

Adventure Camp Programs, Self-Concept, and Its Effects on Behavioral Problem Adolescents

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The purpose of this study was to examine the effects of an adventure camp program on the self-concept of adolescents with behavioral problems. Subjects in the study included 61 randomly selected male and female adolescents with behavioral problems ranging in age from 9 to 17 years. The treatment group of 31 adolescents was randomly selected from a population (n=85) of behavioral problem adolescents who voluntarily attended an adventure camp. The control group of 30 adolescents was randomly selected from a population (n=80) that underwent treatment for behavioral problems. Analysis of variance was utilized to determine if significant differences existed between the treatment and control groups. The paired t-test was utilized to determine within group differences between pretest and posttest scores on both groups. Alpha for both tests was set at the .05 level. Analysis demonstrated a significant difference between the experimental and control 9 to 11 year age group's self-concept.

Keywords: Adventure Therapy, Camps, & Self-Concept

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Developing a positive self-concept in adolescents has been perceived as a precursor to the alleviation of behavioral problems. Adolescents with behavioral problems, labeled at risk, are pre-delinquent, troubled, hostile youth with few goals who possess a low self-concept that manifests itself in an alienation from society and its rules and regulations (Sparks & Stinson, 1991). Studies which focus on the relationship of self-concept to delinquency contend that the juvenile justice system diminishes the self-concept of adolescents who are officially labeled by it (Evens, Levy, Sullenberger, & Vyas 1991). Roid and Fitts (1988) stated:

The individuals' self-concept has demonstrated to be highly influential in much of their behavior and mental health. Those people who see themselves as undesirable, worthless, or bad tend to act accordingly. Those who have very deviant self-concept tend to behave in deviant ways. (p. 1)

Denti and Liderbach (1994) contend that children with emotional disturbances, by definition, have significant difficulties with alienation, antisocial behavior, lack of appropriate adult and peer relationships, and poor self-concepts. Varieties of intervention models have been developed to help abate these conditions. Recreation, in the form of adventure therapy programs, is one area that has attempted to help build a positive self-concept in adolescents.

Adventure Therapy Programs and Self-Concept

Several studies have been conducted to determine the relationship between self-concept and adventure therapy programs. Adventure therapy programs, as an alternative to traditional recreation, have demonstrated mixed findings in relation to self-concept. Positive changes in participant's self-concept were found in studies by (Crume, 1983; Hattie, Greensboro, Marsh, Neill, & Richards, 1997; McDonald, 1988; McDonald & Howe, 1989; McNamara, 2002; Uzomah, 2000) while others have proven to not be effective at all in changing the self-concept of participants (Duhaime, 1982; Gecevis, 2004; Hadley, 1994; O'Connell, 2002; Wright, 1995).

Duhaime (1982) examined the effects of an outdoor education program on the self-concept, social adjustment, classroom and affective behavior of learning-disabled children. Subjects for this study consisted of 33 boys and 15 girls aged 10 to 13 selected from a school of learning-disabled children in eastern Pennsylvania. Subjects were randomly assigned to one of three groups that included Outward Bound, recreation, and no treatment. Participants in the first two groups were exposed to an experience designed by the investigator specifically for its program format. Subjects were pre-tested and post-tested on a measure of self-concept, social adjustment, and classroom behavior. The data analysis indicated no significant difference on a measure of self-concept as a result of the treatment.

Crume (1983) studied the effects of an eight to ten day outdoor activity-based course on the self-concept of physical education and recreation majors at the University of Kentucky. Data was collected over a four-year period with intact groups of physical education and recreation majors. The participants of the study were involved in an outdoor-based course conducted at Land Between the Lakes in the state of Tennessee. Data was collected from the group during the months of May over a four-year period from 1979 to 1982 using a self reporting questionnaire. Results of the data analysis indicated that the group outdoor-oriented activities had a significant impact on the self-concept of participants.

McDonald (1988) studied the effect of cooperative, noncompetitive, initiative and challenge games on the self-concept of abused children. Subjects for this study consisted of 38 children in grades three through eleven whom resided in a foster care facility in South Carolina. Subjects were randomly assigned to an experimental and control group. The experimental group

received one hour of cooperative and initiative games each day over a 28-day period for a total of 28 one hour treatments. The control group received one hour of regular recreation games over the same period. Both groups of subjects were pre-tested and post-tested utilizing the Piers-Harris Children's Self-Concept Scale (Piers, Harris, & Herzberg, 2002). The results of the data analysis indicated significant differences in self-concept. Additionally, the data analysis indicated significant differences in the subscales of behavior, anxiety, popularity, and happiness and satisfaction.

