

Resilience, Peer Relationships, and Confidence: Do Girls' Programs Promote Positive Change?

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Abstract

The purpose of this study was to analyze whether girls' levels of resilience increased after participation in a variety of programs. In this study, 711 girls participated in one of four program types: adventure education ($n = 71$), experiential education ($n = 164$), traditional camp setting ($n = 228$), and mixed camp setting ($n = 248$). The study compared outcomes across program type to examine whether specific program types were more effective at promoting resilience in girls. The researchers analyzed data using 2 (within subjects; Time: Time 1 vs. Time 2) $\times$ 4 (between subjects; Program Type: Adventure Program, Experiential Program, Traditional Camp, and Mixed Camp Program) mixed model ANOVAs. Results indicate small yet significant changes in resilience for adolescent girls in all program settings. However, the degree of difference appears to be influenced by program type.

KEYWORDS: resilience; girls; camps; experiential and adventure education; confidence; peer relationships

Historically, research on girls' development has described a variety of challenges girls face during adolescence. In the early 1990s, Brown and Gilligan (1992) and Gilligan (1991) described a loss of self and voice for girls. During adolescence, girls begin to "lose their vitality, their resilience, their immunity to depression, their sense of themselves and their character" (Brown & Gilligan, 1992, p. 2). In the early 21st century, much progress had been made, but concerns about equal pay, career advancement (Worrell & Goodheart, 2006), and the oversexualization of girlhood persists (Lamb & Brown, 2006). Girls report pressure to please others and concerns about their body and appearance (Girls Incorporated, 2006). More recently, reports have shared similar and some additional challenges for girls. These include low self-esteem and body image; increased poverty rates and homelessness; physical violence (rape and sexual assault); bullying or aggression; lack of leadership opportunities; feelings of depression and suicide; increased obesity; cyberbullying; and treatment needed for emotional, behavioral, or developmental issues (Girl Scouts of the USA, 2013, 2017).

One way to help girls navigate these challenges is to provide them opportunities to gain resilience skills. Research on recreation programming has shown beneficial outcomes for supporting youth resilience (Cooper, Estes, & Allen, 2004). Attending camp has been linked to supporting adolescent resilience (Haber, 2014; Ungar, 2012), and a small body of research has examined the impact of adventure education programs on girls' resilience (Whittington & Budbill, 2013; Whittington, Aspelmeier, & Budbill, 2016; Whittington, Budbill, & Aspelmeier, 2013). Research specific to girls' resilience is limited; therefore, this study was guided by three research questions: (a) Did girls' self-reported resilience increase after participating in an adventure, experiential, traditional, or mixed camp program, compared to preprogram reports? (b) Did the self-reported levels of resilience differ for girls participating in either an adventure, experiential, traditional, or mixed-camp program? (c) Were patterns of change in resilience consistent across different programs?

Literature Review

Defining Program Type

Separating programs based on program type is difficult, as there is overlap in terminology, program style, and practices. For the purposes of this study, the authors and practitioners of each program determined whether their program fell into one of four categories: programs that define themselves as adventure education (AE), programs that define themselves as experiential education (EE), camps that use a traditional model, and camps that combine traditional programming with elements of AE and/or EE programming (mixed camp). This section briefly describes each type.

Adventure education. Although AE is defined in a variety of ways that differ in structure and purpose, these programs typically share a common set of characteristics including a novel setting and/or experience, small group sizes, problem solving and decision making, physically and mentally challenging tasks, and guidance from an adult directing them toward a specific goal (Dean & Harre, 2013; Sibthorp & Morgan, 2011). More current definitions include spending time in pristine natural environments, separation from "normal life," social supports, and challenging experiences (D'Amanto & Krasny, 2011; Overholt & Ewert, 2015). Historically, AE programs consisted of an expedition-style program lasting for several weeks. AE programs now include shorter durations while including components of expedition-style programs that promote youth development (Sibthorp & Morgan, 2011).

