrief of these activities focused on communication that led to successful completion of the task and ineffective communication that contributed to challenges or negative outcomes. Participants shared what communication was helpful and were invited to use these skills in another experiential activity. Clients provided feedback on the success and failures of the activities and clinicians clarified effective communication skills, many of which the clients already mentioned.

These effective communication skills were then used to front load a trust walk activity (Rhonke & Butler, 1995). In the trust walk, participants paired up, and one person wore a blindfold. The sighted partner led their blindfolded partner on the trail. The participants stopped halfway, debriefed the effectiveness of their communication, and switched partners. At the end of the group, participants were asked to think of one communication skill each one wanted to work on in the next week, and barriers that could keep them from following through. Throughout all of the experiential group sessions, AT participants were introduced to communication, conflict resolution, problem-solving, decision making, developing personal values, leadership, feedback and building relationships in an emotionally safe environment—in order to prepare them to work together on the backpacking trip.

AT clients used the skills they had practiced in the experiential groups to plan and execute their backpacking trip. Participants chose their route and menu for the trip and worked together in leadership pairs to navigate, set up camp, and provide each other with emotional support. Clinicians provided encouragement and facilitated an evening campfire session for clients to share about their lives. The second morning, clients had a solo experience. In this solo, each client was placed in a secluded spot for two hours. Clients were asked to spend this time in reflection. At the end of the trip, clients were provided another opportunity for reflective journaling before reentering their lives outside of the group.

Quantitative Results

Treatment Completion Rates

Due to the group counseling (GC) having a low participation rate of 60% and having $n = 2$ for participants who attended at least six of the ten groups, this group was removed from the analysis. This left us with the comparison group which received no therapy (NG, $n = 7$) and the Adventure Therapy group (AT, $n = 6$). Though this level of attrition jumps out as a glaring limitation of the study, it is common to have varying success with therapy groups in the collegiate setting (Denton et al., 2017). However, in this study, the AT group had an 86% treatment completion rate, compared to the CG, which only had a 50% treatment completion rate, which makes AT a college counseling intervention worth considering in and of itself.

Changes in Resilience

Due to the low sample size, statistical significance was not analyzed. To look at change across time for two groups (NG, $n = 7$, and AT, $n = 6$), we compared the pretest and posttest mean scores and standardized deviation on the three

subscales of the RSYA (Sense of Mastery, Sense of Relatedness and Emotional Reactivity), in order to calculate the standardized mean difference effect sizes. Using standardized mean effect sizes is appropriate in this study, as it does not rely on sample size, yet is understood as a measure of clinically significant change (Sullivan et al., 2012). Table 1 shows the standardized mean difference effect sizes for Sense of Mastery, Sense of Relatedness, and Emotional Reactivity for both the AT group and the NG comparison group. Large effect sizes were found for the AT group for both a Sense of Mastery and a Sense of Relatedness compared to a medium and no effect for the comparison group. Both groups reported medium effect sizes for Emotional Reactivity, suggesting no difference between these groups.

Table 1

Pre and Post Changes in Resiliency between Adventure Therapy and Comparison Groups

Resiliency Scale	Mean	SD	Cohen's d	Effect Size
Sense of Mastery				
AT pre	14.33	2.2		
AT post	16.55	2.3	1.01	Large
NG pre	15.14	3.2		
NG post	16.24	2.2	0.34	Medium
Sense of Relatedness				
AT pre	13.13	2.2		
AT post	15.90	2.6	1.26	Large
NG pre	15.18	2.5		
NG post	15.11	2.3	-0.03	No Effect

Emotional Reactivity				
AT pre	8.90	4.7		
AT post	5.89	3.1	0.64	Medium
NG pre	7.48	2.4		
NG post	5.81	1.9	0.69	Medium

Changes in Depression, Anxiety and Distress

Again, due to the low sample size, statistical significance was not analyzed. To look at change across time for two groups, we compared the pretest and CCAPS: Academic Distress; Anxiety; Depression; Social Anxiety; Overall Distress, to calculate the standardized mean difference effect sizes (see Table 2). Large effect sizes were found for all measures of the CCAPS for the AT group and small or medium effect sizes for the comparison groups.