McDonald and Howe (1989) used a challenge/initiative adventure-based counseling process in a wilderness treatment program with a group of 40 adolescents. Subjects participated in a one-hour challenge initiative program over a 28-day period. Forty minutes were devoted to challenge and initiative activities and the last 20 minutes were devoted to debriefing. Results of the data analysis demonstrated an overall significant difference in self-concept scores between the experimental and control groups.

Hadley (1994) studied the effects of an outdoor adventure experience on mood and self-concept. The Tennessee Self-Concept Scale (Fitts & Warren, 1996) was used to measure the degree of self-concept development after a river adventure trip. Subjects were given the instrument before, immediately after, and one month after the river experience. Results of the data analysis indicated no significant difference in the groups self-concept score due to the adventure experience. However, the data indicated improvements in the reduction of the participants' anxiety, depression, and hostility.

Wright (1995) evaluated the impact of an adventure tourism experience on self-concept. Subjects were two groups of college students selected from different parts of the United States. The treatment group was exposed to a 45-day adventure tourism experience of Australia and New Zealand during the winter of 1995. Results of the study indicated no significant difference between the two groups.

Hattie et al. (1997) conducted a meta-analysis of 96 studies which included adventure education and outward bound programs. They were able to estimate 1728 effect sizes within the 151 samples drawn from the 96 studies. The total number of participants was 12,057 with a mean average of 80 per study. The ratios of male to female participants within the 96 studies were 72% male and 28% female. Seventy five (75%) percent of the study's participants were adults or university students. On average the programs studied lasted between 1 and 120 days with a mean of 24 days. A large majority (72%) of the studies investigated lasted between 20 and 26 days. The data analysis resulted in an overall immediate program effect of .34 and the authors state this is similar to: (1) a 15% improvement in the rate of learning; (2) a .15 correlation between the outcome variable and the adventure experience; (3) a gain of 3 points in the outcome measures; and (4) two thirds of the students who participated in the adventure program exceeding the individuals who did not participate in an adventure program. Finally, the analysis indicated that adventure programs produce a positive follow up effect but that there are marked variations between them.

Uzomah (2000) studied the role of challenge/initiative recreation games as a therapeutic regimen to enhance the self-concept of inner city preschool youth. Using the Piers-Harris Children's Self-Concept Scale (Piers, Harris, & Herzberg 2002), the researcher examined 96 three, four, and five year old inner city preschool children over a month and a half period. The treatment group was exposed to the program for a six week period and compared to a similar group that participated in traditional recreation games. The analysis of variance was used to determine if any statistical difference existed between the participants' post-test scores of the

challenge/initiative games and the post-test scores of children who participated in traditional games in a recreation setting. The analysis demonstrated that significant differences existed between the two groups.

O'Connell (2002) examined the effects of an outdoor education course on the self-concept of high school students. Subjects for the study included two groups of students between the ages of 13 to 18 years who attended a private school in New York. The study was conducted over a 6 month period while the students were exposed to the course. A repeated measure of analysis covariance was used with self-concept and global self-concept as covariates. The data analysis demonstrated that there was no positive effect in global self-concept or any of the six domains of self-concept.

Mcnamara (2002), utilizing a case study approach, examined boys aged 9 to 11 years who had suffered from abuse and/or neglect. Subjects were exposed to a local adventure challenge program, Adventure Challenge 2000, to determine how and why the program impacted the participants' self-concept and interpersonal skills. The data analysis process indicated that the program had a positive impact on the participant's self-concept. Additional positive effects were noted in cooperation, problem solving, sharing, anger management, responsibility, communication, and trust.

Gecevis (2004) studied the effects of an outdoor challenge program on the self-concept and achievement of middle school students. Subjects for the study included 170 students from three different schools. A quasi-experimental pre-test/post-test design, the Self Perception Profile for Children (Harter, 1985), was used to assess the self-concept of the subjects. MANOVA and multiple regression analyses were used to determine if any changes existed due to participation in the outdoor challenge program. Data analysis demonstrated that there was no statistically significant difference in overall self-concept as a result of participating in the outdoor challenge program.