Experiential education. There is little consensus on what EE is and the term has been conflated with AE, outdoor education, or challenge education (Roberts, 2012). EE has been described as learning by doing (Roberts, 2012) and has been used simultaneously with experiential learning. EE differs from experiential learning in that EE is a philosophy that includes direct

experience and focused reflection that leads to learning and growth (Association for Experiential Education, n.d.). Furthermore, EE may include the following characteristics: mixture of content and process, absence from judgment, purposeful endeavor, multiple learning styles, reflection, emotional investment, examination of values, meaningful relationships, and learning outside of one's comfort zone (Chapman, McPhee, & Proudman, 1992). EE is delivered in many ways (e.g., wilderness programs, internships, service learning, academic programs), yet shares similar features with experiential learning such as active learning, student directed, and direct experiences (Carver, 1996; Lindsay & Ewert, 1999).

Traditional camp. Meier and Mitchell (2003) stated the characteristics that make up organized camping include children typically between the ages of 7 and 16; a community of people living together in an outdoor setting that is simple and rustic; the group is organized, democratic, and supervised by trained staff; a broad range of activities are offered that are natural to the camp environment (i.e., hiking, nature appreciation); free time for meditating and dreaming; and regular hours for rest and sleep.

Mixed camp. Because camps often provide a variety of styles, the authors define a mixed camp setting as a traditional camp with elements of EE or AE programming such as wilderness trips (i.e., overnight backpacking/canoeing trips), adventure activities (i.e., ropes courses), and/or EE activities (i.e., environmental education).

Resilience

Defining resilience and its application is cumbersome, as many definitions exist (Overholt & Ewert, 2015). Ahern (2006) studied several articles on adolescent resilience and determined that the concept is dynamic and changes over time. Of the articles reviewed, one common factor included "some type of risk or risks in the adolescent's life that triggers a protective mechanism" (p. 181). Simply stated resilience is "the ability to react to adversity and challenge in an adaptive and productive way" (Hayhurst, Hunter, Kafka, & Boyes, 2015, p. 40). Resilience skills are a component of healthy development for youth (Ewert & Yoshino, 2011), and developing protective coping skills allows youth to deal with future adversity (Hayhurst et al., 2015).

Protective factors are the specific strengths that people possess that allow them to combat adversity (Short & Russell-Mayhew, 2009). Protective factors associated with resilience include an extensive array of individual characteristics and external supports. Individual assets include (but are not limited to) cognitive skills, self-regulation, having a talent or feelings of accomplishment, hopefulness, independence, self-efficacy, self-worth, humor, creativity, initiative, religious faith/affiliation or spirituality (Siqueira & Diaz, 2004), optimism, and problem solving (Short & Russell-Mayhew, 2009). External factors include environmental and social factors that support positive youth development such as healthy school environments; positive relationships with family members, peers, older adults, and community organizations; adequate food and lack of anemia; socioeconomic advantages; access to health care; and safe communities (Siqueira & Diaz, 2004).

Although many factors are external to the individual and harder to develop, substantial support has been offered that youth programs can foster resilience characteristics through effective programming (Cooper et al., 2004). The fields of AE, EE, and the youth camping industry have shown evidence that program participation supports youth resilience.

Adventure education programs. Benefits and outcomes of AE programs include increased perceived competence and self-efficacy, improved interpersonal skills, and identity development. Long-term outcomes include increased self-confidence, improvements in leadership skills, academic gains, ability to work as a team member, greater appreciation of nature, becoming more adventuresome, and the ability to function effectively under difficult circumstances (Benard & Marshall, 2001; Sibthorp & Morgan, 2011).

Other studies have directly evaluated the impact that AE programs have on resilience. Hayhurst et al. (2015), for example, found that college students gained resilience and other psychosocial factors and maintained increased resilience 5 months after participating in a 10-day development voyage. Overholt and Ewert (2015) examined the experiences of college students' participation in an AE program compared to a leisure or leadership class. They found increased resilience for women in the AE program and leadership class, whereas participation in the general leisure class resulted in decreased resilience. The results for men were opposite with increased resilience after participation in the general leisure class and decreased resilience after participation in the AE and leadership class. Though the sample is small, males and females may develop resilience differently, and the effects of participation may have differed based on gender (Overholt & Ewert, 2015). In another study, Ewert and Yoshino (2011) found that "confidence may serve as a precursor effect on changing levels of resilience" (p. 45). The theme that emerged through qualitative interviews was confidence. The authors also found significant improvement in resilience preparticipation and postparticipation in a short-term adventure-based program.