Table 2

Counseling Center Assessment of Psychological Symptoms from Pre to Posttest for Adventure Therapy and Comparison Groups

Psychological Symptoms	Mean	SD	Cohen's d	Effect Size
Academic Distress				
AT pre	1.74	1.01		
AT post	0.95	0.52	.78	Large
NG pre	1.72	1.01		
NG post	1.61	0.58	.11	Small
Anxiety				
AT pre	1.93	1.01		
AT post	1.06	0.57	.86	Large

Psychological Symptoms	Mean	SD	Cohen's d	Effect Size
NG pre	1.38	1.19		
NG post	1.19	0.78	.16	Small
Depression				
AT pre	1.50	0.76		
AT post	0.91	0.48	.78	Large
NG pre	1.14	0.80		
NG post	0.69	0.53	.56	Medium
Social Anxiety				
AT pre	2.13	0.90		
AT post	1.32	0.62	.90	Large
NG pre	1.60	0.62		
NG post	1.34	0.21	.41	Medium
Overall Distress				
AT pre	1.68	0.74		
AT post	0.94	0.58	1.00	Large
NG pre	1.43	0.94		
NG post	0.88	0.59	0.59	Medium

Qualitative Results

The one-hour focus group with the six AT group participants at four weeks post-treatment gave clients a chance to reflect on their improved functioning together (Follette & Callahan, 1996). Focus group data was recorded and transcribed in order to be coded and thematically analyzed via content analysis (Elo & Kyngäs, 2008). Inductive coding was used to read and analyze the textual data to develop concepts and themes through interpretations of client experiences of the adventure therapy intervention (Corbin & Strauss, 2015). The lead author, who was also the clinician on the program, not only hired an external facilitator to conduct the focus groups, but also requested that the other two researchers analyze the qualitative data to avoid bias she might have had from her experiences leading the AT groups. Themes that came out of this focus group were distress tolerance, trust and relationship building, stress reduction through nature, and reduction in mental health stigma.

Distress Tolerance

Distress tolerance, often defined as the ability to tolerate negative emotional states, is a critical component for building resilience and coping in the therapy process. Research shows that individuals who are unable to withstand negative emotions are more likely to use maladaptive emotional regulation strategies (Jeffries et al., 2016), increasing the need for interventions like adventure therapy that can increase participants' distress tolerance skills. Because of the physical and emotional challenges of the AT group activities, most AT participants talked about overcoming difficulty. Enduring in the face of challenge and not giving up was as impactful as the challenge itself. One participant said that they overcame "hard days by thinking that the hard will be over soon. I can endure this." Another said, "I am more able to push myself to try new things after this group because I know the positive outcomes will outweigh the uncomfortableness at first." Likewise, increasing levels of distress tolerance seemed to help participants experience greater motivation and optimism. One participant reflected on the satisfaction that came from "working hard to get what you want." This translated into the academic environment and led to feelings of self-confidence and self-worth. A participant noted, "Before, I thought I wasn't good enough for the class, so the fact that I got an A on it, and the comments that my professors wrote were like…I was like, wow. I actually did something that I am proud of."

Trust and Relationship Building

AT participants were given opportunities to overcome challenges, build trust, and learn to depend on each other. They learned that they can make friends and

trust people that they may not have been given the opportunity to in a different setting. One client stated that the adventure therapy group "opens me up to like the idea of being friends with more people". Another commented, "Before I didn't trust anyone, not even my family sometimes, and after we talked, I was like…whoa, I can actually trust these people." They also acknowledged the importance of trusting relationships in the group: "I learned that it's so much easier to start something when you know there's people that serves as a support group, so whatever happens, there's always somewhere to fall into."