Research Questions

The purpose of this study was to investigate the effects of an adventure camp program on the self-concept of adolescents with behavioral problems. To achieve the purposes of this study, the researcher tested the following three null hypotheses:

- 1) There is no significant difference between the experimental and control groups' pre-test and post-test self-concept gain scores as measured by the Piers-Harris Children's Self-Concept Scale (PHCSCS) as a result of participation in an adventure camp program;
- 2) There is no significant difference between the experimental and control groups' pre-test and post-test cluster gain scores as measured by the PHCSCS as a result of participation in an adventure camp program; and
- 3) There is no significant difference between the experimental and control groups' 9 to 11, 12 to 14, and 15 to 18 year old age groups' self-concept gain score as measured by the PHCSCS as a result of participation in an adventure camp program.

Methods

Life Adventure Camp is a summer program that provides a five-day adventure camping experience for children with behavioral problems ages 9 to 18. Life Adventure Camp was started in 1977 in Lexington, Kentucky.

Attendees of Life Adventure Camp are referred from social service agencies located in central Kentucky. Various agencies, including the Kentucky Department of Social Services,

Bluegrass Regional Comprehensive Care Centers, Youth and Family Resource Centers, private counselors, and the school systems refer children who they believe might benefit from such an experience. The camp is based on a decentralized camping structure with small, self-sufficient groups comprised of 8 to 10 campers and three counselors. The participants are exposed to an adventure camp program that lasts for five days and four nights. During the adventure camp experience, participants share in the responsibility of living and working together in meeting the challenges of living in the outdoors. Life Adventure Camp lists three goal areas for camper development. The three areas include: self-concept; social skill development; and appreciation of the natural environment. Objectives have been developed for each area of camper development. The main objective of the self-concept area is to increase the individual's sense of confidence and self-worth.

In order to accomplish these objectives and goals, Life Adventure Camp utilizes a sequential adventure program model adapted from Roland (1993). Sequencing an outdoor-based program begins with the premise that the program starts at the readiness level of each participant or group of participants. In the Life Adventure Camp program, participants meet specific objectives at one level of the sequence and then progress to the next level.

Selection of Subjects

The subjects for this study were 61 male and female adolescents with documented, according to Diagnostic and Statistical Manual III (DSM III), behavioral problems. The subjects ranged in age from 9 to 17 years. All subjects were randomly selected from two separate yet similar populations. The treatment and control groups are discussed separately.

Treatment group

The treatment group consisted of 31 adolescents randomly selected from a population ($n = 85$) of behavioral problem adolescents referred to voluntarily attend Life Adventure Camp. All subjects and their parents and or guardians were required to attend a camper orientation. At the orientation, a slide show was presented about the camp in order for the camper and parent/guardian to make a decision about registering for the camp. If the child and parent decided to register for a camp session, additional forms were completed, signed, and returned to Life Adventure Camp. These forms consisted of a health history and a medical exam form. Due to confidentiality, the only demographic data collected consisted of age, grade in school, gender, and race.

Life Adventure Camp held 18 orientations for campers and their parents. The orientations provided basic information regarding camp dates, medical forms, permission slips, and informed consent forms. Four dates were randomly pulled from the 18 camp dates by dated papers from a box. The researcher made a brief presentation to the parents of the referrals asking for their cooperation in allowing their child to participate in the study. Once permission was obtained and informed consent forms were signed by the parents, the children were approached and given a presentation about the study and asked to participate.

Control group

The control group of 30 adolescents was randomly selected to participate from a population ($n=80$) who were undergoing treatment for behavioral problems at Bluegrass Regional Comprehensive Care Center in Lexington, Kentucky (Bluegrass Impact). Bluegrass Impact located in Lexington, Kentucky is a social service agency that diagnoses and treats adolescents with behavioral problems utilizing the DSM III criteria.

The researcher asked Bluegrass Impact for permission to solicit study participants. Bluegrass Impact informed the researcher that letters would be sent from the organization asking the clients and parents or guardians ($n=80$) if they would be willing to participate in a research study. The parents were instructed to send back the informed consent forms in the self-addressed envelopes provided by the researcher. Thirty parents and/or guardians responded with approved consent forms for a 37.5% response rate.

Descriptive data for this group was limited due to the confidentiality constraints of Bluegrass Impact. Consequently, only information on age, grade in school, gender, and race could be collected. Table 1 and 2 provide comparative data for age, grade, gender, and race for both groups of the study.