Several studies have examined the experiences of girls in AE programs and results indicate improved sense of self, problem solving, achievement, and goal setting (Schmalz, Kerstetter, & Kleiber, 2011); communication, teamwork, leadership, and perseverance (Whittington, 2011); courage (Whittington & Nixon Mack, 2010); and increased resilience in girls (Whittington & Budbill, 2013; Whittington et al., 2016; Whittington et al., 2013).

Outcomes of experiential programs. Beightol, Jeverson, Gray, Carter, and Gass (2008) found that an EE anti-bullying program enhanced levels of goals and aspirations and increased self-efficacy in the treatment group between pretreatment and a follow-up at 4 months. When comparing gender, Beightol et al. found that female students had significant increases in goals and aspirations and higher resilience scores compared to males. Another study measured the outcomes of Girls on the Run, a 12-week after-school curriculum that focuses on developing life skills and training for a noncompetitive 5K run (Galeotti, 2015). Practices offered girls opportunities to gain life skills and leadership, to foster resilience, to instill confidence, and to gain an appreciation for health and fitness. Results indicate that the girls increased self-esteem, lived healthier lifestyles, gained a greater sense of self-awareness, developed healthier relationships, improved confidence, and developed a more positive attitude after their participation (Galeotti, 2015).

Outcomes of camp. A broad body of research supports the role of camp experiences in promoting positive youth development (Bialeschki, Henderson, & James, 2007; Garst, Browne, & Bialeschki, 2011). Factors that promote positive youth development at camp include supportive relationships, safety, youth involvement, skill development, and relationships between youth and adult staff (Garst et al., 2011). Outcomes of participating in camp include increases in leadership, sense of adventure and exploration, self-esteem, independence, positive self-constructs, the quality of social relationships, skill development, environmental awareness, and spiritual connections (Bialeschki et al., 2007; Garst et al., 2011). A postassessment after 6 months indicated that participants maintained these gains after the camp experience (Bialeschki et al., 2007).

Research indicates that camp experiences can provide youth with an opportunity to gain resilience skills (Allen, Cox, & Cooper, 2006; Haber, 2014; Ungar, 2012). Ungar (2012) argued that camps promote resilience in youth by shaping the environment around them, fostering new relationships with peers and trusted adults, helping youth feel in control of their lives, supporting young people as they develop physically, offering opportunities to feel like they belong, and learning more about their culture. Merryman, Mezei, Bush, and Weinstein (2012) used a quasi-experimental design to measure the effects of summer camp experiences on youth resilience. When comparing youth who attended camp to those who did not, they found at-risk participants who attended camp had greater gains in social skills and positive values.

In addition, researchers have indicated that benefits-based recreation programs can positively influence the development of resilience skills in youth (Allen et al., 2006; Cooper et al., 2004; Hurtes, Allen, Stevens, & Lee, 2000). Benefits-based programming is outcome oriented and focused on identifying benefits and structuring the program to meet those benefits. In one study, Allen et al. (2006) compared the resilience scores of 9- to 12-year-olds who participated in one of two day camps. The benefits-based program was more effective than the traditional camp setting in building resiliency.

Historically, girls' camp were originally developed to liberate girls from domestic life and offer them opportunities for physical development (Miranda & Yerkes, 1996). Over time girls' camps were seen as an opportunity to develop strength, independence, skills, self-respect, self-sufficiency, self-reliance, and courage (Miller, 2007). To date, a few studies have been conducted on all-female camp experiences (i.e., Briggs, Staton, & Gilligan, 2009; Garst & Ozier, 2015; Scharff, 2008; Weavers et al., 2011; Whittington, Garst, Gagnon, & Baughman, 2017), but the research is limited and does not focus on how camp does or does not support resilience skills.