Stress Reduction through Mindfulness in Nature

Research shows strong relationships among mindfulness, connection to nature, and wellbeing (Norton & Peyton, 2017; Wolsko & Lindberg, 2013). It was no different in this study; intentionally starting each group with a mindfulness activity introduced clients to the healing powers of nature and AT participants noted that it helped them feel a greater sense of wellbeing (Mitten, 2009). They learned how to ground themselves and be present and engaged in the group. Focus group members discussed how they continued to use nature and being outside to decrease stress and increase their moods. One client stated, "Being able to be outside just automatically lifts my mood." Another one mentioned, "Taking the time to do the things…taking care of yourself with meditation and that type of thing before your anxiety gets overwhelming." Another client called the outdoors her "happy place." One month after the group, a client stated, "I will just go sit outside for a few hours." Multiple clients mentioned the freedom they felt from being asked to turn their phones off for the weekend backpacking trip. This was one of the self-awareness moments for many. They did not expect to feel freedom from turning it off, and now some of them do it on purpose to "turn everything off." These findings reaffirm the earlier work of van den Bosch & Bird (2018), who found that being in nature helps prevent stress and promote positive mental health.

Reduced Stigma

The focus group data showed a decrease in shame about receiving help through counseling, which indicated that stigma is present, but that adventure therapy may help to reduce that stigma. One student's response to having the last group at the climbing wall during open hours was, 'I wasn't embarrassed about it, and I would have been before." Another student said, "When you do it out in the open, it normalizes it for other people." One AT client who was also receiving individual counseling said, "In the wilderness, it feels more natural…so many good things came out of going to adventure group therapy."

Discussion

The first important component of this study seems to be the level of engagement in the AT group. The participants in the Adventure Therapy group showed up, developed a community, and relied on each other throughout the course of the 10 weeks. This is supported by the 99% attendance rate, the increase in sense of relatedness for these students, and the qualitative evidence of trust and relationship building. The attrition for the CG group is not rare for groups in college counseling centers. While counseling centers at higher education institutions create programs and groups to help with the influx of students seeking help, they are often not well-attended; therefore, consideration of the groups and programs that students attend is warranted (Parcover et al., 2006). This is especially important as there are several negative ramifications associated with not getting treatment for a mental health disorder (Sadock & Sadock, 2011). This increases the urgency for maintaining and completing treatment; however, shame and stigma can be a barrier. Though the focus group data showed that AT can reduce stigma and shame through a more normative and less clinical treatment environment, further research is needed to understand why this might be.

In terms of clinically relevant outcomes associated with resilience, participating in the AT intervention was impactful in several areas that may help students persist through college and meet their academic goals. Increases in self-reports on Sense of Mastery and Relatedness were associated with large effect sizes for the AT participants. In addition, large effect sizes were reported for decreases in depression, generalized anxiety, social anxiety, and academic and overall distress. Given the prevalence of anxiety and depression on college campuses (Babb, 2022; Lindsay et al., 2009), this study opens the discussion for college counseling centers to consider the implementation and further evaluation of adventure therapy groups to promote resilience and positive mental health outcomes.

Finally, the focus group data showed that students who participated in the AT group experienced stress reduction through mindfulness in nature, but even more importantly, students reported that they were still using this coping skill of connecting with nature four weeks after the AT intervention as well as other coping strategies learned. Helping students deepen their connection to nature can be a powerful way for them to maintain their own wellbeing even after they have completed the formal therapy process. This can be a life-long asset they can rely on to manage stress, promote mindfulness, and stay physically and emotionally healthy across the lifespan (Hartig et al., 2011)

While this study does not theorize about a specific theory of change, we wonder if a nature-based intervention that provides students with experiential opportunities to develop coping skills and social support may be a promising way to enhance resilience in college students. In doing so, AT transcends the notion of simply reducing clinical symptoms and instead focuses on personal growth and development, wellness, and social support (Smith & Koltz, 2015). Research shows that positive peer group connections in the therapy setting are critical to wellbeing (Steinebach et al., 2013). Not only do they increase rates of treatment completion and outcomes (Sugarman et al., 2016), but these relationships also enhance the psychosocial development of the group members (Norton & Tucker, 2012). Likewise, the continued development of this AT model on college campuses could open access to students who would not seek services inside the counseling center, and those without the means to participate in private counseling services and/or adventure-based therapy.