INSERT TABLE 1 ABOUT HERE

INSERT TABLE 2 ABOUT HERE

Instrumentation

The purpose of this study was to investigate the relationship between participation in an adventure camp program and the self-concept of adolescents with behavioral problems. In order to measure the dependent variables, the Piers-Harris Children's Self-Concept Scale (PHCSCS) (Piers & Harris, 1964) was utilized to measure the self-concept of each of the participants in the study.

Piers-Harris Children's Self-Concept Scale

After reviewing the previous studies that utilized different measuring instruments, a decision was made to utilize the Piers-Harris Children's Self-Concept Scale as the measuring instrument for this study. The Piers-Harris Children's Self-Concept Scale was developed by Piers and Harris (1964) to assess how children and adolescents feel about themselves. Self-concept as defined by Piers and Harris (1964) is "a relatively stable set of self-attitudes reflecting both a description and an evaluation of one's own behavior and attributes" (p. 1).

The Piers-Harris Children's Self-Concept Scale (PHCSCS) was selected as the measuring instrument for this study based on the following seven criteria: (a) global self-concept clusters; (b) age and grade capability; (c) administration time; (d) reading level suitability; (e) test-retest reliability; (f) level of internal consistency; and (g) validity.

The PHCSCS is a self-report measure that assesses a child's general self-concept in conjunction with six clusters that make up the instrument. The six clusters include: behavior; intellectual and school status; physical appearance and attributes; anxiety; popularity; and happiness and satisfaction. Each participant is shown statements that describe how some children feel about themselves. The participant is asked to show whether each statement applies to him or her by answering in a dichotomous yes or no fashion. There are 82 items for all six subscales. A breakdown of the 82 items into each of the subscales includes: 16 items in behavior; 17 items in intellectual and school status; 13 items in physical appearance and attributes; 14 items in anxiety; 12 items in popularity; and 10 items in happiness and satisfaction. Psychometric properties for this instrument have been reported across a wide range of children (Piers & Harris, 1964).

The average test-retest reliability scores was .73 across 20 populations in 12 studies (Henggeler & Tavormina, 1979; Lefley, 1974; McLaughlin, 1970; Querry, 1970; Piers & Harris, 1964; Platten & Williams, 1979, 1981; Shavelson & Bolus, 1982; Smith & Rogers, 1977;

Tavormina, 1975; Wing, 1966; Wolf, 1981). The lowest test-retest was .42 on a group of 39 mentally challenged and emotionally disturbed adolescents between the ages of 11 to 16 years old. The highest test-retest was .96 on a group of 10 children with mild articulation disorders in the third and fourth grades. Test-retest reliability scores on the subjects in this study were .88 on total self-concept. The subscales test-retest reliability scores were behavior .24, anxiety .93, happiness and satisfaction .82, intellectual/school status .85, physical appearance/attributes .86, and popularity .88.

Internal consistency coefficients for the total self-concept score across 10 samples ranged from .88 to .93 (Franklin, Duley, Rousseau, & Sabers, 1981; Lefley, 1974; Piers, 1973; Smith & Rogers, 1977; Winne, Marx, & Taylor, 1977; Yonker, Blixt, & Dinero, 1974).

The Piers-Harris Children's Self-Concept Scale demonstrates both convergent, discriminant, and construct validity. Shavelson and Bolus (1982) noted a convergent validity coefficient of .77. Franklin et al. (1981) reported a convergent validity coefficient of .78. Construct validity has been demonstrated over two studies (Shavelson, Hubner, & Stanton, 1976; Winne et al., 1977). Discriminant validity has been reported to be good with coefficients ranging from -.02 to .38 (Shavelson & Bolus, 1982). The Piers-Harris Children's Self-Concept Scale has been utilized often in research with troubled adolescents as well as recreation and camp programs (Abidin & Seltzer, 1981; Bowsby & Iso-Ahola, 1980; Chenery, 1981; Kendall & Braswell, 1982; Puckett & Ford, 1981; Stevens, 1975; Wanat, 1983; Zemke, Knuth, & Chase 1984).

Data Collection and Statistical Design

Design

This study utilized a quasi-experimental nonequivalent control group design to determine the effects of an adventure camp program on the self-concepts of adolescents with behavioral problems. Subjects in the study could not be randomly chosen from one population group. For the purposes of this study, two groups of adolescents with behavior problems were identified. Subjects in the first group, those that attended camp, were randomly chosen to participate in the study from a population that voluntarily chose to attend the adventure camp. Subjects in the second group, those not attending camp, were chosen from a group of adolescents receiving treatment from Bluegrass Impact.