Method

Participants

In this study, 711 girls participated in one of four program types: AE ($n = 91$), EE ($n = 164$), traditional camp setting ($n = 228$), and mixed camp setting ($n = 264$). The study included eight programs located throughout the United States (Massachusetts, New York, North Carolina, Vermont, Rhode Island, Colorado, Michigan, and Missouri). The age of the girls ranged from 10 to 17 with a mean age of 12.03 years. Length of the programs varied between 3 and 49 days with an average of 17.7 days of participation. All programs were single gender, institutional review board approval was granted, and parent consent and child assent were obtained.

Programs were recruited in two ways: (1) Camps in this study were recruited in collaboration with the American Camp Association, which provided a randomized list of all-girls camps. Letters describing the study were sent to administrative staff, and programs voluntarily agreed to participate. Of the camps that agreed to participate, program directors classified their programs as a traditional camp or a mixed camp program (see description in the literature review). (2) Girl-serving organizations that classified themselves as AE or EE were also recruited. Again, letters describing the study were sent to administrative staff, and programs voluntarily agreed to participate.

To measure change in adolescent girls' resilience, the researchers utilized the Adolescent Girls' Resilience Scale (AGRS; Aspelmeier, Whittington, & Budbill, 2015; Whittington et al., 2015). The AGRS measures factors related to girls' resilience that are most amenable to change after participation in short-term intervention program (www.agrscale.com). The AGRS consists of 34 items that form two factors (Positive Peer Relationships and Confidence), which can be used either in a cross-sectional manner (at a single time point) or longitudinally (at multiple time points; see Table 1 for AGRS questions).

The Positive Peer Relationships factor reflects the degree to which girls feel socially connected to and supported by their female peers. This factor is conceptually related to Prince-Embury's (2006) concept of the sense of relatedness, which includes facets such as trust, perceived access to support, comfort with others, and tolerance of differences. Research on girls' development has stated that girls' resilience is strengthened when they have positive relationships with others (Debold, Brown, Weseen, & Brookins, 2006; Jordan, 2012) and that fostering these positive relationships supports girls' resilience.

Table 1*34-Item Adolescent Girls' Resilience Scale*

-
1. I am courageous
 2. I can think of more than one way to solve a problem
 3. I don't give up, even when things are hard
 4. I deal with stress in a positive way
 5. I do not give up easily
 6. I am not afraid of making mistakes
 7. I am brave even when I am afraid
 8. I am comfortable facing life's challenges
 9. I stay calm in stressful situations
 10. I keep my cool when things don't go as planned
 11. I am confident in my abilities to get things done
 12. I know how to get what I need
 13. I live up to my potential
 14. I am motivated to set and accomplish goals for myself
 15. I make good decisions
 16. When I make a plan I follow through with it
 17. I can speak up for what I need and want
 18. I perform well at many things
 19. I am good at the things I do
 20. I am good at figuring things out
 21. I can make things happen
 22. I am good at solving problems
 23. It is okay to have conflict with friends
 24. I don't have many friends who are girls (reverse-ordered)
 25. I enjoy spending time with other girls
 26. I can easily make friends
 27. I don't get along with other girls
 28. I tell my friend when I think they are being unfair
 29. Other girls are supportive of me
 30. I have experienced a supportive community of other girls
 31. I can trust other girls
 32. It is hard to make friends with other girls
 33. Girls generally do not like me (reverse-ordered)
 34. I get along with other girls
-

Note. Responses were given on a 5-point Likert scale of *strongly disagree*, *disagree*, *neither*, *agree*, and *strongly agree*.

The Confidence factor incorporates self-efficacy and approach to challenge and assesses girls’ beliefs about the degree to which they are able to solve problems, cope with stress, be brave and courageous, and persist when things get hard. Self-efficacy involves perceptions of one’s own capabilities (Bandura, 2005). The AGRS assesses girls’ general sense of being capable and aspects of what Bandura (2005) calls “proficient performance” (p. 308), which reflect the degree to which girls believe themselves to possess the ability to set goals and the motivation to accomplish them. Approach to challenge involves adapting to challenge and stress in positive ways.