Learning from Limitations

When conducting a pilot study, it is critical to both acknowledge and learn from the limitations that arose in the study due to logistics, attrition, lack of fidelity and training, etc. One of the most obvious limitations of this pilot study is the small sample size and quasi-experimental design. Due to the low sample size, researchers knew that finding statistical significance was not possible, and chose to focus instead on clinical significance and effect sizes. Still, the attrition rate for the study was a limitation because the researchers were unable to compare AT with traditional group therapy and had to rely merely on a comparison with a "no treatment" group, thereby not controlling for moderating variables. Interestingly, we still see some changes in the no treatment group over time, which may hint that college is a developmental process in and of itself; however, when we look at the differences between being a college student who does not receive any mental health treatment versus being a college student who receives adventure therapy, the differences in effect provide preliminary support for this type of intervention and intervention in general.

It is also important to note that students in the AT group reported lower levels of resilience and higher levels of anxiety and depression at intake than the no treatment group (NG). Hence, in order to be able to generalize findings that show the benefit of adventure therapy in college counseling settings, future studies require larger sample sizes, more rigorous research designs, and should move towards more of a truly experimental design if possible.

Another limitation of this study was the sole reliance on pre-post program analysis. Though clinical progress was monitored throughout the program by the

clinician running the AT groups, formal progress monitoring tools and surveys were not used due to a lack of time and training. However, current AT research documents the importance of progress monitoring for ensuring client voice, preference, and satisfaction in the treatment process (Dobud et al., 2020). Future studies should incorporate progress monitoring data in order to better understand clients' experiences before, during, and after the intervention.

Finally, participant demographics of age, gender, and race should be more fully considered both in terms of clinical outcomes, but also in terms of the client's engagement and satisfaction with treatment. This is especially important to counteract the lack of diversity in the outdoor field and give a voice to underrepresented clients.

Implications and Next Steps

Adventure therapy provides a strengths-based, therapeutic modality with the potential to support college students in the areas of mastery, relatedness, and emotional self-regulation. Adventure therapy is not a new treatment modality; however, it is new to most college counseling centers. This pilot study was conducted to begin a conversation on how to implement adventure therapy with college students as part of on-campus counseling services. Many institutes of higher education (IHE's) are equipped with counseling services and outdoor recreation services to develop this type of therapeutic programming, and this pilot study provides a preliminary rationale for doing so.

Prior case study research with young adults has shown that outdoor therapy "can provide a safe, reflective environment where clients can engage in character enhancing activities that promote insight and systemic change" (Roberts, 2015, p. 53). However, this research was based on residential wilderness therapy programs. Though college students may need residential models of wilderness therapy for more acute mental health issues, it is important to create access to more mental health services on campus and in the community. The findings from this pilot study suggest that adventure therapy may be a useful and engaging intervention to promote treatment completion and outcomes within the college setting, especially once additional research is conducted in this area.

IHE's are set up to manage both the physical and emotional risks of implementing an adventure therapy program on college campuses. They can provide professional clinicians and outdoor instructors; whereas it is difficult for private practice or even community-based programs to provide all of the equipment, insurance, and logistics behind developing an adventure therapy group. Though community-based AT programs may become available to treat specific mental diagnoses for young adult clients, many are reluctant to seek and

attend counseling services due to the perceived stigma (Vogel et al., 2007). For this reason, this study introduced a model of adventure therapy that can be implemented in a higher education setting to reduce stigma and address the growing number of unmet mental health needs among college students. This study paves the way for other universities to develop similar models that may help increase resilience in college students. A larger study of this kind could further examine the impact of AT on promoting resilience among college students, but it could also help to develop an evidence-based curriculum that could be tested for fidelity and effectiveness.

Declaration of Interest

There is no conflict of interest.

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