Data Collection

During the months of June and July, 31 adolescents attended Life Adventure Camp located in Estill County Kentucky. Each of the 31 participants in the study was pre-tested during the camper orientation meetings held at Life Adventure Camp headquarters in Lexington, Kentucky. At various times over the two-month period, participants attended a five-day decentralized adventure camp experience. On the evening of the fourth day, each participant was post-tested utilizing the same measuring instruments given at the pre-test.

Each control group respondent from Bluegrass Impact was contacted by the researcher and a date was agreed upon when the researcher could administer the measuring instruments. The measuring instruments were administered to each of the 30 participants over a month and a half period from June to August. Participants were given a pre-test on a Monday and then a post-test on a Friday of the same week.

Analysis

A paired t-test was utilized to determine within group differences between pre-test and post-test scores on both groups. The analysis of variance (ANOVA) was utilized to determine if any significant difference existed between the group attending camp and those not attending camp. Alpha for both tests was set at the .05 level.

Results

Research Hypotheses

Hypothesis I: There is no significant difference between the experimental and control groups' pre-test and post-test self-concept gain scores as measured by the Piers-Harris Children's Self-Concept Scale (PHCSCS) as a result of participation in an adventure camp program. The results of the dependent samples t-test data analysis indicate a significant difference within the experimental group (as shown in Table 3). The data did not support any significant difference within the control group.

A one way analysis of variance was performed to determine if any statistical difference existed between the experimental and control groups' self-concept gain scores. The data analysis did not support any significant difference between the two groups.

INSERT TABLE 3 ABOUT HERE

Hypothesis II: There is no significant difference between the experimental groups' pre-test and post-test subscale gain scores as measured by the PHCSCS as a result of participation in an adventure camp program. The results of the dependent samples t-test data analysis shown indicate significant differences with the experimental group on three out of the six subscales of the PHCSCS (as shown in Table 4). Significant differences were exhibited in the following: 1) intellectual and school status; 2) popularity; and 3) happiness and satisfaction. Additionally, as viewed in table 4, the control group demonstrated significant differences in two out of the six subscales of the PHCSCS. Significant differences were exhibited in 1) intellectual and school status and 2) physical appearance and attributes.

A one way analysis of variance was performed to determine if any statistical difference existed between the experimental and control groups' self-concept cluster gain scores. The analysis demonstrated no significant differences between the groups on the PHCSCS subscale measures.

INSERT TABLE 4 ABOUT HERE

Hypothesis III. There is no significant difference between the experimental and control groups' 9 to 11, 12 to 14, and 15 to 18 year old age groups' self-concept gain scores as measured by the PHCSCS as a result of participation in an adventure camp program. The results of the dependent samples t-test data analysis indicate significant differences within the experimental 12 to 14 year old age group on the measure of self-concept (as shown in Table 5). No other age group in the experimental or the control group demonstrated significant differences between the pre-test and post-test self-concept scores.

A one way analysis of variance was performed to determine if any statistical difference existed between the experimental and control age groups' scores on self-concept. The results of the analysis demonstrated a significant difference between the experimental and control 9 to 11

year age group's self-concept. The F-ratio was 4.30 with 26 degrees of freedom and significant at the .05 level. No other age group demonstrated a significant difference.

INSERT TABLE 5 ABOUT HERE

Summary and Discussion

The purpose of this study was to investigate the relationship between participation in an adventure camp program and the self-concept of adolescents with behavioral problems. Two limitations existed in this study. First, the control group was involved in behavioral modification treatment during the study period. A second limitation was having to randomly choose subjects from a population who volunteered to participate in the study. As a result, it is important to note that the results of this study should not be generalized to a larger population.

There were three research hypotheses examined in this study. A summary of the research hypotheses followed by a discussion is presented below.

Research Hypothesis I: No significant difference existed between the experimental and control groups' pretest and posttest gain scores on a measure of self-concept as measured by the PHCSCS as a result of participation in an adventure camp program. The results of the data analysis did not support significant differences between the two groups; however, a significant difference was demonstrated within the experimental group.