The AGRS demonstrates high reliability for similar samples (.87 or higher) and shows convergent and discriminant validity with other measures of resilience (Aspelmeier et al., 2015). Program staff administered the AGRS on the first and last day of the girls’ participation in each program. Table 2 presents descriptive data from this study, including scale intercorrelations (below the diagonal) and reliability coefficients (Cronbach’s alphas; on the diagonal). In the sample, all reliability coefficients were .83 or higher. Results were compiled in SPSS (v. 22) for data storage and analysis.

Table 2
Correlations and Descriptive Data for AGRS Scales

Factor name and time	1	2	3	4	5	6
Total Resilience – Time 1	.87					
Total Resilience – Time 2	.74*** (709)	.91				
Positive Peer Relationships – Time 1	.85*** (853)	.66*** (708)	.85			
Positive Peer Relationships – Time 2	.66*** (708)	.86*** (806)	.75*** (708)	.87		
Confidence – Time 1	.86*** (854)	.60*** (709)	.47*** (855)	.37*** (709)	.83	
Confidence – Time 2	.64*** (709)	.88*** (807)	.42*** (709)	.54*** (807)	.67*** (710)	.89
<i>M</i>	4.05	4.17	4.08	4.19	4.03	4.15
<i>SD</i>	(.4721)	(.5000)	(.6402)	(.6385)	(.4841)	(.5175)
<i>N</i>	856	809	855	808	856	809

Note. Diagonal represents Cronbach’s alpha. Degrees of freedom appear in parentheses below zero-order correlations.

****p* ≤ .001.

Statistical Methods

The researchers tested the three research questions using 2 (within subjects; Time: Time 1 vs. Time 2) × 4 (between subjects; Program Type: Adventure Program, Experiential Program, Traditional Camp, and Mixed Program) mixed model ANOVAs. The first research question asked whether girls’ self-reported resilience increased after participating in programs, compared to preprogram reports, and the researchers tested this by evaluating the main effect for time. The second research question asked whether the self-reported levels of resilience differed for girls participating in adventure, experiential, traditional camp, or mixed-camp programs, and the researchers tested this by evaluating the main effect of program type. The third research question asked whether patterns of change in resilience are consistent across different programs,

and the researchers tested this by evaluating the interaction between time and program type. The effect size for each analysis was reported as a generalized eta-squared (cf. Bakemen, 2005). The generalized formula addresses issues of effect size inflation that typically occur in repeated measures analyses and allows for more meaningful comparison with effects obtained in non-repeated designs. The generalized eta-squared represents the proportion of variance in the outcome accounted for by any given predictor (i.e., time, program type, or their interaction). Based on general suggestions for evaluating effect sizes in an ANOVA framework (e.g., Cohen, 1988), the generalized eta-squared was evaluated as small effects = .01, medium effects = .06, and large effects = .13.

Results

Significant increases in overall resilience were observed over time, $F(1, 707) = 92.07, p < .001$, $\eta^2_{\text{Generalized}} = .02$. Across all programs, girls reported significantly higher levels of resilience after participating in the program ($M = 4.17, SD = .5036$) than they did before participating ($M = 4.05, SD = .4705$), although the overall size of the changes was modest. Differences in resilience scores were also observed across camps, $F(3, 707) = 3.40, p = .018$, $\eta^2_{\text{Generalized}} = .01$. Prior to their experience, girls who participated in EE programs reported significantly lower levels of resilience ($M = 4.02, SE = .035$) than girls who participated in AE ($M = 4.21, SE = .054$), traditional ($M = 4.13, SE = .030$), or mixed ($M = 4.11, SE = .029$) programs. These main effects were qualified by a significant interaction between time and program type, $F(3, 707) = 3.72, p = .011$, $\eta^2_{\text{Generalized}} = .002$. Though small, significant differences were observed across programs in the size of the increase in resilience girls reported (see Figure 1). The greatest increase in resilience was observed among girls who participated in adventure programs ($\eta^2_{\text{Generalized}} = .04$), whereas the smallest increases were observed among girls who participated in traditional programs ($\eta^2_{\text{Generalized}} = .005$). Girls who participated in experiential and mixed programs showed modest increases in reported levels of resilience ($\eta^2_{\text{Generalized}} = .02$ for both programs).

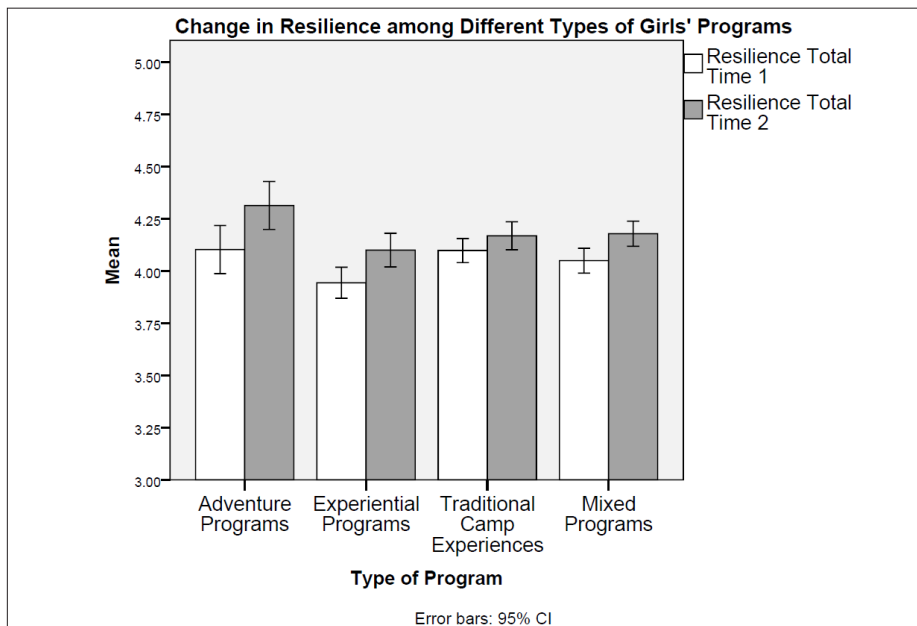


Figure 1. Overall change in resilience across four girls' programs.

To provide a complete picture of the patterns of change in resilience, the researchers conducted analyses separately on each resilience factor: Positive Peer Relationships and Confidence. With respect to the Positive Peer Relationships factor, though both the main effects for time and program type were significant, they were qualified by a significant interaction (see Table 2). The researchers conducted simple effect analyses to fully probe the interaction (see Table 3). Significant change occurred over time in some programs. The pattern of results shows that girls who participated in AE, EE, and mixed programs reported that their relationships with other girls were significantly more enjoyable and supportive after participating in programs (Table 4). Though the size of the changes were relatively modest, the reports of girls participating in traditional camp settings did not show any significant change in how they feel about their relationships with other girls.

Table 3

ANOVA Table for Change in Positive Peer Relationships Scores Over Time Across Camp Type

Effect	<i>F</i>	<i>df</i>	<i>p</i>	$\eta^2_{\text{Generalized}}$
Time 1 vs. Time 2	53.72	1, 705	> .001	.009
Program Type	7.14	1, 705	> .001	.026
Interaction	6.87	1, 705	> .001	.003

Table 4

Simple Effects for Change in Positive Peer Relationships Scores Over Time Across Program Type

Time	Program type				<i>F</i> _{simple} (<i>df</i>)	$\eta^2_{\text{Generalized}}$
	Adventure program (<i>n</i> = 71)	Experiential program (<i>n</i> = 164)	Traditional camp (<i>n</i> = 228)	Mixed program (<i>n</i> = 246)		
Time 1	4.09 _b (.5963)	3.83 _a (.6938)	4.20 _b (.6329)	4.10 _b (.6081)	10.98*** (3, 708)	.04
Time 2	4.30 _b (.5751)	4.06 _a (.6595)	4.23 _b (.6641)	4.20 _b (.6380)	3.35* (3, 708)	.01
<i>F</i> _{simple} (<i>df</i>)	24.05*** (1, 70)	30.59*** (1, 163)	1.28 (1, 227)	11.05*** (1, 245)		
$\eta^2_{\text{Generalized}}$	.03	.03	.00	.01		