Research Hypothesis I: No significant difference existed between the experimental and control groups' pretest and posttest subscale scores as measured by the PHCSCS as a result of participation in an adventure camp program. The results of the data analysis indicated the existence of a significant difference between the two groups on the subscale measure of behavior. Additionally, the experimental group demonstrated significant differences in the areas of behavior, intellectual and school status, popularity, and happiness and satisfaction.

Research Hypothesis III: No significant difference existed between the experimental and control groups' 9 to 11, 12 to 14, and 15 to 18 year old age groups' self-concept scores as measured by the PHCSCS as a result of participation in an adventure camp program. The results of the data analysis support the conclusion that significant differences existed between the 9 to 11 year age group on a measure of self-concept. However, no difference was demonstrated between the 12 to 14 or 15 to 18 year age groups on a measure of self-concept. Additionally, a significant difference was demonstrated within the experimental 12 to 14 year age group on a measure of self-concept.

The lack of a significant statistical difference between the two groups of this study would seem to be supported by previous research. Duhaim (1982) could not confirm that significant differences in self-concept existed between 33 boys and 15 girls aged 10 to 13 who were exposed to an outdoor education program. Hadley (1994) was unsuccessful in establishing that any change existed in the participants' self-concept after a river experience. Wright (1995) discovered that no statistical differences in self-concept existed between two college-aged groups after exposure to a 45 day adventure tourism experience. O'Connell's (2002) research demonstrated no positive effect on participants' self-concept of students between the ages of 13 to 18 years who were exposed to an outdoor education course over a 6 month period of time. Gecevis' (2004) data analysis of 170 middle school-aged children, who participated in an outdoor challenge program demonstrated that there was no statistically significant difference in the participants' overall self-concept.

These findings may be due in part to several confounding principles. First, the treatment periods in this and other studies may not have been of sufficient duration to elude statistically significant changes in self-concept. Second, the control group in this study was involved in behavior modification treatment during the period between pretesting and posttesting. Consequently, this may have influenced the outcome between the groups. Third, as Purkey (1988) posits, self-concept is a stable construct that resists change and it appears to be learned early in life. It is molded over time by an individual's experiences.

Notwithstanding, other studies have found that adventure therapy programs can be an effective means to enhance the self-concept of participants. The significant difference within the experimental group's self-concept score is similar to the findings of previous studies examining adventure therapy as a change agent for self-concept. As mentioned earlier, several studies have found significant differences with regard to adventure therapy programs and increases in self-concept.

Crume's (1983) data analysis demonstrated that group-oriented activities, conducted over an eight to ten day period over a four year timeframe, can have a significant impact on the self-concept of college aged participants. McDonald's (1988) study of 38 children in grades three through eleven established that cooperative, noncompetitive, initiative and challenge games, conducted over a 28 day period for one hour, can have a statistically significant impact on their self-concept. McDonald and Howe (1989) demonstrated that significant differences existed between two groups of adolescents after one group participated in a one hour initiative program each day over a 28 day period. Uzomah (2000) confirmed that statistically significant differences existed between two groups of three, four, and five year old inner city preschool children who participated in challenge/initiative recreation games over a six week period. Mcnamara (2002) examined boys aged 9 to 11 years of age and confirmed that an adventure challenge program had a positive impact on the participants' self-concept.

Hattie's et al. (1997) meta-analysis reported that the maximum effect that adventure programs had on participants' self-concept were within 4 domains. Those domains include: (1) independence; (2) confidence; (3) self-efficacy; and (4) self-understanding. It is important to note that this study additionally determined that self-concept and the domains listed above continued to be enhanced during follow up.

Excluding Hattie's et al. (1997) work, it would appear, based upon this study and the literature cited above, that programs which focus on younger ages produce better results. This would further be supported by Purkey (1988) who maintains that self-concept is learned early in life and then modified as the individual matures. Additionally, it would appear that programs that have a longer treatment exposure demonstrate better gains in a participant's self-concept. The meta-analysis conducted by Hattie et al. (1997) and this study appear to confirm that programs which emphasize independence, confidence, self-efficacy, and self-understanding produce enhancements in the participants self-concept.

Conclusion

The purpose of this study was to investigate the relationship between participation in an adventure camp program and the self-concept of adolescents with behavioral problems. The findings from this and other studies continue to be mixed.