Note. Standard deviations appear in parentheses below means. Means within rows with differing subscripts are significantly different at $p < .05$, based on LSD *t* tests. Effect size ($\eta^2_{\text{Generalized}}$) represents the generalized formula recommended by Bakeman (2005) and indicates the percentage of variability accounted for by the repeated factor relative to the total variability in the model. Evaluated as small = .01, medium = .06, and large = .13.

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Tables 5 and 6 show the results for the Confidence factor. The main effect for time was significant. Girls reported they had significantly more confidence after participating in their respective programs than before (Time: $M = 4.03$, $SD = .4832$; Time: $M = 4.16$, $SD = .5176$). The main effect for program type was not significant; however, a trend toward significance between time and program type was observed. To aid comparability, the simple effects analyses decomposing the interaction are also reported for the Confidence factor. Again, the pattern of results indicates that some programs effected more change in participants than other programs. Though girls participating in all of the programs reported significantly more confidence after participating in a program, girls who participated in the adventure program showed the largest change.

Table 5*ANOVA Table for Change in Confidence Scores Over Time Across Program Type*

Effect	<i>F</i>	<i>df</i>	<i>p</i>	$\eta^2_{\text{Generalized}}$
Time 1 vs. Time 2	71.95	1, 707	> .001	.016
Program Type	1.88	1, 707	.131	.007
Interaction	2.13	1, 707	.095	.001

Table 6*Simple Effects for Change in Confidence Scores Over Time Across Program Type*

Time	Program type				<i>F</i> _{simple} (<i>df</i>)	$\eta^2_{\text{Generalized}}$
	Adventure program (<i>n</i> = 71)	Experiential program (<i>n</i> = 164)	Traditional camp (<i>n</i> = 228)	Mixed program (<i>n</i> = 248)		
Time 1	4.11 (.4817)	4.03 (.4819)	4.03 (.4439)	4.01 (.5184)	0.79 (3, 710)	.00
Time 2	4.32 _b (.4867)	4.14 _a (.5534)	4.12 _a (.5083)	4.17 _a (.5040)	2.92* (3, 710)	.01
<i>F</i> _{simple}	29.15***	14.05***	12.31***	33.61***		
(<i>df</i>)	(1, 70)	(1, 163)	(1, 227)	(1, 247)		
$\eta^2_{\text{Generalized}}$	.05	.01	.01	.02		

Note. Standard deviations appear in parentheses below means. Means within rows with differing subscripts are significantly different at $p < .05$, based on LSD *t* tests. Effect size ($\eta^2_{\text{Generalized}}$) represents the generalized formula recommended by Bakeman (2005) and indicates the percentage of variability accounted for by the repeated factor relative to the total variability in the model. Evaluated as small = .01, medium = .06, and large = .13.

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Discussion

This study examined whether girls' self-reported resilience increased after participating in programs, compared to preprogram reports; whether the self-reported levels of resilience differed for girls who participated in AE, EE, traditional camp, or mixed camp programs; and whether patterns of change in resilience were consistent across different programs.

In general, girls who participated in youth programs showed an increase in resilience, though it appears that not all programs were equally effective at increasing resilience. Though the overall magnitude of the change in resilience is small, even these small changes are potentially meaningful, as personal characteristics relevant to resilience develop over a lifetime of experience and should be slow to change. So even small changes can be considered impressive (Prentice & Miller, 1992).

The largest increases in resilience, in terms of both strengthening relationships with other girls and increased feelings of confidence, was experienced by girls who participated in an AE program. With respect to the degree to which girls felt socially connected to and supported by their female peers, girls who participated in AE, EE, and mixed camp programs reported modest improvements in their perceptions of their peer relationships, with the largest improvements observed among girls in AE and EE settings. In regard to confidence (which represents a com-

bination of self-efficacy and adaptive approach to challenge), girls reported significantly more confidence after participating in all youth programs types—the largest change occurred among girls who participated in the AE program.