Previous work cited in the review of literature as well as results from this study continue to provide an inconsistent picture of the effects of adventure camp programs on the self-concept of individuals. It would appear that this study supports the findings from previous studies,

(Duhaime, 1982; Gecevis, 2004; Hadley, 1994; O'Connell, 2002; Wright, 1995), that adventure camps illicit no change in a participant's self-concept when compared to other groups who do not participate in adventure camp programs. However, this study did find similar significant differences within the experimental groups on several measures of self-concept. This finding would support the previous findings (Crume, 1983; Hattie et al. 1997; McDonald, 1988; McDonald & Howe, 1989; McNamara, 2002; Uzomah, 2000) that did report changes in self-concept as a result of participation in adventure camp programs.

Based on the findings of this and previous studies the following recommendations are provided for consideration in future studies.

First, the control group should exclude individuals who are receiving therapy while the camp is in process in order to more truly reflect the effects that the adventure camp experience has between the two groups. Having a control group attend therapy confounds the findings. However, it would be extremely difficult to exclude a human subject from his/her daily routine.

Second, while this study investigated one adventure therapy model, studies of other program models should be undertaken to help predict a model to utilize in bringing about change in adolescents' self-concept. If a model could be identified that provides the best gains in self-concept it would allow agencies to become more efficient in providing services to their constituents.

Third, since the 9 to 11 year age group demonstrated significant gains in self-concept, further investigations need to be made regarding the precise age, within this age group, at which those gains are made. A more precise age may allow for more focused programs that could foster better self-concept gains.

Fourth, results of this study were based on data collected immediately following the treatment period. Follow-up studies conducted at specified periods of time, i.e. six months or one year following treatment, could provide additional insight regarding the effectiveness of the treatment in bringing about change over an extended period of time.

Fifth, while the current study suggests that participation in an adventure camp experience of short duration may have a positive impact on the self-concept of adolescents with behavioral problems, it might be hypothesized that exposure to similar experiences of longer duration could produce more positive results.

This study would appear to support the notion that adventure camp programs do not produce a significant difference between the two groups studied. However, there were some positive outcomes on some measures within the study. The study did produce significant differences between (a) the two groups on the behavior subscale of the measuring instrument and (b) within groups' differences between the 9 to 11 and 12 to 14 year age groups who attended the adventure camp program on a measure of self-concept. Further research on adventure camp programs is warranted and would hopefully produce more consistent outcomes in order to determine the total effect on participants

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Table 1

Means and Standard Deviations for Age and Grade in School Between Treatment (n=31) and Control Group (n=30)

Category	<u>Treatment</u>		<u>Control</u>	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Age	11.64	2.27	12.3	2.03
Grade In School	6.60	2.01	5.90	2.28

Table 2

Percent of Gender and Race Between Treatment (n=31) and Control (n=30)

Category	Treatment		Control	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Gender				
Male	21	68	19	63
Female	10	32	11	37
Race				
Caucasian	27	87	25	83
African American	4	13	5	17

Table 3

Paired Samples t-Test for Self-Concept Gain Scores

Group	<i>M</i>	<i>SD</i>	<i>t</i>
Treatment (n=31)	5.58	11.69	2.66**
Control (n=30)	0.56	2.92	1.06

Note. ** $p < .01$

Table 4

Paired Samples t-Test for PHCSCS Subscale Scores

PHCSCS Subscale	<i>M</i>	<i>SD</i>	<i>t</i>
Behavior			
Treatment	4.08	18.19	1.47
Control	-.20	1.19	-.92
Intellectual & School Status			
Treatment	1.32	3.38	2.18*
Control	0.47	1.13	2.25*
Physical Appearance & Attributes			
Treatment	0.71	2.34	1.69
Control	0.57	1.10	2.81*
Anxiety			
Treatment	0.45	2.17	1.16
Control	0.33	1.45	0.13
Popularity			
Treatment	1.06	2.28	2.60**
Control	0.23	1.46	0.88
Happiness & Satisfaction			
Treatment	0.77	1.94	2.22*
Control	0.40	1.16	1.88

Note. * $p < .05$ ** $p < .01$

Table 5

Paired Samples t-Test for Age Group Self-Concept Scores

Age Group	<i>M</i>	<i>SD</i>	<i>t</i>
9 to 11			
Treatment (n=15)	7.53	14.99	1.95
Control (n=12)	0.00	3.10	0.00
12 to 14			
Treatment (n=12)	5.83	7.34	2.76**
Control (n=10)	0.93	3.10	1.12
15 to 18			
Treatment (n=4)	-2.50	3.87	-1.29
Control (n=4)	1.00	1.83	1.10

Note. ** $p < .01$