AE settings may be uniquely situated to promote the development of peer relationships among girls because they include small group sizes and physically and mentally challenging tasks that require trust and cooperation with others (D'Amanto & Krasny, 2011; Dean & Harre, 2013; Overholt & Ewert, 2015; Sibthorp & Morgan, 2011). Similarly, EE programs may promote the building of peer relationships, as their goals are to provide environments that are absent from judgment and include emotional investment, examination of values, and the development of meaningful relationships (Chapman et al., 1992). Although camp settings also seek to promote social inclusiveness and provide a supportive climate (Garst et al., 2011), the outcomes were smaller when compared to AE and EE programs.

Strengths and Limitations

The main strength of this study is the use of a standardized instrument to measure resilience outcomes in youth programs. Researchers in AE, EE, and youth camping have expressed the importance of developing and using scales with known psychometric properties to measure outcomes (Henderson, Oakleaf, & Bialeschki, 2009; Scrutton & Beames, 2015; Sibthorp, Bialeschki, Morgan, & Browne, 2013) and of using instruments that are reliable, valid, and easy to administer and analyze.

The AGRS was developed over several years and created to measure specific traits associated with girls' resilience. The instrument had been piloted previous to this study and demonstrated convergent and discriminant validity with other measures of resilience (Aspelmeier et al., 2015). In the present study, all reliability coefficients were .83 or higher. The AGRS has potential for similar organizations to measure outcomes of girls' resilience and aid them in examining if and to what capacity they promote resilience in girls. The AGRS has been reduced to a shorter instrument (19 items) from its original 34 items, and specific factors of resilience could be measured independently (e.g., Positive Peer Relationships or Confidence). In addition, the AGRS is a free instrument with resources (e.g., a manual and Excel scoring spreadsheet) offering easy ways to measure change (Aspelmeier et al., 2015; Whittington et al., 2015) and conduct program evaluations. This scale would be most effective for analyzing programs that seek and implement program strategies to promote girls' resilience.

One limitation of the AGRS is that it does not measure personal characteristics associated with resilience such as attributional style and emotional stability/control, nor does it measure the broad availability of social supports, resources, family environment, or larger community that help support adolescent development. Therefore, this study does not measure all resilience-related characteristics or the broader resilience process. Another limitation of the study is that the data collection and analysis did not examine different outcomes based on demographics, dosage, and prior experience at camp. These factors may have changed the outcome of the data or at least provided interesting insights into the degree of change that can occur based on other factors.

Implications for Practitioners

This study suggests that all program types (AE, EE, traditional, or mixed camp experience) have the potential to promote resilience in girls. Although some program types were more effective (AE compared to a traditional camp setting), all settings supported some change in a positive direction.

Research on girls' programs suggests that simply offering an all-girls' program does not result in change. Researchers in the camping industry and in AE state that relational aggres-

sion (within the group) can impact the programmatic goals (Ditter, 2009; Sammet, 2010) and that leaders play an essential role in deflecting such behavior. Leaders should be trained in girls' development and issues pertinent to girls (Hurtes, 2002), as well as in relational aggression (Sammet, 2010). Leaders should also encourage an inclusive environment (Hurtes, 2002; Jordan, 2012; Sammet, 2010), one that promotes authentic relationship building, which can ultimately support girls' resilience (Debold et al., 1999; Jordan, 2012).

Conclusion

This study provided evidence that camps, AE, and EE programs may promote resilience in girls as a result of participation. Using the AGRS helped the researchers to systematically examine whether girls' levels of resilience increased postparticipation compared to preparticipation. It also allowed the researchers to examine whether program type had different outcomes and whether patterns of change in resilience were consistent across different programs. Although the results varied based on program type, the overall result is that all program settings promoted change in resilience scores among adolescent girls. As girls navigate a variety of challenges (Girls Scouts of the USA, 2013, 2017), the opportunity to develop resilience skills may have meaningful outcomes and at least offer opportunities for girls to develop protective coping skills that have the potential to help them deal with future adversity.

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